MATANUSKA-SUSITNA BOROUGH
PLANNING COMMISSION AGENDA

Vern Halter, Mayor

PLANNING COMMISSION
Mary Anderson, District 1
Jason Ortiz, District 2
Patricia Chesbro, District 3
Colleen Vague, Chair, District 4
Chris Elder, District 5
Stafford Glashan, District 6
Sassan Mossanen, District 7

Michael Brown, Borough Manager

PLANNING & LAND USE DEPARTMENT
Alex Strawn, Director of Planning & Land Use
Kim Sollien, Planning Services Manager
Mark Whisenhunt, Acting Development Services Manager
Fred Wagner, Platting Officer
Karol Riese, Planning Clerk

Assembly Chambers of the
Dorothy Swanda Jones Building
350 E. Dahlia Avenue, Palmer

January 18, 2021
REGULAR MEETING
6:00 p.m.

Ways to participate in Planning Commission meetings:

IN PERSON. Should you wish to testify in person, please adhere to the 6-foot distance between yourself and others. It is required to wear a mask for anyone entering or attending meetings in MSB facilities.

IN WRITING: You can submit written comments to the Planning Commission Clerk at planning@matsugov.us.

TELEPHONIC TESTIMONY:

- Dial 1-855-290-3803; You will hear "Joining conference" when you are admitted to the meeting.
- You will be automatically muted and able to listen to the meeting.
- When the Chair announces audience participation or a public hearing you would like to speak to, press *3; you will hear, "Your hand has been raised."
- When it is your turn to testify, you will hear, "Your line has been unmuted."
- State your name for the record, spell your last name, and provide your testimony.

I. CALL TO ORDER, ROLL CALL, AND DETERMINATION OF QUORUM

II. APPROVAL OF AGENDA

III. PLEDGE OF ALLEGIANCE

IV. CONSENT AGENDA

Items on the consent agenda are considered to be routine and non-controversial by the Commission and will be approved by one motion. There will be no separate discussion of these items unless a Commission Member so requests, in which case the item will be removed from the Consent Agenda and considered in its normal sequence on the agenda.

A. MINUTES

1. December 21, 2021, regular meeting minutes

B. INTRODUCTION FOR PUBLIC HEARING: QUASI-JUDICIAL MATTERS

(None)

C. INTRODUCTION FOR PUBLIC HEARING: LEGISLATIVE MATTERS

1. **Resolution PC 21-02,** a resolution of the Matanuska-Susitna Borough Planning Commission recommending approval of an Ordinance amending 17.73.095 Domestic Wastewater System Plan Review.

V. COMMITTEE REPORTS

VI. AGENCY/STAFF REPORTS

VII. LAND USE CLASSIFICATIONS

VIII. AUDIENCE PARTICIPATION (*three minutes per person, for items not scheduled for public hearing*)

IX. PUBLIC HEARING: QUASI-JUDICIAL MATTERS (*Public Hearings shall not begin before 6:15 p.m.)*

Commission members may not receive or engage in ex-parte contact with the applicant, other parties interested in the application, or members of the public concerning the application or issues presented in the application.

The Planning Commission members may submit questions to the Planning Commission Clerk concerning the following matters or request for more information from the applicant at the time of the introduction. All questions and requests submitted by the Commission shall be in writing and copies will be provided to the applicant and made available to all interested parties and the public upon request. Answers to questions and additional material requests will be addressed in the staff report for the public hearing.

A. **PC Resolution 20-47** a conditional use permit modification request in accordance with MSB 17.60 – Conditional Uses; has been submitted by Kerby Coman, on behalf of Green Degree, for the operation of a marijuana retail facility located at 3361 W. Machen Road, Tax ID #2420B02L001; within Township 17 North, Range 1 West, Section 7, Seward Meridian *(Applicant: Kerby Coman, on behalf of Green Degree; Staff: Joe Metzger)*.

B. **PC Resolution 20-48** a conditional use permit modification request in accordance with MSB 17.60 – Conditional Uses; has been submitted by Kerby Coman, on behalf of Green Degree, for the operation of a marijuana retail facility located at 2301 S. Knik Goose Bay Road, Tax ID #1005000L00W-1; within Township 17 North, Range 1 West, Section 17, Seward Meridian *(Applicant: Kerby Coman, on behalf of Green Degree; Staff: Joe Metzger)*.

X. PUBLIC HEARING: LEGISLATIVE MATTERS

A. **Resolution 21-01**, a resolution supporting MSB Five Year Timber Harvest Schedule 2021-2025 *(Staff: Emerson Krueger)*.

XI. CORRESPONDENCE & INFORMATION

XII. UNFINISHED BUSINESS

A. **Resolution PC 20-42**, A resolution of the Matanuska-Susitna Planning Commission recommending adoption of the 2020 Mat-Su Borough Hazard Mitigation Plan. Public Hearing: December 7, 2020 & January 18, 2021 *(Staff: Taunnie Boothby)*.

XIII. NEW BUSINESS

XIV. COMMISSION BUSINESS

A. Adjudicatory (*if needed*)
B. Election of 2021 Chair and Vice Chair
C. Upcoming Planning Commission Agenda Items (*Staff: Mark Whisenhunt*)

XV. DIRECTOR AND COMMISSIONER COMMENTS

XVI. ADJOURNMENT (Mandatory Midnight)

In order to be eligible to file an appeal from a decision of the Planning Commission, a person must be designated an interested party. See MSB 15.39.010 for definition of "Interested Party." The procedures governing appeals to the Board of Adjustment & Appeals are contained in MSB 15.39.010-250, which is available on the Borough Internet home page, http://www.matsugov.us, in the Borough Clerk's office, or at various libraries within the Borough.

Disabled persons needing reasonable accommodation in order to participate at a Planning Commission Meeting should contact the borough ADA Coordinator at 861-8432 at least one week in advance of the meeting.

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MINUTES
December 21, 2020

(Pages 5-11)

MINUTES

The regular meeting of the Matanuska-Susitna Borough Planning Commission was held on August 17, 2020, at the Matanuska-Susitna Borough Assembly Chambers, 350 E. Dahlia Avenue, Palmer, Alaska. The meeting was called to order at 6:08 pm by Chair Colleen Vague.

I. CALL TO ORDER, ROLL CALL, AND DETERMINATION OF QUORUM

Planning Commission members present and establishing a quorum:
Ms. Patricia Chesbro, Assembly District #3
Ms. Colleen Vague, Assembly District #4, Chair
Mr. Chris Elder, Assembly District #5*
Mr. Stafford Glashan, Assembly District #6*
Mr. Sassan Mossanen, Assembly District #7

Planning Commission members absent and excused were:
Ms. Mary Anderson, Assembly District #1, Vice-Chair
Mr. Jason Ortiz, Assembly District #2

Staff in attendance:
Ms. Denise Michalske, Assistant Borough Attorney
Mr. Mark Whisenhunt, Acting Development Services Manager
Mr. Joseph Metzger, Planner II
Ms. Karol Riese, Planning Commission Clerk*
Ms. Taunnie Boothby, Planner II

*Indicates that the individual attended telephonically.

II. APPROVAL OF AGENDA

Chair Vague inquired if there were any changes to the agenda.

GENERAL CONSENT: The agenda was approved without objection.

III. PLEDGE OF ALLEGIANCE

The pledge of allegiance was led by Eugene Haberman.

IV. CONSENT AGENDA

A. Minutes

1. November 16, 2020, regular meeting minutes
there are a couple of early mentions of Commissioner Patricia versus Chesbro – corrected to Commissioner Chesbro.

2. December 07, 2020, regular meeting minutes
In the December 7 minutes, on page 7 of 9, the motion to approve Reso 20-45 was not by Mary Chesbro – corrected to Commissioner Chesbro.

B. INTRODUCTION FOR PUBLIC HEARING: QUASI-JUDICIAL MATTERS
(None)

C. INTRODUCTION FOR PUBLIC HEARING: LEGISLATIVE MATTERS

1. **Resolution 21-01**, a resolution supporting MSB Five Year Timber Harvest Schedule 2021-2025. Public Hearing: January 18, 2021 *(Staff: Emerson Krueger)*.

GENERAL CONSENT: The consent agenda was approved as amended without objection.

V. COMMITTEE REPORTS
(There were no committee reports.)

VI. AGENCY/STAFF REPORTS
(There were no Agency/Staff Reports.)

VII. LAND USE CLASSIFICATIONS
(There were no land use classifications.)

VIII. AUDIENCE PARTICIPATION (Three minutes per person.)

The following person spoke regarding concerns with the public process: Mr. Eugene Carl Haberman.

IX. PUBLIC HEARING: QUASI-JUDICIAL MATTERS

A. **PC Resolution 20-47** a conditional use permit modification request in accordance with MSB 17.60 – Conditional Uses; has been submitted by Kerby Coman, on behalf of Green Degree, for the operation of a marijuana retail facility located at 3361 W. Machen Road, Tax ID #2420B02L001; within Township 17 North, Range 1 West, Section 7, Seward Meridian *(Applicant: Kerby Coman, on behalf of Green Degree; Staff: Joe Metzger)*. Moved to January 18, 2021 meeting due to audio difficulties.

Chair Vague read the resolution title into the record.

Mr. Metzger provided a staff report:
- staff recommended approval of the resolution.

Commissioners questioned staff regarding:
- Commissioner Glashan asked about whether the notifications were sent out by certified mail? Mr. Metager answered the question and referenced page 96 of packet.
- Property to east is privately owned and staff stated that there were no residential structures. Would this be a pre-existing condition? Mr. Metzger stated the retail was first.
- Commissioner Mossanen asked if the Meadow Lakes Community Council meet to review this public notice. Mr. Metzger stated that they did have a meeting and they did receive and posted on their FaceBook page; we received no comments from them.

- Commissioner Vague hours of operation 8:00 am through midnight. What happens to the hours if Assembly approves? Is this listed as one of the ten most dangerous roads? Mr. Metzger stated he did not have that information; if there was an expansion, there would be access provided in some matter. Is there a way to get to Machen Road without using the Parks Highway? Mr. Metzger stated I believe there is, but I am not familiar with all the roads.
- Mr. Whisenhunt Machen Road connects to Church Road; Respectfull bring to the commission the unfair advantage concern is not within some of the approved standards and encourage the commission that all businesses have the ability to request specific hours for their business.

Chair Vague invited the applicant or their representative to provide an overview of their application.

Audio difficulties – people on the Sonexis system were unable to hear the meeting.

Recessed at 6:36 pm for 5 minutes; 6:41 pm

Since audio issues could not be corrected, the public hearing items are being moved to January 18, 2021 meeting 2021 (PC 20-47, 20-48, and 20-42).

B. **PC Resolution 20-48** a conditional use permit modification request in accordance with MSB 17.60 – Conditional Uses; has been submitted by Kerby Coman, on behalf of Green Degree, for the operation of a marijuana retail facility located at 2301 S. Knik Goose Bay Road, Tax ID #1005000L00W-1; within Township 17 North, Range 1 West, Section 17, Seward Meridian *(Applicant: Kerby Coman, on behalf of Green Degree; Staff: Joe Metzger)*. Moved to January 18, 2021 meeting due to audio difficulties.

X. PUBLIC HEARING LEGISLATIVE MATTERS

(There were no legislative public hearings.)

XI. CORRESPONDENCE AND INFORMATION

(There was no correspondence and information.)

XII. UNFINISHED BUSINESS

A. **Resolution PC 20-42**, A resolution of the Matanuska-Susitna Planning Commission recommending adoption of the 2020 Mat-Su Borough Hazard Mitigation Plan. Public Hearing: December 7, 2020 *(Staff: Taunnie Boothby)*. Moved to January 18, 2021 meeting due to audio difficulties.

XIII. NEW BUSINESS - *(There was no new business.)*

XIV. COMMISSION BUSINESS

A. Approval of the 2021 Planning Commission Meeting Schedule (*Staff: Mark Whisenhunt*).
MOTION: Commissioner Chesbro moved to adopted the 2021 Planning Commission Meeting Schedule as presented. The motion was seconded. By Sassan Mossanen

VOTE: The main motion passed without objection.

B. Upcoming Planning Commission Agenda Items (*Staff: Mark Whisenhunt*).
(Commission Business was presented, and no comments were noted.)

XV. DIRECTOR AND COMMISSIONER COMMENTS

Commissioner Chesbro: Merry Christmas, Happy Solstice, Happy New Year

Commissioner Vauge: Merry Christmas and any other holiday you celebrate. See you next year.

XVI. ADJOURNMENT

The regular meeting adjourned at 6:53 pm

COLLEEN VAGUE, Planning Commission Chair

ATTEST:

KAROL RIESE, Planning Commission Clerk

Minutes approved: ____

INTRODUCTION FOR PUBLIC HEARING

LEGISLATIVE

Resolution No. PC 21-02

Ordinance Amending 17.73.095 Domestic Wastewater System Plan Review

(Pages 12-32)

INTRODUCTION FOR PUBLIC HEARING

CODE ORDINANCE

Sponsored by:
Introduced:
Public Hearing:
Action:

MATANUSKA-SUSITNA BOROUGH
ORDINANCE SERIAL NO. 21-013

AN ORDINANCE OF THE MATANUSKA-SUSITNA BOROUGH ASSEMBLY AMENDING MSB 17.73.095 DOMESTIC WASTEWATER SYSTEM PLAN REVIEW.

BE IT ENACTED:

Section 1. Classification. This ordinance is of a general and permanent nature and shall become a part of the Borough Code.

Section 2. Amendment of section. MSB 17.73.095 is hereby amended to read as follows:

17.73.095 Domestic Wastewater System Plan [REVIEW]

(A) [ALL MULTIFAMILY DEVELOPMENTS NOT CONNECTED TO A MUNICIPAL SEWER SYSTEM ARE REQUIRED TO OBTAIN ADEC APPROVAL OF A DOMESTIC WASTEWATER SYSTEM PLAN IN ACCORDANCE WITH 18 AAC 72.200.]

(B) Within sixty (60) days of installation of the domestic wastewater system, documentation by a professional engineer, authorized to engage in that profession by the State of Alaska, must be submitted to the Planning Department certifying the domestic wastewater system was installed in full compliance with all applicable Alaska Department of Environmental regulations.

Section 3. Effective date. This ordinance shall take effect upon adoption.

ADOPTED by the Matanuska-Susitna Borough Assembly this - day of -, 2021.

_____
VERN HALTER, Borough Mayor

ATTEST:

_____
LONNIE R. McKECHNIE, CMC, Borough Clerk

(SEAL)

DRAFT

CHAPTER 17.73: MULTIFAMILY DEVELOPMENT DESIGN STANDARDS

Section

Article I. Adoption

17.73.010 Title

17.73.020 Intent and purpose

17.73.030 Application of provisions

17.73.040 Density

Article II. Application Requirements

17.73.050 Approval required

17.73.060 Administrative review

17.73.070 Planning commission review

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17.73.095 Domestic wastewater system plan review

17.73.100 Nonstructural fire and life safety plan review

17.73.110 Violation and enforcement

Article III. Incentives

17.73.120 Earning incentive points [Repealed]

Article IV. Standards

17.73.130 General design standards

17.73.140 Height [Repealed]

17.73.150 Access roads; Design/parking

17.73.160 Bicycle storage/parking [Repealed]

17.73.170 Lighting

17.73.180 Pedestrian circulation

17.73.190 Landscaping

17.73.200 Service area screening

17.73.210 Fencing and walls [Repealed]

17.73.220 Useable open space [Repealed]

17.73.230 Mixed use opportunities [Repealed]

17.73.240 Affordable housing [Repealed]

Article V. Definitions

17.73.250 Definitions

ARTICLE I. ADOPTION

17.73.010 TITLE.

(A) This chapter shall be known and cited as the "multifamily development design standards ordinance of the Matanuska-Susitna Borough."

(Ord. 12-169, § 2 (part), 2013: Ord. 06-188(SUB), § 2 (part), 2007)

17.73.020 INTENT AND PURPOSE.

(A) The overall goals of this chapter are to provide safe, affordable multifamily developments that promote a healthy lifestyle in the Matanuska-Susitna Borough (also referred to as "borough"). Also, this chapter encourages compatible multifamily development with surrounding land uses, and provides development incentives to encourage innovative multifamily development and affordable housing. Issues related to multifamily development, such as water quality, traffic impacts, design standards, and other associated concerns, are addressed by this chapter. This chapter establishes appropriate density levels for multifamily development throughout the borough.

(Ord. 12-169, § 2 (part), 2013: Ord. 08-018(SUB), § 2, 2008: Ord. 06-188(SUB), § 2 (part), 2007)

17.73.030 APPLICATION OF PROVISIONS.

(A) This chapter applies to all multifamily developments, including substandard dwellings, which meet or exceed the density threshold of this chapter, regardless of the form of ownership. This chapter applies to:

(1) all new multifamily developments started after the effective date of the ordinance codified in this chapter.

(2) all structural additions totaling 300 square feet and greater to an existing multifamily development.

(B) The provisions of this chapter are not applicable and may not be used for multifamily developments or buildings within the cities of Houston, Palmer, or Wasilla.

(C) The provisions of this chapter are the responsibility of the developer.

(Ord. 12-169, § 2 (part), 2013: Ord. 08-018(SUB), §§ 3, 4, 2008; Ord. 07-058, § 1, 2007; Ord. 06-188(SUB), § 2 (part), 2007)

17.73.040 DENSITY.

(A) Density thresholds are used by this chapter to determine if the chapter applies. The density thresholds are determined using the following subsections:

(1) Residential development constructed at a density greater than two dwelling units per 40,000 square feet of lot area; or

(2) Any development exceeding six dwelling units, regardless of lot size.

(3) This chapter shall apply to substandard dwellings offered for compensation in the form of money, services, or barter that are constructed at a density:

(a) equal to or greater than one dwelling per 40,000 square feet of lot area, calculated at 0.000025 multiplied by the lot area; and

(b) exceeding two dwellings regardless of lot size.

(4) This density threshold does not apply to short-term transient accommodations, as defined by this chapter and subject to regulations by MSB 3.32.010, 3.32.020, and 3.32.030 and subsequent amendments. Short-term transient accommodations shall be exempt from the standards of this chapter.

(B) Density ceiling is the maximum number of dwelling units that can be built per 40,000 square feet. A density ceiling applies when allowed through the application of this chapter and unless otherwise established within a SPUD or another codified standard.

(1) Two density ceilings are provided.

(a) Core Area (As Delineated in the MSB Core Area Comprehensive Plan).

(i) The maximum number of dwelling units allowed within the core area is 18 units per 40,000 square feet.

(b) Non-Core Area.

(i) The maximum number of dwelling units allowed outside of the core area is 12 units per 40,000 square feet.

(2) Regardless of location, substandard dwellings that are being offered for compensation in the form of money, services, or barter are subject to the following density ceilings:

(a) one substandard dwelling per 40,000 square feet; or

(b) two substandard dwellings, regardless of lot size.

(Ord. 18-013, § 2, 2018; Ord. 12-169, § 2 (part), 2013; Ord. 08-018(SUB), §§ 5, 6, 2008; Ord. 07-058, § 2, 2007; Ord. 06-188(SUB), § 2 (part), 2007)

ARTICLE II. APPLICATION REQUIREMENTS

17.73.050 APPROVAL REQUIRED.

(A) Multifamily development permit application approval is required prior to commencement of a multifamily development that meets or exceeds the density threshold of this chapter.

(B) A complete application includes the following:

(1) nonrefundable multifamily development permit fee;

(2) three copies of the following documents:

(a) permit application;

(b) certified site plan (see definition);

(i) The landscape and drainage plans may be included as part of the certified site plan;

(c) *[Repealed by Ord. 12-169, § 2, 2013]*

(d) drainage plan;

(3) *[Repealed by Ord. 12-169, § 2, 2013]*

(4) additional information as determined by the director.

(Ord. 12-169, § 2 (part), 2013: Ord. 08-018(SUB), § 7, 2008; Ord. 07-058, § 3, 2007; Ord. 06-188(SUB), § 2 (part), 2007)

17.73.060 ADMINISTRATIVE REVIEW.

(A) Each application for multifamily development will be approved administratively, unless a variance or other modification to the standards of this chapter is requested.

(B) The planning and land use director or designated staff shall determine whether an application for a multifamily permit is complete. An incomplete application shall be returned to the applicant with a written explanation of application deficiencies within seven working days of the date the application is received in the planning and land use department.

(C) Decisions will be rendered within ten working days from the date the application is determined complete.

(D) The director may revoke any approved application if the development does not conform to the approved application.

(E) If the proposed multifamily development contains or will contain any substandard dwellings offered for commercial compensation in the form of money, services, or barter, and if the minimum criteria for a multifamily development permit are met, the director will notify surrounding property owners in accordance with MSB 17.03, Public Notification. Within 30 days of acceptance of the completed application, the director shall issue a decision on the application with conditions to address concerns raised by surrounding property owners within the notification area, if deemed appropriate by the director.

(Ord. 12-169, § 2 (part), 2013: Ord. 06-188(SUB), § 2 (part), 2007)

17.73.070 PLANNING COMMISSION REVIEW.

(A) In the event the applicant wishes to vary from any of the standards of this chapter, the planning commission may grant variances from the standards contained in this chapter. The planning commission will base its decision on the variance review criteria described in MSB 17.65.

(B) The planning commission may consider comments from the department of emergency services when granting a variance.

(C) The planning commission may require conditions of approval when granting a variance to support the overall objectives of the multifamily standards.

(Ord. 12-169, § 2 (part), 2013: Ord. 08-018(SUB), §§ 8, 9, 2008; Ord. 06-188(SUB), § 2 (part), 2007)

17.73.080 APPEALS PROCESS.

(A) The appeal of a decision shall be conducted in accordance with the process outlined in MSB 15.39.

(Ord. 12-169, § 2 (part), 2013: Ord. 07-058, § 4, 2007; Ord. 06-188(SUB), § 2 (part), 2007)

17.73.090 CONFLICTING PROVISIONS.

(A) If any provisions of this chapter are inconsistent with one another or if they conflict with provisions found in other adopted borough, state, federal, or local codes, ordinances, or regulations, the more restrictive provision will apply.

(Ord. 12-169, § 2 (part), 2013: Ord. 06-188(SUB), § 2 (part), 2007)

17.73.095 DOMESTIC WASTEWATER SYSTEM PLAN REVIEW.

(A) All multifamily developments not connected to a municipal sewer system are required to obtain ADEC approval of a domestic wastewater system plan in accordance with 18 AAC 72.200.

(Ord. 18-013, § 3, 2018)

17.73.100 NONSTRUCTURAL FIRE AND LIFE SAFETY PLAN REVIEW.

(A) All multifamily dwellings:

(1) shall comply with current Alaska State Fire Code;

(2) may be subject to a nonstructural fire and life safety plan review before construction may begin;

(3) *[Repealed by Ord. 07-058, § 5, 2007]*

(B) *[Repealed by Ord. 07-058, § 5, 2007]*

(C) *[Repealed by Ord. 07-058, § 5, 2007]*

(D) *[Repealed by Ord. 07-058, § 5, 2007]*

(E) *[Repealed by Ord. 07-058, § 5, 2007]*

(F) The following design standards shall be required:

(1) Separation distances between habitable buildings shall be no less than 20 feet, unless approved by the State Fire Marshal or the local fire marshal where a state deferment exists;

(2) *[Repealed by Ord. 12-169, § 2, 2013]*

(3) Hard-wired smoke and carbon monoxide detectors shall be installed in all multifamily dwellings.

(Ord. 12-169, § 2 (part), 2013: Ord. 08-018(SUB), § 10, 2008; Ord. 07-058, § 5, 2007; Ord. 06-188(SUB), § 2 (part), 2007)

17.73.110 VIOLATION AND ENFORCEMENT.

(A) Except as otherwise specified in this chapter, violations of this chapter are infractions.

(B) Remedies, enforcement actions, and penalties shall be consistent with the terms and provisions of MSB 1.45.

(Ord. 12-169, § 2 (part), 2013: Ord. 06-188(SUB), § 2 (part), 2007)

ARTICLE III. INCENTIVES

17.73.120 EARNING INCENTIVE POINTS. [Repealed by Ord. 12-169, § 2, 2013]

ARTICLE IV. STANDARDS

17.73.130 GENERAL DESIGN STANDARDS.

(A) *[Repealed by Ord. 12-169, § 2, 2013]*

(1) No more than 60 percent of the lot area shall be occupied by impervious surface areas;

(2) *[Repealed by Ord. 12-169, § 2, 2013]*

(3) *[Repealed by Ord. 07-058, § 7, 2007]*

(4) *[Repealed by Ord. 12-169, § 2, 2013]*

(5) Comply with Americans with Disabilities Act of 1990 (ADA) Requirements. In addition to ADA, all buildings exceeding four units must comply with all of the Fair Housing Act of 1968 requirements;

(6) *[Repealed by Ord. 12-169, § 2, 2013]*

(7) *[Repealed by Ord. 12-169, § 2, 2013]*

(8) Perimeter setbacks are the minimum required yards measured from the perimeter property lines or public access easement(s), whichever is the more restrictive. The following perimeter setbacks apply:

(a) front: 25 feet;

(b) rear: 20 feet; and

(c) side: ten feet;

(9) *[Repealed by Ord. 12-169, § 2, 2013]*

(10) Minimum interior setbacks are measured between habitable buildings, detached garages, and other detached accessory buildings.

(a) *[Repealed by Ord. 12-169, § 2, 2013]*

(b) detached garages: ten feet; and

(c) other detached nonhabitable accessory buildings: ten feet;

(11) *[Repealed by Ord. 12-169, § 2, 2013]*

(12) Roof overhangs may project from the outside wall no more than two feet into the setback, and are not considered as part of the setback.

(Ord. 12-169, § 2 (part), 2013: Ord. 08-018(SUB), §§ 12, 13, 2008; IM 07-289, page 2 (part), presented 11-13-07; Ord. 07-058, § 7, 2007; Ord. 06-188(SUB), § 2 (part), 2007)

17.73.140 HEIGHT. [Repealed by Ord. 12-169, § 2, 2013]

17.73.150 ACCESS ROADS; DESIGN/PARKING.

(A) All primary vehicle access to a multifamily development, at a minimum, shall be from a residential road as described by the borough's Subdivision Construction Manual;

(B) The following standards shall apply:

(1) Vehicle Access and Circulation.

(a) Any multifamily developments exceeding the thresholds of MSB 17.61.050 will submit a traffic impact analysis (TIA) as directed;

(b) The director has the authority to restrict or require additional access to the development when the need to do so is dictated by one or more of the following conditions:

(i) the development causes or increases hazardous traffic conditions; or

(ii) there is inadequate access provided for emergency vehicles; or

(iii) the development causes hazardous conditions to exist which would constitute a clear and present danger to the public health, safety, and general welfare;

(c) To provide for increased traffic movement on congested streets and to eliminate road capacity conflicts, the director may consult with the planning transportation division or the public works department for findings that may restrict the location of driveways or approach roads on streets and require the location of driveways and approach roads to be placed on adjacent streets, or in a new location;

(2) *[Repealed by Ord. 08-018(SUB), § 16, 2008]*

(3) Multifamily residential developments shall not have primary access to an arterial street(s), unless approved by the appropriate governing entity; and

(4) The internal drive system will connect to the perimeter public street system to provide for inter-connectivity with public amenities, adjoining neighborhoods, and adjacent developments; and

(5) For emergency service purposes, all internal drive systems shall conform to MSB 11.20 and be named.

(C) Street Design.

(1) Street design shall minimize automobile and pedestrian conflicts and strive to create low-profile, safe, modest parking areas. All public street design standards shall comply with the borough's Subdivision Construction Manual. The following standards shall apply:

(a) The development's street design shall create a hierarchy of streets and drives for the development. To the extent possible, the design of all through-access drives shall be consistent with, and aligned with, residential drives or through-access drives in adjacent existing or planned development sites.

(D) Private Access Drives.

(1) Minimum private access drive width must be no less than 20 feet in width.

(a) For road design and access standards, see the borough's Subdivision Construction Manual.

(b) Parking along private access drives is prohibited unless designed to accommodate the standards of this chapter.

(E) Parking Standards. Minimum parking spaces required per dwelling unit:

(1) efficiency unit: 1.0 per dwelling unit;

(2) one- to two-bedroom units: 1.5 per dwelling unit; and

(3) three- or more bedroom units: 2.0 per dwelling unit.

(F) Vehicle Parking Space Design Requirements.

(1) Standard:

(a) length: 20 feet;

(b) width: ten feet; and

(c) vertical clearance: seven feet;

(2) Barrier-free (ADA):

(a) one barrier-free parking stall shall be provided for every 25 required parking stalls.

(i) width: eight feet plus a five-foot adjacent access aisle;

(ii) length: 20 feet; and

(iii) vertical clearance: eight feet.

(Ord. 12-169, § 2 (part), 2013: Ord. 08-018(SUB), § 16, 2008; Ord. 07-058, § 8, 2007; Ord. 06-188(SUB), § 2 (part), 2007)

17.73.160 BICYCLE STORAGE/PARKING. [Repealed by Ord. 12-169, § 2, 2013]

17.73.170 LIGHTING.

(A) Lighting standards provide visual safety in high traffic areas within the development while preventing excessive lighting and glare on adjacent properties.

(B) Exterior lighting shall comply with the following standards:

(1) Pedestrian pathways must have adequate lighting with increased illumination around building entrances and transit stops.

(2) All parking areas exceeding 18 on-site parking stalls must have adequate lighting.

(3) Lights in parking lots must be non-glare and must be mounted no more than 20 feet above the ground.

(4) *[Repealed by Ord. 12-169, § 2, 2013]*

(5) Glare and illumination associated with exterior lighting shall be contained on the subject property and not impact adjacent properties.

(Ord. 12-169, § 2 (part), 2013: Ord. 06-188(SUB), § 2 (part), 2007)

17.73.180 PEDESTRIAN CIRCULATION.

(A) *[Repealed by Ord. 12-169, § 2, 2013]*

(B) On-site pedestrian paths shall comply with the following standards:

(1) *[Repealed by Ord. 12-169, § 2, 2013]*

(2) *[Repealed by Ord. 12-169, § 2, 2013]*

(3) within all multifamily developments, each residential building will be connected by a path to the vehicular parking area;

(4) crossings shall be designed and located for pedestrian safety wherever required pedestrian paths intersect with vehicle access driveways or parking lots;

(5) required paths shall be paved with hard surface materials as defined in the most recent version of the ADA Standards for Accessible Design; and

(6) path widths shall be no less than five feet.

(Ord. 12-169, § 2 (part), 2013: Ord. 07-058, § 9, 2007; Ord. 06-188(SUB), § 2 (part), 2007)

17.73.190 LANDSCAPING.

(A) *[Repealed by Ord. 12-169, § 2, 2013]*

(B) Landscaping. The existing natural landscape, especially healthy plants, shrubs, and trees indigenous to the area, should be preserved to an extent that is reasonable and feasible. Further, if it is not prudent to retain existing vegetation or no existing vegetation exists, the site shall be designed to accommodate landscaping. The following landscaping standards apply:

(1) Landscape Plan.

(a) The applicant's proposed landscape plan will indicate the project's compliance with these standards.

(2) Plant Materials.

(a) Retain, at a minimum, 10 percent of the existing ground cover, natural plant species, and healthy tree canopy of the lot, including the understory and foliage; or

(b) Install landscaping for 10 percent of the area within a 100-foot radius of each structure on the property. Installed landscaping shall be:

(i) a species known to reach a minimum height of at least three feet and tolerant of the climate zone; and

(ii) established within two years of the project's application.

(3) Perimeter Landscaping.

(a) The perimeter(s) of the subject development adjacent to developed or developable properties, other than a street edge, require a perimeter landscape buffer.

(i) Vegetation used for the perimeter buffers shall be, at a minimum, three feet in height at the time of installation.

(ii) Vegetation used for the perimeter buffers shall be species known to reach a minimum height of six feet and tolerant of the local climate zone.

(b) Perimeter buffers shall be landscaped with a combination of evergreen trees or shrubs at a ratio of one per 40 linear feet of edge, measured on center. Fractional requirements will be rounded up.

(c) All perimeter landscaping located on corner lots shall be located and maintained so as not to obstruct vehicular/driver visibility in accordance with the American Association of State Highway and Transportation Officials (AASHTO) standards.

(d) Exception. If the application has multiple lots that will be part of one large multifamily development, perimeter landscaping is only required around the perimeter of the overall development area.

(4) Perimeter Fences and Walls.

(a) A perimeter fence or wall is not required but may be installed. If a perimeter fence or wall is installed, in addition to the perimeter landscaping, then the following standards apply:

(i) walls and fences shall be constructed of high-quality materials, such as treated wood, decorative blocks, brick, stone, wrought iron, chain link, and other natural and appropriate building materials.

(Ord. 12-169, § 2 (part), 2013: Ord. 07-058, § 10, 2007; Ord. 06-188(SUB), § 2 (part), 2007)

17.73.200 SERVICE AREA SCREENING.

(A) Service areas often create noise and visual impacts on adjacent uses and neighborhoods. The following standards visually screen on-site service areas, including trash collection areas, from public rights-of-way and adjacent properties;

(B) Trash containers and collection areas must be oriented away from public streets or adjacent property lines;

(C) Trash collection areas will be located a minimum of 20 feet from any adjacent property line;

(D) Trash containers must be secured from the effects of wind; and

(E) Trash containers and collection areas will be screened using any of the following methods:

(1) fence or wall at least five feet in height;

(2) one three-foot-wide row of vegetation screening, using vegetation at least five feet in height; or

(3) any combination of the above.

(Ord. 12-169, § 2 (part), 2013: Ord. 07-058, § 11, 2007; Ord. 06-188(SUB), § 2 (part), 2007)

17.73.210 FENCING AND WALLS. [Repealed by Ord. 12-169, § 2, 2013]

17.73.220 USEABLE OPEN SPACE. [Repealed by Ord. 12-169, § 2, 2013]

17.73.230 MIXED USE OPPORTUNITIES. [Repealed by Ord. 12-169, § 2, 2013]

17.73.240 AFFORDABLE HOUSING. [Repealed by Ord. 18-013, § 4, 2018]

ARTICLE V. DEFINITIONS

17.73.250 DEFINITIONS.

(A) For purposes of this chapter, the following definitions shall apply. All other definitions are listed in MSB 17.125, Definitions.

- "Developer" means the legal or beneficial owner or owners of a lot or of any land included in a proposed multifamily development.

- "Dwelling unit" means a single unit providing complete, independent living facilities for one or more persons, including permanent provisions for living, sleeping, eating, cooking, and sanitation or a portion of the land area of a planned development, residential development or site condominium project designed and intended for residential construction.

- "Grade plane" means a reference plane representing the average of finished ground level adjoining the building at exterior walls. Where the finished ground level slopes away from the exterior walls, the reference plane shall be established by the lowest points within the area between

the building and the lot line or, where the lot line is more than six feet (1,829 mm) from the building, between the building and a point six feet (1,829 mm) from the building.

- "Height, building" means the vertical distance from grade plane to the average height of the highest roof surface.

- "Substandard dwelling" means a structure used for human habitation, including a structure mounted on skids or wheels, which lacks one or more of the following:

  (a) footings, pilings, or permanent foundations; or

  (b) water plumbed to run within the dwelling; or

  (c) meets the standards of the Alaska State Department of Environmental Conservation waste water and septic systems.

(Ord. 18-013, § 5, 2018; Ord. 12-169, § 3, 2013; Ord. 08-018(SUB), § 17, 2008)

Interim Guidance:
Conventional Onsite Wastewater Systems
Effective September 30, 2019

The section of Engineering Support and Plan Review (ESPR) has been working towards programmatic and organizational changes in order to prioritize section tasks. The higher priority focus areas were determined to include: discharges to Waters of the US, higher risk discharges, and areas where the density of smaller scale subsurface wastewater discharges are impacting, or have a higher risk of impacting, groundwater aquifers and surface waters.

In order to redirect staff time to address a significant back log of plan review submittals, reorganization of the section to focus on priority tasks, and to continue efforts towards creating other efficiencies, the ESPR section has determined the current workload must be reduced.

Therefore, in addition to the conventional wastewater systems that are currently exempt from plan approval, an Alaska registered professional engineer may design and oversee construction, without prior approval, for conventional onsite wastewater systems serving residential or commercial buildings located on a single lot with a total on lot design flow less than 2,500 gpd as long as the following requirements are met:

- the conventional wastewater system must not serve buildings operated as part of a larger commercial operation, regardless if located on a separate lot, with a total facility design flow of 2,500 gpd or more

- the facility operations in the entirety must only produce domestic wastewater; if any part of the facility operations result in the production of non-domestic wastewater, prior plan approval is still required; private residence garage floor drains are not considered a source of non-domestic wastewater for the purpose of this guidance

- the design flow must be calculated using 150 gpd per bedroom for residential units or in accordance with the UPC or EPA manual using typical design flows for that type of facility

- the system construction must meet all construction standards and other requirements of 18 AAC 72 and the Onsite Wastewater System Installation Manual

- the system must be registered within 90 days of construction by submitting a completed and sealed Documentation of Construction (DOC) form and paying the $115 registration fee; it is the engineer's responsibility to ensure the system is properly registered.

Conventional onsite wastewater systems that do not meet these requirements must continue to have department approval prior to construction. Please refer to the Additional Guidance below for how this may further affect projects that have already been submitted for review.

To stay informed on other upcoming changes, please join the dec.wastewater.systems listserv at list.state.ak.us.

Additional Guidance

The ESPR section currently has an extensive backlog of plan review submittals. If a wastewater system design that does not require plan review under this interim guidance has already been submitted for review, or has already received construction approval, the following actions may be taken:

- The Department will not accept payment for any pending plan review fee for wastewater systems that meet the above criteria; the engineer and owner will be informed via email that registration of the system with a Documentation of Construction (DOC) form is required.

- If a plan review fee has already been processed for a system meeting the above criteria, the engineer may request to withdraw the application but no refund will be issued; upon request, the Department will waive the DOC fee for systems registered within one year of the date this guidance is effective.

- If a request for Approval to Construct (ATC) is currently under review, the engineer may still request to withdraw the application but no refund will be issued and the DOC fee will not be waived; the withdrawal request may be denied if the plan review engineer has noted major deviations from prescribed standards or has other concerns.

- If an ATC has already been issued and is current as of the effective date of this guidance, the engineer may

    - submit a request for Final Approval to Operate (FATO) in accordance with the ATC letter so the project can be closed under current regulations, or

    - request the ATC be voided; the system must then be registered in accordance with this policy and the $115 registration fee paid; the Department may deny this request if conditions were placed on the ATC or the system otherwise did not meet all construction requirements.

- If an ATC has been issued but has expired as of the effective date of this policy and no FATO request has been submitted then

    - if the system is already constructed, the engineer must apply for FATO within 90 days, or

    - if system has not yet been constructed, the ATC is void and a DOC with the $115 registration fee must be submitted in accordance with this guidance or future regulations.

- If a FATO request has already been submitted, no action is needed; the Department will be addressing the backlog.

If there are any questions regarding this guidance, please contact Tonya Bear, ESPR acting section manager, at 451-2177 or tonya.bear@alaska.gov.

To stay informed on other upcoming changes, please join the dec.wastewater.systems listserv at list.state.ak.us.

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PUBLIC HEARING

QUASI-JUDICIAL

Resolution No. PC 20-47

Green Degree

(Pages 33-134)

PUBLIC HEARING

MATANUSKA-SUSITNA BOROUGH
Planning and Land Use Department
Development Services Division
350 East Dahlia Avenue • Palmer, AK 99645
Phone (907) 861-7822
www.matsugov.us

DEVELOPMENT SERVICES DIVISION STAFF REPORT

Date:	January 6, 2021
File Number:	1760202000012
Applicant:	Kerby Coman, on behalf of Green Degree
Property Owner:	Green Land Group, LLC
Request:	Planning Commission Resolution 20-47 Modification to an existing Conditional Use Permit for the operation of a marijuana retail facility in accordance with MSB Chapter 17.60 – Conditional Uses
Location:	3361 West Machen Road (Tax ID# 2420B02L001); within Township 17 North, Range 1 West, Section 7, Seward Meridian
Size of Facility:	Approximately 990 Square Feet
Reviewed By:	Alex Strawn, Planning & Land Use Director Mark Whisenhunt, Acting Development Services Manager
Staff:	Joe Metzger, Planner
Staff Recommendation:	Approval

EXECUTIVE SUMMARY

A conditional use permit application has been submitted to modify the operation of an existing marijuana retail facility. The applicant is proposing to move the retail facility to a different portion of the existing structure, increase the size of the retail facility, and expand the hours of operation. Specifically, the request would increase the size of the retail facility from approximately 750 square feet to 990 square feet. The current operating hours are 10:00 a.m. to 10:00 p.m., Monday thru Saturday, and the request is to expand the hours of operation to 8:00 a.m. to 5:00 a.m., daily.

MSB 17.60.040 allows a property owner or authorized agent, to apply for a modification of a conditional use permit. This review and recommendation is limited to the scope of the request and will not address the operation as a whole. Should this request be denied, the existing Conditional Use Permit #176020170011, approved through Planning Commission Resolution 17-26, will remain in effect as is. In the event the request is approved, it will be a modification of the existing Conditional Use Permit as detailed in Planning Commission Resolution 20-47.

LAND USE

Existing Land Use/Background:
The subject property is Lot 1, Block 2 of the Parks Highway Industrial Subdivision. The subject lot accesses directly onto the frontage road known as West Machen Road. Other than new signage and additional lighting, the subject structure has maintained the appearance and size since its original construction in 1999. As part of the modification a small addition (artic entry) is currently under construction to the area that is proposed to be the new location of the retail facility. Currently there is a licensed limited marijuana cultivation facility where the proposed retail would be moved to. If the modification request is approved, the limited cultivation facility would be moved to where the current marijuana retail facility is located.

On July 17, 2017, Rosebuds Shatter House, now Green Degree, was issued Conditional Use Permit 176020170011 for the operation of a marijuana retail facility. The facility has been in operation since 2017 and has received no violations or citations from the MSB.

Surrounding Land Uses:
The Parks Highway right-of-way abuts the parcel to the south. The Parks Highway and West Machen Road are both within the right-of-way. West Machen Road is dominated by commercial and industrial uses on its frontage; however, there are a couple of residential uses. To the south and west are more commercial uses and one church. To the north and east there is a mix of residential uses and vacant land. The city limits of Wasilla abut the subject property to the east.

REVIEW OF APPLICABLE CRITERIA AND FINDINGS

MSB 17.03 – Public Notification
On November 5, 2020 notices were mailed to all property owners within a 600-foot radius of the use and to Meadow Lakes Community Council. A total of 19 notices were mailed. A courtesy notice was also mailed to the City of Wasilla on November 5, 2020. The permit application notification was published in the November 6, 2020 issue of the Frontiersman. The application material was posted on the Borough website for public review on November 6, 2020. The public notice and a request for comments were also emailed to the Meadow Lakes Community Council on November 6, 2020. Staff received no comments from the Community Council or from the public on the request.

On December 21, 2020 the Public Hearing was postponed due to technical difficulties and rescheduled for January 18, 2021.

On December 28, 2020 updated notices were mailed to all property owners within a 600-foot radius of the use and to the Meadow Lakes Community Council. A total of 19 notices were mailed. A courtesy notice was also mailed to the City of Wasilla. The permit application was published in

the December 30, 2020 edition of the Frontiersman. The application material was updated on the Borough website for public review on December 23, 2020.

Section 17.60.100 General Standards

(A) A conditional use may be approved only if it meets with the requirements of this section in addition to any other standards required by this chapter:

(B) In granting a conditional use permit, the planning commission must make the following findings:

(1) the conditional use will preserve or not detract from the value, character, and integrity of the surrounding area;

Findings of Fact:

1. The use is contained within the existing commercial structure.
2. The current size of the use is approximately 750 square feet in size.
3. The proposed use will be approximately 990 square feet in size.
4. There is no industrial equipment or processes that generate noise associated with the proposed use.
5. The subject lot was developed for and has been used as commercial since 1999.
6. The subject lot accesses directly onto the frontage road known as West Machen Road.
7. West Machen Road is classified as a collector, which is capable of accommodating traffic generated by several commercial retail businesses.
8. West Machen Road is dominated by commercial and industrial uses on its frontage.
9. The current operating hours are 10:00 a.m. to 10:00 p.m., Monday-Saturday.
10. The proposed hours of operation are 8:00 a.m. to 5:00 a.m., daily.
11. The use is located approximately 160 feet from the West Machen Road right-of-way and approximately 30 feet to the east and west side lot lines.
12. The closest residential structure is located to the north and is approximately 680 feet from the use.
13. Consumption of marijuana is prohibited at the site.
14. Persons under the age of 21 are prohibited from entering the facility.
15. According to the application material, loitering will not be allowed.

Discussion: Staff recommends a condition that hours of operation shall not exceed 8:00 a.m. to 5:00 a.m., daily. Staff feels these hours of operation are appropriate for the use and location. The use does not border any parcels with residential homes nor can it be seen from any residential homes. This area of West Machen Road is dominated by commercial and industrial uses. The use has been in operation for over three years and has incurred no violations. If the requested hours of operation are approved, it is unlikely the applicant will choose to operate from 8:00 a.m. – 5:00 a.m. daily, however, they would like the ability to do so as they see fit.

Conclusion of Law: Based on the above findings, the modification to the use will not detract from the value, character and integrity of the surrounding area (MSB 17.60.100(B)(1)).

(2) that granting the conditional use permit will not be harmful to the public health, safety, convenience, and welfare;

Findings of Fact:

1. The closest school (Bright Minds Learning Center) is approximately 3,060 feet away from the proposed use.
2. Consumption of marijuana is prohibited at the site.
3. Persons under the age of 21 are prohibited from entering the facility.
4. The subject lot accesses directly onto the frontage road known as West Machen Road.
5. West Machen Road is classified as a collector, which is capable of accommodating traffic generated by several commercial retail businesses.
6. West Machen Road is dominated by commercial and industrial uses on its frontage.
7. The application material indicates three signs with the business name and logo will be used. One sign will be hung above the entrance of the facility and the other two will be placed on the sign post located to the south of the facility.
8. The Central Mat-Su Fire Department has issued a Non-Structural Fire and Life Safety Certificate of Occupancy.
9. The commercial structure is in full compliance with the applicable State of Alaska fire code.
10. The use has been in operation for over three years and has incurred no violations.
11. The current operating hours are 10:00 a.m. to 10:00 p.m., Monday-Saturday.
12. The proposed hours of operation are 8:00 a.m. to 5:00 a.m., daily.

Conclusion of Law: Based on the above findings, the modification to the use will not be harmful to the public health, safety, convenience and welfare (MSB 17.60.100(B)(2)).

(3) that sufficient setback, lot area, buffers, or other safeguards are being provided to meet the conditions listed in subsections (B)(1) through (3) of this section; and

Findings of Fact:

1. The proposed use is located approximately 160 feet from the West Machen Road right-of-way and approximately 30 feet to the east and west side lot lines.
2. The commercial structure meets all applicable setback requirements of MSB 17.55 – Setbacks and Screening Easements.
3. The closest school (Bright Minds Learning Center) is approximately 3,060 feet away from the proposed use.
4. The closest residential structure is located to the north and is approximately 680 feet from the use.
5. The subject lot accesses directly onto the frontage road known as West Machen Road.

6. West Machen Road is classified as a collector, which is capable of accommodating traffic generated by several commercial retail businesses.
7. West Machen Road is dominated by commercial and industrial uses on its frontage.
8. The Central Mat-Su Fire Department has issued a Non-Structural Fire and Life Safety Certificate of Occupancy.
9. The commercial structure is in full compliance with the applicable State of Alaska fire code.

Conclusion of Law: Based on the above findings, sufficient setbacks, lot area, buffers and other safeguards are being provided (MSB 17.60.100(B)(3)).

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(4) the conditional use fulfills all other requirements of this chapter pertaining to the conditional use in this section.

Finding of Fact:

1. All of the required site plans and operational information have been provided by the applicant.

Conclusion of Law: The application material has met all of the requirements of this chapter (MSB 17.60.100(B)(4)).

Section 17.60.150 General Standards for Marijuana Related Facilities

(A) In addition to the standards set forth by MSB 17.60.100, the planning commission shall weigh factors which contribute or detract from the development of a safe, convenient, and attractive community, including, but not limited to:

(1) any potential negative effect upon other properties in the area due to such factors as noise and odor.

Findings of Fact:

1. The use is contained within the existing commercial structure.
2. The current size of the use is approximately 750 square feet in size.
3. The proposed use will be approximately 990 square feet in size.
4. There is no industrial equipment or processes that generate noise associated with the proposed use.
5. Consumption of marijuana is prohibited at the site.
6. Marijuana products will be kept in sealed containers.
7. The use has been in operation for over three years and has incurred no violations.
8. According to the application material, loitering will not be allowed.

Conclusion of Law: Based on the above findings, the proposed use will not negatively affect other properties due to factors such as noise and odor (MSB 17.60.150(A)(1)).

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(2) the effectiveness of measures to reduce negative effects upon adjacent properties by:
(a) increased property line and right-of-way buffers;
(b) planted berms and landscaping;

(c) site and building design features which contribute to the character of the surrounding area.

Findings of Fact:

1. The use is contained within the existing commercial structure.
2. The current size of the use is approximately 750 square feet in size.
3. The proposed use will be approximately 990 square feet in size.
4. The Central Mat-Su Fire Department has issued a Non-Structural Fire and Life Safety Certificate of Occupancy.
5. The commercial structure is in full compliance with the applicable State of Alaska fire code.
6. The structure meets all applicable setback requirements of MSB 17.55 – Setbacks and Screening Easements.

Conclusion of Law: Based on the above findings, measures are in place to reduce negative affects upon adjacent properties (MSB 17.60.150(A)(2)(a-c)).

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(3) whether the use is compatible with the character of the surrounding area.

Findings of Fact:

1. The proposed retail facility will be contained within the existing commercial structure.
2. The current size of the use is approximately 750 square feet in size.
3. The proposed use will be approximately 990 square feet in size.
4. There is no industrial equipment or processes that generate noise associated with the proposed use.
5. The subject lot was developed for and has been used as commercial since 1999.
6. The Central Mat-Su Fire Department has issued a Non-Structural Fire and Life Safety Certificate of Occupancy.
7. The commercial structure is in full compliance with the applicable State of Alaska fire code.
8. The subject lot accesses directly onto the frontage road known as West Machen Road.
9. West Machen Road is classified as a collector, which is capable of accommodating traffic generated by several commercial retail businesses.
10. West Machen Road is dominated by commercial and industrial uses on its frontage.
11. The closest residential structure is located to the north and is approximately 680 feet from the use.
12. The proposed use is located approximately 160 feet from the West Machen Road right-of-way and approximately 30 feet to the east and west side lot lines.
13. The structure meets all applicable setback requirements of MSB 17.55 – Setbacks and Screening Easements.

14. The current operating hours are 10:00 a.m. to 10:00 p.m., Monday-Saturday.
15. The proposed hours of operation are 8:00 a.m. to 5:00 a.m., daily.
16. Consumption of marijuana is prohibited at the site.
17. According to the application material, loitering will not be allowed.

Conclusion of Law: Based on the above findings, the modification to the use is compatible with the character of the surrounding area (MSB 17.60.150(A)(3)).

(B) At the time of their establishment, marijuana related conditional uses shall meet the following requirements and not be located within:

(1) One thousand feet of school grounds;

(C) Separation distances referenced in subsection (B) of this section are measured in a direct line between the closest point of the facility within which the marijuana facility is located, and the closest point on the lot or parcel of land upon which any of the above itemized uses are located.

Finding of Fact:

1. The closest school (Bright Minds Learning Center) is approximately 3,060 feet away from the proposed use.

Conclusion of Law: Based on the above finding, the use is more than 1,000 feet away from any school grounds (MSB 17.60.150(B)(1)).

(D) Prior to final approval of the permit the applicant shall provide written documentation demonstrating that:

(1) all applicable licenses have been obtained as required by 3 AAC 306.005.

Findings of Fact:

1. Green Degree has obtained a State of Alaska Retail Marijuana Store License #12023.
2. Documentation of the applicant's marijuana retail facility license has been provided to the MSB Development Services Division.

Discussion: The State of Alaska requires a Form MJ-14 Licensed Premises Diagram Change to be reviewed and approved by the Local Government for a premises diagram change or expansion. The applicant has submitted this form and Staff will return the form to the applicant with the appropriate information pending the outcome of the Conditional Use Permit modification request.

Conclusion of Law: Based on the above findings, the applicant has provided a copy of the documents demonstrating all applicable licenses pertaining to 3 AAC 306.005 have been obtained (MSB 17.60.150(D)(1)).

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(2) from the fire marshal having jurisdiction, that the proposed conditional use is in full compliance with applicable fire code, including but not limited to AS 18.70.010 through 18.70.160, Fire Protection, and 13 AAC 50.025 through 50.080, Fire Code.

Findings of Fact:

1. The Central Mat-Su Fire Department has issued a Non-Structural Fire and Life Safety Certificate of Occupancy.
2. The commercial structure is in full compliance with the applicable State of Alaska fire code.
3. The applicant has provided a copy of the approved Certificate of Occupancy.

Conclusion of Law: Based on the above findings, the use is in full compliance with all applicable fire code (MSB 17.60.150(D)(2)).

Section 17.60.170 Standards for Marijuana Retail Facilities

(A) Marijuana retail facilities shall only be approved upon finding by the commission that the proposed facility is located on a parcel that is appropriate for commercial use. At a minimum, the commission shall consider:

(1) proximity of the proposed use to existing businesses;
(2) proximity to parcels developed for residential use; and
(3) whether roads associated with the proposed use have been, or will be, appropriate for commercial use.

Findings of Fact:

1. The subject lot accesses directly onto the frontage road known as West Machen Road.
2. West Machen Road is classified as a collector, which is capable of accommodating traffic generated by several commercial retail businesses.
3. West Machen Road is dominated by commercial and industrial uses on its frontage.
4. The subject lot was developed for and has been used as commercial since 1999.
5. The use has been in operation for over three years and has incurred no violations.
6. To the south and west of the subject parcel there are several commercial uses and one church. To the north and east there is a mix of residential uses and vacant land. The city limits of Wasilla abut the subject property to the east.
7. The closest residential structure is located to the north and is approximately 680 feet from the use.
8. The proposed use is located approximately 160 feet from the West Machen Road right-of-way and approximately 30 feet to the east and west side lot lines.

Conclusion of Law: Based on the above findings, the use is located on a parcel that is appropriate for commercial use (MSB 17.60.170(A)(1-3)).

(B) The minimum number of parking spaces for retail facilities shall be one space per 350 square feet of net floor area. Each parking space shall be at least: 20 feet in length, ten feet wide, and have a vertical clearance of at least seven feet.

Findings of Fact:

1. The proposed use will be approximately 990 square feet in size.

2. A marijuana retail facility 990 square feet in size is required to provide three parking spaces with one ADA compliant space.
3. Thirteen customer parking spaces are being provided.
4. Each space is at least 20 feet in length and ten feet wide.
5. There are no vertical clearance limitations on site.

Conclusion of Law: Based on the above findings, the modification to the use meets the minimum number of parking space for retail facilities (MSB 17.60.170(B)).

(C) Parking spaces shall be provided to comply with current Americans with Disabilities Act guidelines.

Findings of Fact:

1. A marijuana retail facility 990 square feet in size is required to provide three parking spaces with one ADA compliant space.
2. ADA guidelines require one van accessible parking space, 11 feet wide with a five-foot wide parking aisle, for every 1 to 25 spaces.
3. Thirteen customer parking spaces will be provided.
4. According to the site plan, one van accessible parking space, at least 11 feet wide with a five-foot wide parking aisle is being provided.

Conclusion of Law: Based on the above findings, the modification to the use complies with current ADA parking space guidelines (MSB 17.60.170(C)).

STAFF RECOMMENDATIONS

Staff recommends approval of the request to modify conditional use permit 176020170011 to operate a Marijuana Retail Facility, 990 square feet in size, at 3361 West Machen Road (Tax ID# 2420B02L001). The proposed use still meets all of the standards in MSB 17.60.100, 17.60.150, and 17.60.170. Staff recommends condition four of Planning Commission Resolution 17-26 be changed to reflect the following:

4. The hours of operation shall not exceed 8:00 a.m. – 5:00 a.m., daily.

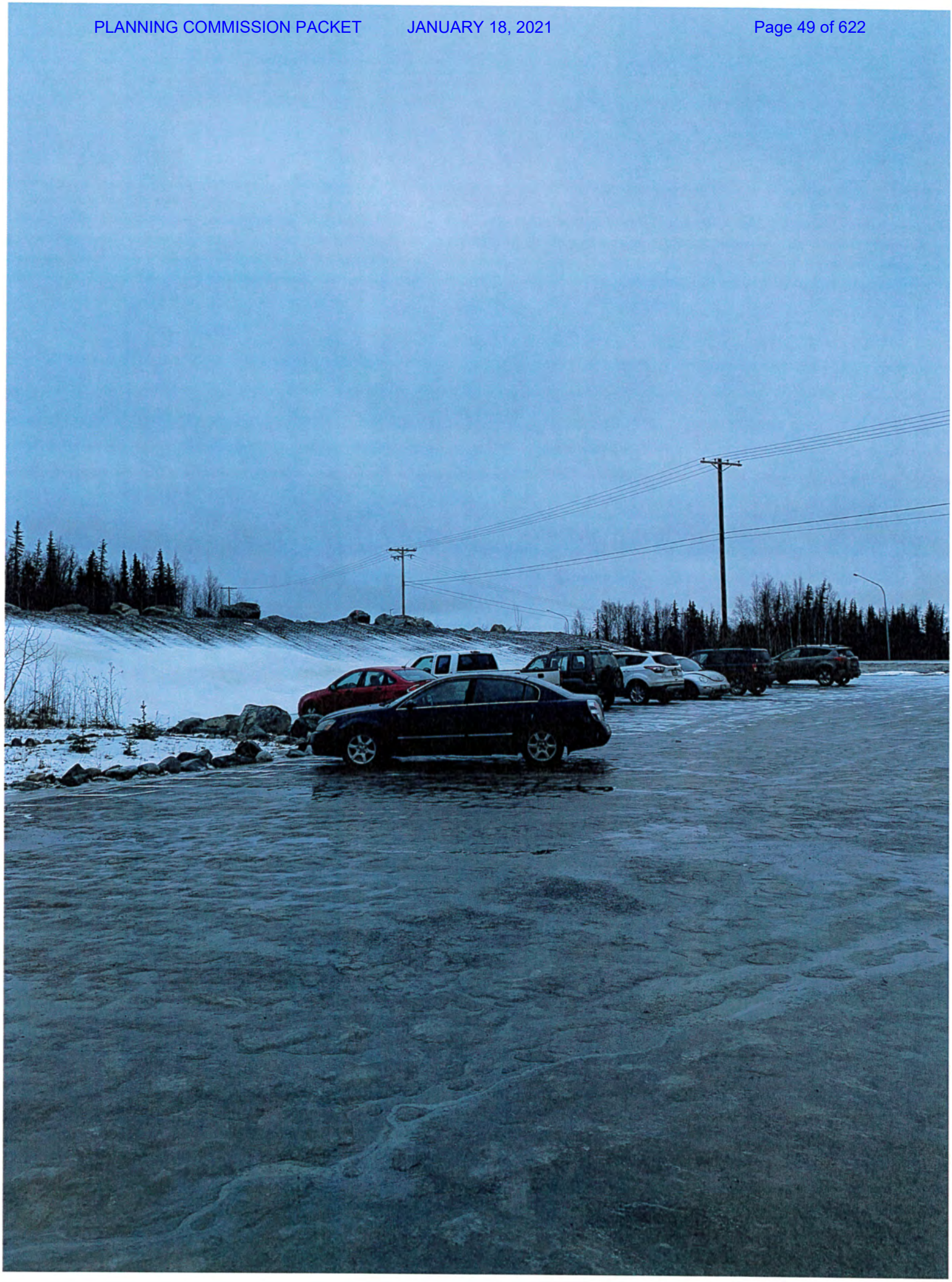
If the Planning Commission chooses to deny this modification, findings for denial must be prepared by the Commission.

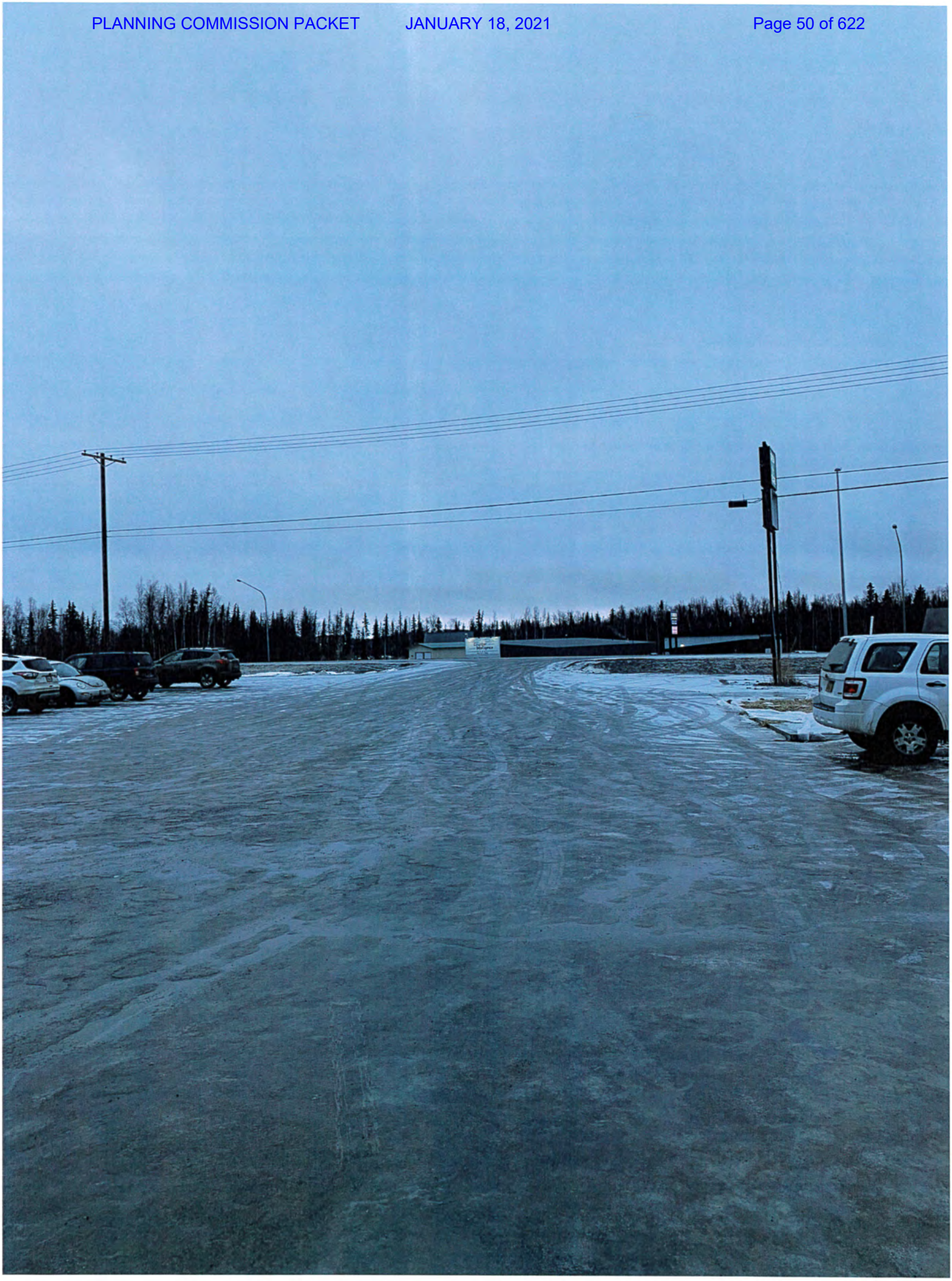
Photos Taken by Joe Metzger, MSB Planner, During a December 2, 2020 Site Visit

PLUSS
CD
RENTAL
SERVICES

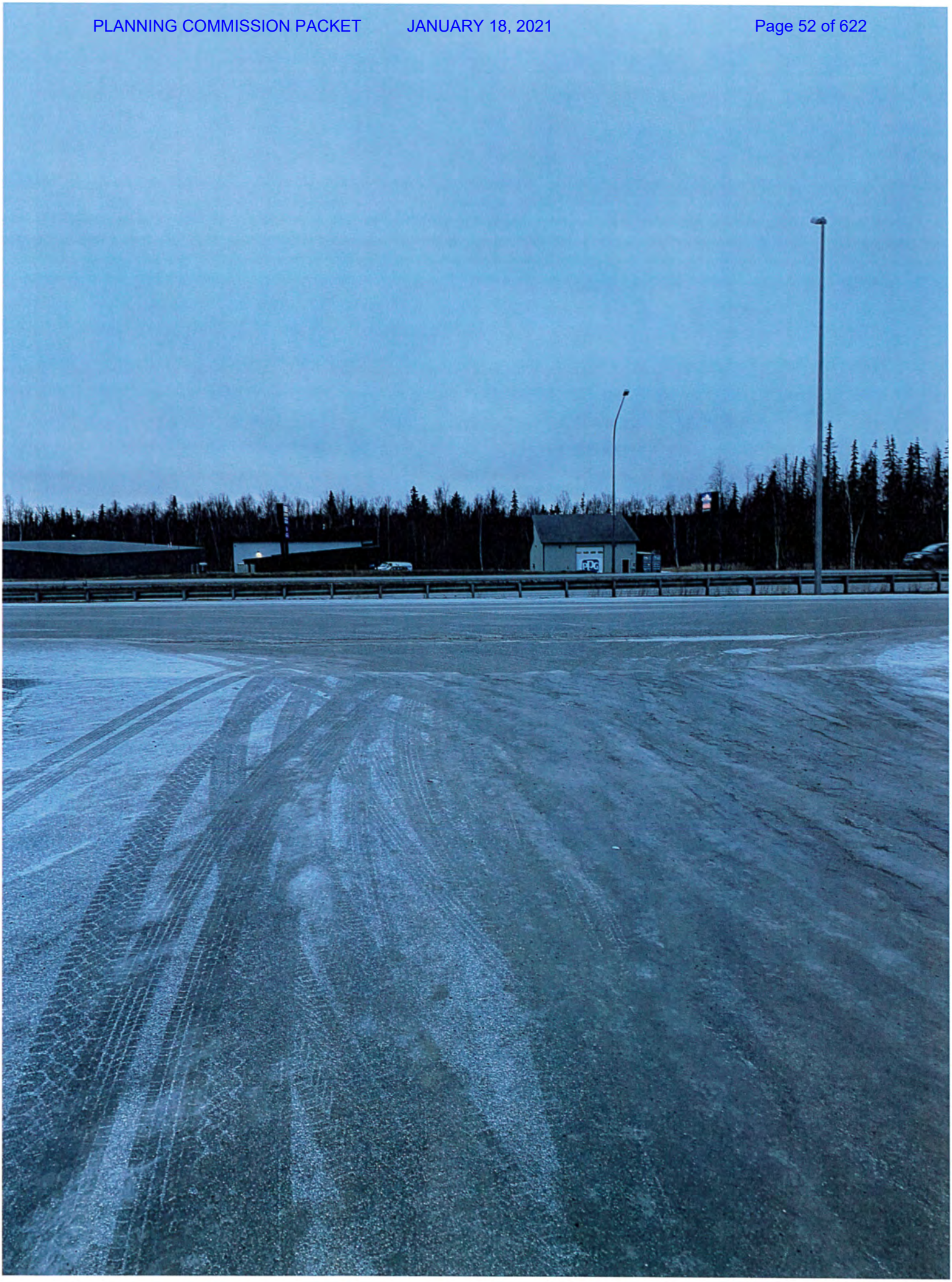
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PARKING

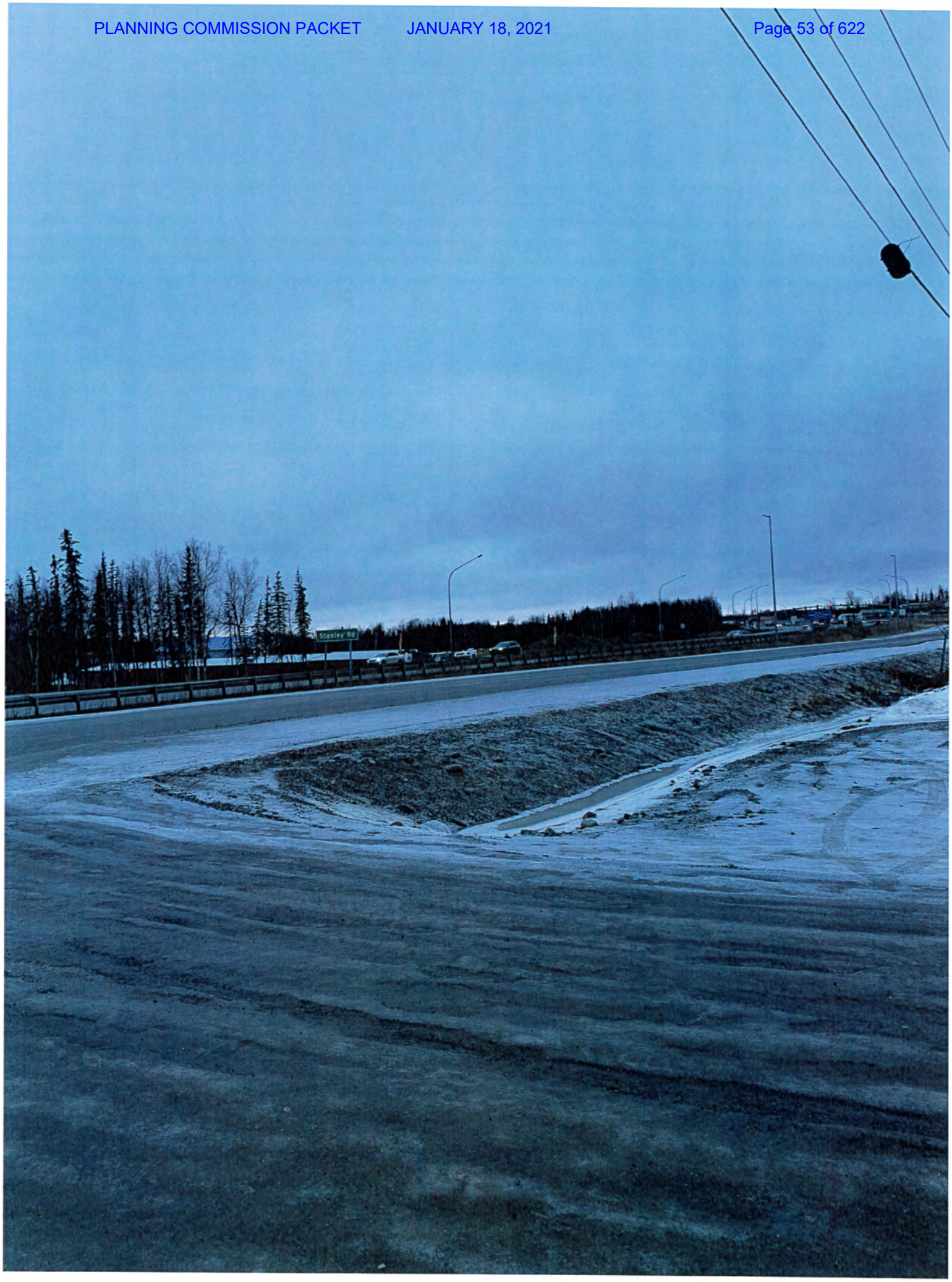


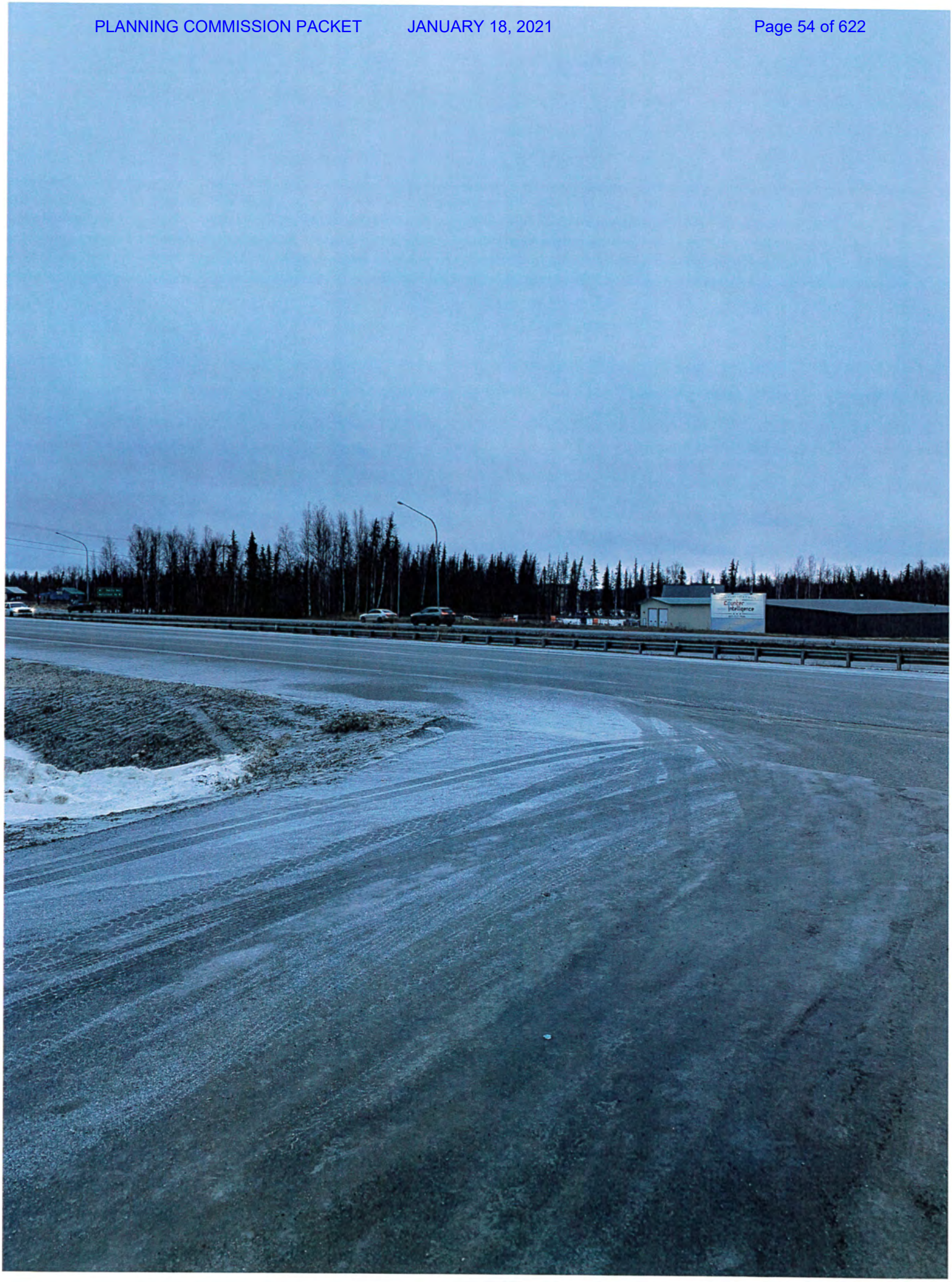




GREEN
DEGREE




Stanley Rd


Counter
Intelligence

UNITED STATES POSTAL SERVICE®

Certificate of Bulk Mailing — Domestic

Fee for Certificate

Up to 1,000 pieces (1 certificate for total number)	Use Current Price List (Notice 123)
For each additional 1,000 pieces, or fraction thereof	
Duplicate Copy ☐	

Number of Identical Weight Pieces	Class of Mail	Postage for Each Mailpiece Paid	Number of Pieces to the Pound
19	1st	☐ Verified	96

Total Number of Pounds	Total Postage Paid for Mailpieces	Fee Paid
6 1/02	9.50	8.55

Mailed For	Mailed By
Dev. Services	Nikki

Postmaster's Certification

It is hereby certified that the number of mailpieces presented and the associated postage and fee were verified. This certificate does not provide evidence that a piece was mailed to a particular address.

(Postmaster or Designee)

Postage: Mailers must affix meter, PC Postage®, or (uncanceled) postage stamps here in payment of total fee due.

U.S. POSTAGE » PITNEY BOWES
ZIP 99645 $ 008.55⁰
02 4W
0000368428 NOV 05 2020

Acceptance employee affixed (by round-date

If payment of total fee paid by Permit Imprint
PostalOne!® Transaction Number here: _____

PALMER AK 99645
USPS

PS Form **3606-D,** January 2016 PSN 7530-17-000-5548

See Reverse for Instructions

59997000U0279 1
ALASKA WIRELESS NETWORK LLC
JACOBSON LAKE SITE
STE 1000
2550 DENALI ST
ANCHORAGE AK 99503

56774B01L008 2
BRESHEARS DAVID & JANE
3383 W COGHLAN CIR
WASILLA AK 99623-4219

52533B01L001 3
CHURCH ON THE ROCK
PO BOX 874693
WASILLA, AK 99687-4693

56774B01L003 4
FRITZLER CARL MARK
2301 S ALTHEA ST
WASILLA, AK 99654

52420B02L001 5
GREEN LAND GROUP LLC
TOWER SEAN
5800 W LOCKSLEY LOOP
WASILLA AK 99623

217N01W07B011 6
LUNDGREN GARY
%CASTLE PROPERTIES INC
PO BOX 3517
REDMOND WA 98073-3517

57267B01L001A 7
MCCALLISTER INVEST GROUP LLC
1500 BOGARD RD
WASILLA AK 99654

51633B01L001 8
MIELKE ANNA M
% ANNA ROWE
PO BOX 520856
BIG LAKE AK 99652

56774B01L009 9
MORRIS CHARLES W & LAUREL M
751 REEVE CIR
WASILLA AK 99654

52420B01L005 10
MUZECHUK ANATOLY
3401 W MACHEN RD
WASILLA AK 99623-4139

51633B01L006 11
NORTHLAND HOMES LLC
2155 N BILTMORE CT
WASILLA AK 99654

51633B01L007 12
PACIFIC RIDGE HOMES LLC
PO BOX 875787
WASILLA AK 99687-5787

51633B01L008 13
PIELORZ MICHAEL F
PO BOX 873148
WASILLA AK 99687-3148

52420B02L002 14
PIELORZ MICHAEL FRANK
PO BOX 873148
WASILLA AK 99687-3148

56774B01L006 15
SLEEK LLC
PO BOX 877777
WASILLA AK 99687

59997000U0497 16
VERTICAL BRIDGE S3 ASSETS LLC
% RYAN PTS DEPT 850
PO BOX 460169
HOUSTON TX 77056

56774B01L002 17
YUNDT PROPERTIES LLC
#200
357 E PARKS HWY
WASILLA AK 99654

18
CITY OF WASILLA
290 E HERNING AVE
WASILLA, AK 99654-7091

19
MEADOW LAKES COMMUNITY COUNCIL
1210 N KIM DR, SUITE B
WASILLA, AK 99623-1921

tara0609
19
11/5/2020 8:57:21 AM

Matanuska-Susitna Borough
Development Services Division
350 E. Dahlia Avenue
Palmer, Alaska 99645

tara0609
19
11/5/2020 8:57:21 AM

The Planning Commission of the Matanuska-Susitna Borough will consider the following:

Application:	Modification to an existing Conditional Use Permit for a marijuana retail facility
MSB Code Section:	MSB 17.60 – Conditional Uses
Applicant:	Kerby Coman, on behalf of Green Degree
Location:	3361 W. Machen Road (Tax ID# 2420B02L001); within Township 17 North, Range 1 West, Section 7, Seward Meridian
Request:	An application for a modification to an existing conditional use permit under MSB 17.60 – Conditional Uses, has been submitted for the operation of a marijuana retail facility. The request is asking to move the location of the use to a different section of the current structure and to expand the size of the marijuana retail facility.

The Planning Commission will conduct a public hearing concerning the following application for a conditional use permit on Monday, ***December 21, 2020*** **at 6:00 p.m.** in the Borough Assembly Chambers, 350 E. Dahlia Avenue, in Palmer. This may be the only presentation of this item before the Planning Commission and you are invited to attend. ****Please Note: Due to the ongoing Coronavirus/COVID-19 Pandemic, the method in which this meeting is being conducted may change. If a change to the meeting is necessary, it will be posted on the Borough Website. The public is encouraged to check the Borough Website prior to attending the public hearing for any changes to the meeting schedule or method.*** The Planning Commission members may submit questions to the Planning Commission Clerk concerning the matter or request for more information from the applicant at the time of introduction. All questions and requests submitted by the Commission shall be in writing and copies will be provided to the applicant and made available to all interested parties and the public upon request. Answers to questions and additional material requests will be addressed in the staff report for the public hearing. Commission members may not receive or engage in ex-parte contact with the applicant, other interested parties in the application, or members of the public concerning the application or issues presented in the application.

Application material may be viewed online at www.matsugov.us by clicking on "All Public Notices & Announcements." Application material may also be viewed at the Borough Permit Center. For additional information, you may contact Joe Metzger, Planner II, at 861-7862. ***The public may provide verbal testimony in person at the meeting or telephonically by calling 1-855-290-3803.*** You will hear "Joining conference" when you are admitted to the meeting. You will be automatically muted and able to listen to the meeting. When the Chair announces audience participation or a public hearing you would like to speak to, press *3; you will hear, "Your hand has been raised." When it is your turn to testify, you will hear, "Your line has been unmuted." State your name for the record, spell your last name, and provide your testimony. You have 3 minutes to state your concerns & comments. Written comments can be mailed to: MSB Development Services Division, 350 E. Dahlia Avenue, Palmer, AK 99645. You may e-mail comments to joseph.metzger@matsugov.us. In order to be eligible to file an appeal from a decision of the Planning Commission, a person must be designated an "interested party." See MSB 15.39.010 for the definition of "interested party." The procedures governing appeals to the Board of Adjustment and Appeals are contained in MSB 15.39.010-250, which is available on the Borough home page: www.matsugov.us, in the Borough Clerk's office, and at various libraries within the borough.

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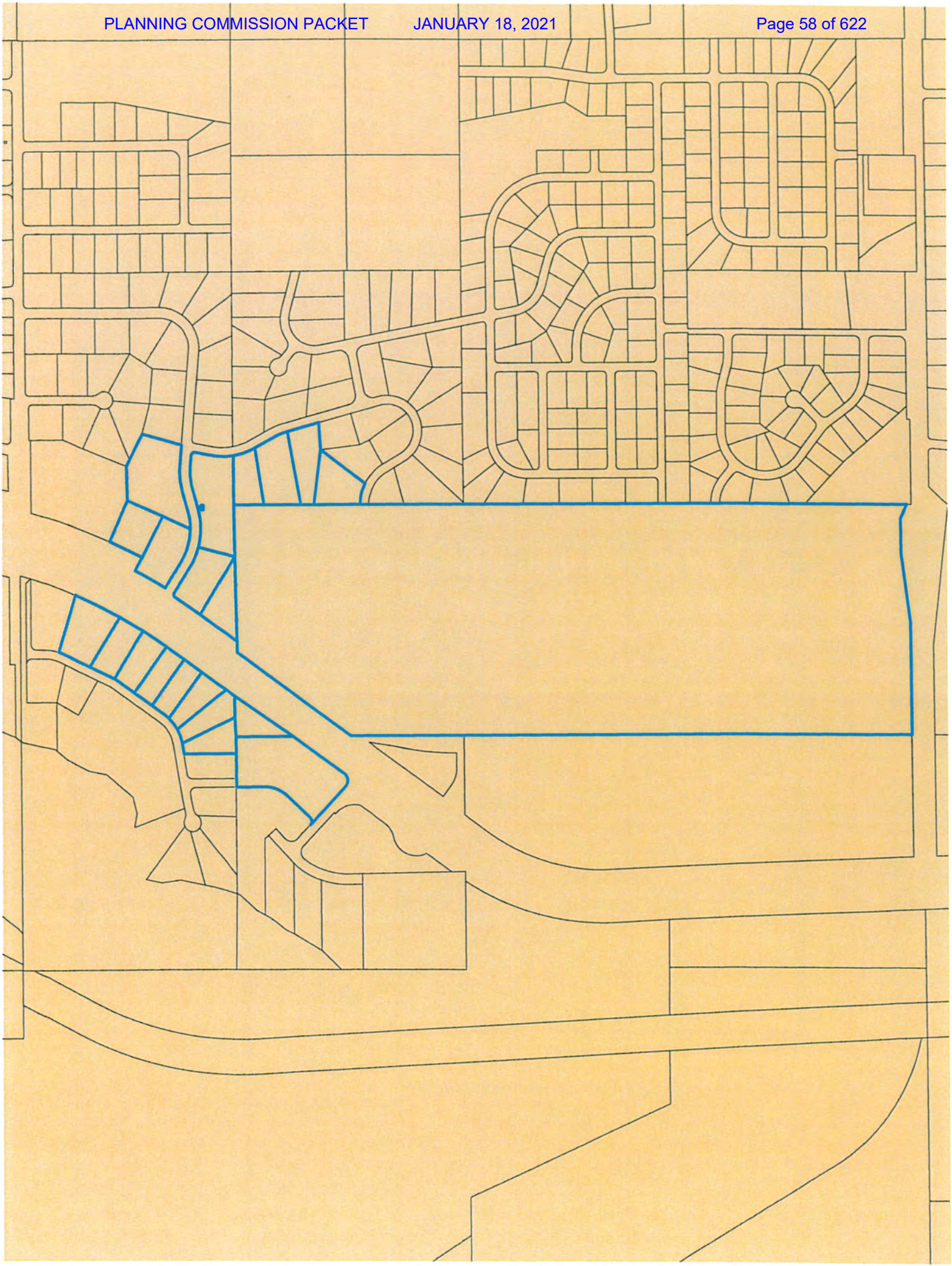
Name:_____ ***Mailing Address:***_____

Location/Legal Description of your property:_____

Comments:_____

_____

Note: Vicinity Map Located on Reverse Side



59997000U0279 1
ALASKA WIRELESS NETWORK LLC
JACOBSON LAKE SITE
STE 1000
2550 DENALI ST
ANCHORAGE AK 99503

56774B01L008 2
BRESHEARS DAVID & JANE
3383 W COGHLAN CIR
WASILLA AK 99623-4219

52533B01L001 3
CHURCH ON THE ROCK
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WASILLA, AK 99687-4693

56774B01L003 4
FRITZLER CARL MARK
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52420B02L001 5
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5800 W LOCKSLEY LOOP
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217N01W07B011 6
LUNDGREN GARY
%CASTLE PROPERTIES INC
PO BOX 3517
REDMOND WA 98073-3517

57267B01L001A 7
MCCALLISTER INVEST GROUP LLC
1500 BOGARD RD
WASILLA AK 99654

51633B01L001 8
MIELKE ANNA M
% ANNA ROWE
PO BOX 520856
BIG LAKE AK 99652

56774B01L009 9
MORRIS CHARLES W & LAUREL M
751 REEVE CIR
WASILLA AK 99654

52420B01L005 10
MUZECHUK ANATOLY
3401 W MACHEN RD
WASILLA AK 99623-4139

51633B01L006 11
NORTHLAND HOMES LLC
2155 N BILTMORE CT
WASILLA AK 99654

51633B01L007 12
PACIFIC RIDGE HOMES LLC
PO BOX 875787
WASILLA AK 99687-5787

51633B01L008 13
PIELORZ MICHAEL F
PO BOX 873148
WASILLA AK 99687-3148

52420B02L002 14
PIELORZ MICHAEL FRANK
PO BOX 873148
WASILLA AK 99687-3148

56774B01L006 15
SLEEK LLC
PO BOX 877777
WASILLA AK 99687

59997000U0497 16
VERTICAL BRIDGE S3 ASSETS LLC
% RYAN PTS DEPT 850
PO BOX 460169
HOUSTON TX 77056

56774B01L002 17
YUNDT PROPERTIES LLC
#200
357 E PARKS HWY
WASILLA AK 99654

18
CITY OF WASILLA
290 E HERNING AVE
WASILLA, AK 99654-7091

19
MEADOW LAKES COMMUNITY COUNCIL
1210 N KIM DR, SUITE B
WASILLA, AK 99623-1921

tara0609
19
11/5/2020 8:57:21 AM

Frontiersman
Growing with the Valley since 1947.

5751 E. MAYFLOWER CT.
Wasilla, AK 99654

(907) 352-2250 ph
(907) 352-2277 fax

AFFIDAVIT OF PUBLICATION

UNITED STATES OF AMERICA, STATE OF ALASKA, THIRD DIVISION

BEFORE ME, THE UNDERSIGNED, A NOTARY PUBLIC, THIS DAY

PERSONALLY APPEARED BEFORE **BENJAMIN BORG** WHO, BEING

FIRST DULY SWORN, ACCORDING TO LAW, SAYS THAT HE IS THE

LEGAL AD CLERK OF THE **FRONTIERSMAN**

PUBLISHED AT WASILLA AND CIRCULATED THROUGH OUT MATANUSKA

SUSITNA BOROUGH, IN SAID DIVISION THREE AND STATE OF ALASKA

AND THAT THE ADVERTISEMENT, OF WHICH THE ANNEXED IS A TRUE

COPY, WAS PUBLISHED ON THE FOLLOWING DAYS:

11/06/2020

AND THAT THE RATE CHARGED THEREIN IS NOT IN EXCESS OF

THE RATE CHARGED PRIVATE INDIVIDUALS.

SUBSCRIBED AND SWORN TO BEFORE ME
THIS 6th DAY OF November, 2020.

NOTARY PUBLIC
NANCY E DOWNS
STATE OF ALASKA
MY COMMISSION EXPIRES AUG. 25, 2023

NOTARY PUBLIC FOR STATE OF ALASKA

MAT-SU BOROUGH/PAGE
11.6
ACCOUNT NUMBER 405249

PUBLIC HEARING



he Matanuska-Susitna Borough Planning Commission will conduct a public hearing concerning the following application for a modification to an existing conditional use permit on Monday, ***December 21, 2020***, at 6:00 p.m. in the Borough Assembly Chambers located at 350 E. Dahlia Avenue in Palmer. This may be the only presentation of this item before the Planning Commission and you are invited to attend.

****Please Note: Due to the ongoing Coronavirus/COVID-19 Pandemic, the method in which this meeting is being conducted may change. If a change to the meeting is necessary, it will be posted on the Borough Website. The public is encouraged to check the Borough Website prior to attending the public hearing for any changes to the meeting schedule or method.***

An application for a modification to an existing conditional use permit under MSB 17.60 – Conditional Uses, has been submitted by Kerby Coman, on behalf of Green Degree for the operation of a marijuana retail facility at 3361 W. Machen Road, (Tax ID# 2420B02L001); within Township 17 North, Range 1 West, Section 7, Seward Meridian. The request is asking to move the location of the use to a different section of the current structure and to expand the size of the marijuana retail facility.

Application material may be viewed online at www.matsugov.us by clicking on "All Public Notices & Announcements." Application material may also be viewed at the Borough Permit Center. For additional information, you may contact Joe Metzger, Planner II, at 861-7862.

The public may provide verbal testimony in person at the meeting or telephonically by calling 1-855-290-3803. You will hear "Joining conference" when you are admitted to the meeting. You will be automatically muted and able to listen to the meeting. When the Chair announces audience participation or a public hearing you would like to speak to, press *3; you will hear, "Your hand has been raised." When it is your turn to testify, you will hear, "Your line has been unmuted." State your name for the record, spell your last name, and provide your testimony. You have 3 minutes to state your concerns & comments. Written comments can be mailed to: MSB Development Services Division, 350 E. Dahlia Avenue, Palmer, AK 99645. You may e-mail comments to joseph.metzger@matsugov.us. In order to be eligible to file an appeal from a decision of the Planning Commission, a person must be designated an "interested party." See MSB 15.39.010 for the definition of "interested party." The procedures governing appeals to the Board of Adjustment and Appeals are contained in MSB 15.39.010-250, which is available on the Borough home page: www.matsugov.us, in the Borough Clerk's office, and at various libraries within the borough.

Written comments are due on or before ***December 2, 2020*** and will be included in the Planning Commission packet for the Commissioner's review and information. Please be advised that comments received from the public after that date will not be included in the staff report, but will be provided to the Commission at the meeting.

The Planning Commission members may submit questions to the Planning Commission Clerk concerning the matter or request for more information from the applicant at the time of introduction. All questions and requests submitted by the Commission shall be in writing and copies will be provided to the applicant and made available to all interested parties and the public upon request. Answers to questions and additional material requests will be addressed in the staff report for the public hearing. Planning Commission members may not receive or engage in ex-parte contact with the applicant, other interested parties in the application, or members of the public concerning the application or issues presented in the application.

Publish Date: November 6, 2020 11-05-20

Green Degree (Machen) Marijuana Retail Facility – Conditional Use Permit (Modification)

An application for a modification to an existing conditional use permit under MSB 17.60 – Conditional Uses, has been submitted for the operation of a marijuana retail facility. The request is asking to move the location of the use to a different section of the current structure, expand the size of the marijuana retail facility and the hours of operation.

Location: The proposed use is located at 3361 W. Machen Road (Tax ID# 2420B02L001); within Township 17 North, Range 1 West, Section 7, Seward Meridian.

Applicant: Kerby Coman, on behalf of Green Degree

Public Hearing: The Planning Commission will conduct a public hearing concerning the application for a conditional use permit on Monday, ***December 21, 2020****, at 6:00 p.m. in the Borough Assembly Chambers located at 350 E. Dahlia Avenue in Palmer. This may be the only presentation of this item before the Planning Commission and you are invited to attend.

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The application material may also be viewed at the Borough Permit Center. If you have questions or want to submit comments, please contact Joe Metzger at 861-7862 or mail to MSB Development Services Division, 350 E. Dahlia Avenue, Palmer, AK 99645, or email: joseph.metzger@matsugov.us

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Joseph Metzger

From: Joseph Metzger
Sent: Friday, November 6, 2020 1:26 PM
To: 'allen.kemplen@alaska.gov'; 'tucker.hurn@alaska.gov'; 'melanie.nichols@alaska.gov'; 'kyler.hylton@alaska.gov'; 'sarah.wilber@alaska.gov'; 'mearow@matanuska.com'; 'rglenn@mta-telco.com'; 'jthompson@mta-telco.com'; 'row@enstarnaturalgas.com'; 'ospdesign@gci.com'; Eric Phillips; Cindy Corey; Terry Dolan; Jim Jenson; Jamie Taylor; Nicole Wilkins; Karol Riese; Taunnie Boothby; Theresa Taranto; John Aschenbrenner; John Aschenbrenner; Jill Irsik; Michelle Wagner; Cheryl Scott; Brad Sworts; 'info@mlccak.org'; 'tedleonarddistrict4@gmail.com'
Subject: RFC Green Degree (Machen) - Due December 2

MEMORANDUM

Date:	November 6, 2020
To:	Various Governmental Agencies
From:	Joe Metzger, MSB Planner
Subject:	Request for Review and Comments Governmental Agencies
Project:	Modification of an existing Conditional Use Permit for a marijuana retail facility
Location:	3361 W. Machen Road (Tax ID# 2420B02L001); within Township 17 North, Range 1 West, Section 7, Seward Meridian
Applicant:	Kerby Coman, on behalf of Green Degree (Machen)

An application for a modification to an existing conditional use permit under MSB 17.60 – Conditional Uses, has been submitted for the operation of a marijuana retail facility. The request is asking to move the location of the use to a different section of the current structure and to expand the size of the marijuana retail facility. **The Planning Commission will conduct a public hearing for this request on December 21, 2020.**

Application material may be viewed online at www.matsugov.us by clicking on "All Public Notices & Announcements." Application material may also be reviewed at the Borough Permit Center. A direct link to the application material is here:

https://www.matsugov.us/publicnotice/green-degree-machen-marijuana-retail-facility-conditional-use-permit-modification

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Respectfully,

Joe Metzger
MSB Planner
907-861-7862

MATANUSKA-SUSITNA BOROUGH

Planning and Land Use Department
Development Services Division
350 East Dahlia Avenue • Palmer, AK 99645
Phone (907) 861-7822 • Fax (907) 861-8158
www.matsugov.us

MEMORANDUM

Date:	November 6, 2020
To:	Various Governmental Agencies
From:	Joe Metzger, MSB Planner
Subject:	Request for Review and Comments Governmental Agencies
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MATANUSKA-SUSITNA BOROUGH
DIRECTORY OF ORGANIZATIONS

Community Council - Meadow Lakes

Board Exp

Meadow Lakes Comm | Board Position | Correspondence - Meadow Lakes CC
Company Representing | Term to
1210 N. Kim Drive, Suite B | Type of Term
Wasilla AK 99623-1921 | Member
Home (907) 232-2845 Work Cell E-mail info@mlccak.org

Fisher Patricia | Board Position | Member 1 - MLCC - President
Company Representing | Term to
7362 W Parks Hwy, #514 | Type of Term
Wasilla AK 99623 | Member President
Home (907) 357-8616 Work Cell (520) 465-6856 E-mail psfisher@gci.net

Cannon Ariel | Board Position | Member 11 - MLCC - Gaming
Company Representing | Term to
3009 N Kalmbach Lake Dr | Type of Term
Wasilla AK 99623 | Member
Home Work Cell E-mail gaming@mlccak.org

Boyle Terry | Board Position | Member 15 - MLCC - By Laws
Company Representing | Term to
PO Box 870311 | Type of Term
Wasilla AK 99687 | Member
Home Work Cell E-mail bylaws@mlccak.org

Conover Linda | Board Position | Member 2 - MLCC - Vice President
Company Representing | Term to
3291 W Parks Hwy #782 | Type of Term
Wasilla AK 99632 | Member Vice President
Home Work Cell E-mail vp@mlccak.org

MATANUSKA-SUSITNA BOROUGH
DIRECTORY OF ORGANIZATIONS

Community Council - Meadow Lakes

Board Exp

Leader | Cally | | Board Position: Member 3 - MLCC - Education
Company Representing:
7362 W Parks Hwy #154
Wasilla | 9962 | Member
Term: to
Type of Term:
Home: | Work: | Cell: | E-mail: education@mlccak.org

Scott | Andrea | | Board Position: Member 4 - MLCC - Treasurer
Company Representing:
Member
Term: to
Type of Term:
Home: | Work: | Cell: | E-mail: treasurer@mlccak.org

Swezey | Tim | | Board Position: Member 5 - MLCC - Council Coordination
Company Representing:
7362 W Parks Hwy #367
Wasilla | AK | 99623 | Member
Term: to
Type of Term:
Home: (907) 232-2845 | Work: | Cell: | E-mail: councilcoordinator@mlccak.org

Yehle | Camden | | Board Position: Member 6 - MLCC - Secretary
Company Representing:
7362 W Parks Highway #843
Wasilla | AK | 99623 | Member
Term: to
Type of Term:
Home: | Work: | Cell: | E-mail: camdenyehle@gmail.com

Benner-Hanson | Lori | | Board Position: Member 8 - MLCC - Parks, Rec & Trails
Company Representing:
PO Box 870172
Wasilla | AK | 99687 | Member
Term: to
Type of Term:
Home: (907) 376-5549 | Work: | Cell: | E-mail: parks-rec-trails@mlccak.org

MATANUSKA-SUSITNA BOROUGH
DIRECTORY OF ORGANIZATIONS

Community Council - Meadow Lakes

Board Exp

Scott	Chad		Board Position	Member 9 - MLCC - Safety	
Company Representing			Term		to
			Type of Term		
			Member		
Home		Work		Cell	E-mail: safety@mlccak.org

Information Contact	www.mlccak.org
Total Board Members	12 Members
Meeting Schedule	2nd Wednesday of each month at 7 p.m. (Please check the Notice of Public Meetings schedule at: www.matsugov.us/publicmeetings for meeting information.)
Meeting Location	Birch Creek Villas (Meadow Lakes Senior Housing Complex)
Board Notes:	Established by RS 82-68

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Fee for Certificate

Up to 1,000 pieces (1 certificate for total number)

For each additional 1,000 pieces, or fraction thereof

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19	1st		96

Total Number of Pounds	Total Postage Paid for Mailpieces	Fee Paid
6.202	9.50	8.55

Mailed For	Mailed By
Dev. Services	Nikki

Postmaster's Certification

It is hereby certified that the number of mailpieces presented and the associated postage and fee were verified. This certificate does not provide evidence that a piece was mailed to a particular address.

(Postmaster or Designee)

Postage: Mailers must affix meter, PC Postage®, or (uncanceled) postage stamps here of total fee due.



Acceptance employee must cancel p affixed (by round-date) at the time of

If payment of total fee due is being paid by Permit Imprint, include the *PostalOne!*® Transaction Number here: _____

PS Form **3606-D,** January 2016 PSN 7530-17-000-5548

See Reverse for Instructions

217N01W20A010 1
ADLIB HOLDINGS LLC
2030 W ADSON RD
WASILLA AK 99654

217N01W20A008 4
DUNCAN HENRY & DARLENE
2500 FORRESTBROOK DR
KANNAPOLIS, NC 28083

54822000L009 7
HANSEN RODNEY A & ANDREA J
1590 W MINNETONKA DR
WASILLA, AK 99654

217N01W17D005 10
KENISON MARY ANN
5209 N HONDO DR
PRESCOTT VALLEY AZ 86314

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RENIDEO CHARLIE B
RENIDEO DELISA MARIE
5010 W LAKESIDE DR
WASILLA AK 99623-9274

57655000T00A 16
WASILLA CHRISTIAN CHURCH
2201 S KNIK GOOSE BAY RD
WASILLA AK 99654-0469

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CITY OF WASILLA
290 E HERNING AVE
WASILLA, AK 99654-7091

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BAKER LESLIE ANN ITF
BAKER THOS K & NICHOLAS H & KAITLYN
%LESTER BAKER
2180 S ENDEAVOR ST
WASILLA AK 99654-8718

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DUNN BONNIE
DUNN ALLISON & SAPUTSKI DANIEL
STE B PMB 208
2521 MOUNTAIN VILLAGE DR
WASILLA AK 99654

54822000L010 8
IMPERIAL ASSOCIATES LTD
3737 MANOA RD
HONOLULU, HI 96822

51005000L00W-1 11
KRETSCHEK ANDREA E
%SIGNATURE - CAROLYN
1174 N LEATHERLEAF LOOP STE B
WASILLA AK 99654

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ROTACH DOUGLAS
STE B
2521 E MOUNTAIN VILLAGE DR
WASILLA AK 99654-7377

51222000T00C 17
WINDWARD TOWN&CNTRY PLAZA
SECURITY DEVICES OF HI
3737 MANOA RD
HONOLULU, HI 96822

tara0609
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11/5/2020 11:11:13 AM

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COY DAVID SIDNEY & DORIS MAY
1600 W EDLUND RD
WASILLA AK 99654

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ELGEE KIM L
PO BOX 872242
WASILLA AK 99687

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JAKA INC
PO BOX 874486
WASILLA AK 99687

54822000L008 12
MATANUSKA TELEPHONE ASSN
PO BOX 3550
PALMER, AK 99645-3550

51628B03L017 15
TEICH CRAIG A& ROSE MARIE
PO BOX 874684
WASILLA, AK 99687-4684

18
KNIK FAIRVIEW COMMUNITY COUNCIL
PO BOX 877291
WASILLA, AK 99687

Matanuska-Susitna Borough
Development Services Division
350 E. Dahlia Avenue
Palmer, Alaska 99645

tara0609
19
11/5/2020 8:57:21 AM

The Planning Commission of the Matanuska-Susitna Borough will consider the following:

Application:	Modification to an existing Conditional Use Permit for a marijuana retail facility
MSB Code Section:	MSB 17.60 – Conditional Uses
Applicant:	Kerby Coman, on behalf of Green Degree
Location:	3361 W. Machen Road (Tax ID# 2420B02L001); within Township 17 North, Range 1 West, Section 7, Seward Meridian
Request:	An application for a modification to an existing conditional use permit under MSB 17.60 – Conditional Uses, has been submitted for the operation of a marijuana retail facility. The request is asking to move the location of the use to a different section of the current structure, expand the size of the marijuana retail facility, and the hours of operation.

The public hearing for the Conditional Use Permit modification request detailed above and originally scheduled to be held December 21, 2020, was postponed.

The **new public hearing date for this request is January 18, 2021** at 6:00 p.m. in the Borough Assembly Chambers located at 350 E. Dahlia Avenue in Palmer. This may be the only presentation of this item before the Planning Commission and you are invited to attend.

****Please Note: Due to the ongoing Coronavirus/COVID-19 Pandemic, the method in which this meeting is being conducted may change. If a change to the meeting is necessary, it will be posted on the Borough Website. The public is encouraged to check the Borough Website prior to attending the public hearing for any changes to the meeting schedule or method.***

The Planning Commission members may submit questions to the Planning Commission Clerk concerning the matter or request for more information from the applicant at the time of introduction. All questions and requests submitted by the Commission shall be in writing and copies will be provided to the applicant and made available to all interested parties and the public upon request. Answers to questions and additional material requests will be addressed in the staff report for the public hearing. Commission members may not receive or engage in ex-parte contact with the applicant, other interested parties in the application, or members of the public concerning the application or issues presented in the application.

Application material may be viewed online at www.matsugov.us by clicking on "All Public Notices & Announcements." Application material may also be viewed at the Borough Permit Center. For additional information, you may contact Joe Metzger, Planner II, at 861-7862.

The public may provide verbal testimony in person at the meeting or telephonically by calling 1-855-290-3803. You will hear "Joining conference" when you are admitted to the meeting. You will be automatically muted and able to listen to the meeting. When the Chair announces audience participation or a public hearing you would like to speak to, press *3; you will hear, "Your hand has been raised." When it is your turn to testify, you will hear, "Your line has been unmuted." State your name for the record, spell your last name, and provide your testimony. You have 3 minutes to state your concerns & comments. Written comments can be mailed to: MSB Development Services Division, 350 E. Dahlia Avenue, Palmer, AK 99645. You may e-mail comments to joseph.metzger@matsugov.us. In order to be eligible to file an appeal from a decision of the Planning Commission, a person must be designated an "interested party." See MSB 15.39.010 for the definition of "interested party." The procedures governing appeals to the Board of Adjustment and Appeals are contained in MSB 15.39.010-250, which is available on the Borough home page: www.matsugov.us, in the Borough Clerk's office, and at various libraries within the borough.

Note: Vicinity Map Located on Reverse Side

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ADLIB HOLDINGS LLC
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290 E HERNING AVE
WASILLA, AK 99654-7091

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Green Degree (Machen) Marijuana Retail Facility – Conditional Use Permit (Modification)

An application for a modification to an existing conditional use permit under MSB 17.60 – Conditional Uses, has been submitted for the operation of a marijuana retail facility. The request is asking to move the location of the use to a different section of the current structure, expand the size of the marijuana retail facility, and the hours of operation.

Location: The proposed use is located at 3361 W. Machen Road (Tax ID# 2420B02L001); within Township 17 North, Range 1 West, Section 7, Seward Meridian.

Applicant: Kerby Coman, on behalf of Green Degree

The Public Hearing for the Conditional Use Permit modification request detailed above and originally scheduled for December 21, 2020, was postponed.

The **new public hearing date for this request is** ***January 18, 2021*** at 6:00 p.m. in the Borough Assembly Chambers located at 350 E. Dahlia Avenue in Palmer. This may be the only presentation of this item before the Planning Commission and you are invited to attend.

****Please Note: Due to the ongoing Coronavirus/COVID-19 Pandemic, the method in which this meeting is being conducted may change. If a change to the meeting is necessary, it will be posted on the Borough Website. The public is encouraged to check the Borough Website prior to attending the public hearing for any changes to the meeting schedule or method.***

The application material may also be viewed at the Borough Permit Center. If you have questions please contact Joe Metzger at 861-7862 or mail to MSB Development Services Division, 350 E. Dahlia Avenue, Palmer, AK 99645, or email: joseph.metzger@matsugov.us

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The Planning Commission members may submit questions to the Planning Commission Clerk concerning the matter or request for more information from the applicant at the time of introduction. All questions and requests submitted by the Commission shall be in writing and copies will be provided to the applicant and made available to all interested parties and the public upon request. Answers to questions and additional material requests will be addressed in the staff report for the public hearing. Planning Commission members may not receive or engage in ex-parte contact with the applicant, other interested parties in the application, or members of the public concerning the application or issues presented in the application.

PUBLIC HEARING

The public hearing for the Conditional Use Permit modification request detailed below and originally scheduled to be held December 21, 2020, was postponed.

The **new public hearing date for this request is January 18, 2021** at 6:00 p.m. in the Borough Assembly Chambers located at 350 E. Dahlia Avenue in Palmer. This may be the only presentation of this item before the Planning Commission and you are invited to attend.

Please Note: Due to the ongoing Coronavirus/COVID-19 Pandemic, the method in which this meeting is being conducted may change. If a change to the meeting is necessary, it will be posted on the Borough Website. The public is encouraged to check the Borough Website prior to attending the public hearing for any changes to the meeting schedule or method.

An application for a modification to an existing conditional use permit under MSB 17.60 – Conditional Uses, has been submitted by Kerby Coman, on behalf of Green Degree for the operation of a marijuana retail facility at 3361 W. Machen Road, (Tax ID# 2420B02L001); within Township 17 North, Range 1 West, Section 7, Seward Meridian. The request is asking to move the location of the use to a different section of the current structure, expand the size of the marijuana retail facility.

Application material may be viewed online at www.matsugov.us by clicking on "All Public Notices & Announcements." Application material may also be viewed at the Borough Permit Center. For additional information, you may contact Joe Metzger, Planner II, at 861-7862.

The public may provide verbal testimony in person at the meeting or telephonically by calling 1-855-290-3803. You will hear "Joining conference" when you are admitted to the meeting. You will be automatically muted and able to listen to the meeting. When the Chair announces audience participation or a public hearing you would like to speak to, press *3; you will hear, "Your hand has been raised." When it is your turn to testify, you will hear, "Your line has been unmuted." State your name for the record, spell your last name, and provide your testimony. You have 3 minutes to state your concerns & comments. Written comments can be mailed to: MSB Development Services Division, 350 E. Dahlia Avenue, Palmer, AK 99645. You may e-mail comments to joseph.metzger@matsugov.us. In order to be eligible to file an appeal from a decision of the Planning Commission, a person must be designated an "interested party." See MSB 15.39.010 for the definition of "interested party." The procedures governing appeals to the Board of Adjustment and Appeals are contained in MSB 15.39.010-250, which is available on the Borough home page: www.matsugov.us, in the Borough Clerk's office, and at various libraries within the borough.

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copies will be provided to the applicant and made available to all interested parties and the public upon request. Answers to questions and additional material requests will be addressed in the staff report for the public hearing. Planning Commission members may not receive or engage in ex-parte contact with the applicant, other interested parties in the application, or members of the public concerning the application or issues presented in the application.

Existing Planning Commission Resolution and Conditional Use Permit

By: Mark Whisenhunt
Introduced: June 19, 2017
Public Hearing: July 17, 2017
Action: Approved

MATANUSKA-SUSITNA BOROUGH
PLANNING COMMISSION RESOLUTION NO. 17-26

A RESOLUTION OF THE MATANUSKA-SUSITNA BOROUGH PLANNING COMMISSION APPROVING A CONDITIONAL USE PERMIT FOR THE OPERATION OF A MARIJUANA RETAIL FACILITY AT 3361 WEST MACHEN ROAD, LOCATED WITHIN TOWNSHIP 17 NORTH, RANGE 1 WEST, SECTION 7; TAX ID# 2420B02L001, SEWARD MERIDIAN.

WHEREAS, an application has been received from Sean Tower of Rosebuds Shatter House, for a conditional use permit for the operation of a marijuana retail facility at 3361 West Machen Road, located within Township 17 North, Range 1 West, Section 7; Tax ID# 2420B02L001, Seward Meridian; and

WHEREAS, MSB 17.60.030(A)(4) requires a conditional use permit for the operation of a marijuana retail facility; and

WHEREAS, unless this type of use is maintained under and in accordance with a lawfully issued permit, marijuana retail facilities are declared to be a public nuisance; and

WHEREAS, the subject lot was developed for and has been used as commercial since 1999; and

WHEREAS, other than new signage and additional lighting, the subject structure has maintained the appearance and size since its original construction in 1999; and

WHEREAS, the proposed operation is wholly contained within the existing commercial building; and

WHEREAS, West Machen Road is dominated by commercial and industrial uses on its frontage; and

WHEREAS, the Parks Highway right-of-way abuts the parcel to the south. The Parks Highway and West Machen Road are both within the right-of-way; and

WHEREAS, to the south and west of the subject parcel there are several commercial uses and one church. To the north and east there is a mix of residential uses and vacant land. The city limits of Wasilla abut the subject property to the east; and

WHEREAS, the map labeled "Building Uses and Topography" dated June 30, 3017 shows the commercial nature of the uses on West Machen Road; and

WHEREAS, the closest school (a private pre-school known as, Bright Minds Learning Center) is approximately 3,000 feet away from the proposed use; and

WHEREAS, consumption of marijuana is prohibited at the site; and

WHEREAS, the subject lot accesses directly onto the frontage road known as West Machen Road; and

WHEREAS, West Machen Road is classified as a Major Collector, which is capable of accommodating traffic generated by several commercial retail businesses; and

WHEREAS, persons under the age of 21 are prohibited from entering the proposed facility; and

WHEREAS, according to the application material, the proposed use has a robust security plan in place; and

WHEREAS, according to the security plan, security cameras, motion detectors, and lighting will be used to monitor all activities at the facility; and

WHEREAS, after proper notification of the State of Alaska Alcohol & Marijuana Control Office; all marijuana products deemed unusable will be mixed with saw dust and shredded paper, sealed in a container, and disposed of at a State of Alaska licensed marijuana cultivation facility or the Borough landfill; and

WHEREAS, the existing building is approximately 152 feet from the Parks Highway right-of-way, and approximately 30 feet from each side lot line; and

WHEREAS, the existing structure meets all applicable setback requirements required by MSB 17.55 - Setbacks and Screening Easements; and

WHEREAS, all of the required site plans and operational information have been provided by the applicant; and

WHEREAS, there is no industrial equipment or processes that generate noise associated with the proposed use; and

WHEREAS, there are no outdoor speakers or public announcement systems associated with the proposed use; and

WHEREAS, according to the application material, all marijuana will be stored in sealed containers; and

WHEREAS, according to the application material, loitering will not be allowed; helping to ensure noise and odor will not be an issue; and

WHEREAS, no new landscaping or berms are planned or required by code; and

WHEREAS, the subject location has been used for commercial purposes for approximately 18 years; and

WHEREAS, on May 15, 2017, the State of Alaska Marijuana Control Board voted to approve the Rosebuds Shatter House Retail Marijuana Store License # 12022 with delegation; and

WHEREAS, a copy of the delegated approval for the Rosebuds Shatter House Retail Marijuana Store License # 12022 with delegation has been provided; and

WHEREAS, the Matanuska-Susitna Borough Fire Code Official has issued Plan Review #2017-126 for Tenant Improvement Approval; and

WHEREAS, a certificate of occupancy must still be issued be the Matanuska-Susitna Borough Fire Code Official upon completion of remodel work within the subject building; and

WHEREAS, the proposed use is approximately 750 square feet in size; and

WHEREAS, the minimum parking spaces required for a facility 750 square feet in size is 3 spaces; and

WHEREAS, according to the site plan, 6 customer parking spaces will be provided; and

WHEREAS, according to the site plan, each space will be 20 feet in length and ten feet wide; and

WHEREAS, according to the applicant, there are no vertical clearance limitations on site; and

WHEREAS, ADA guidelines require one van accessible parking space with an eight foot wide parking isle, for every 1 to 25 spaces; and

WHEREAS, according to the site plan, one van accessible parking space with an eight foot wide parking isle will be provided; and

WHEREAS, the Planning Commission has reviewed this application with respect to standards set forth in MSB 17.60.100, 17.60.150 and 17.60.170; and

Whereas, the Planning Commission conducted a public hearing on July 17, 2017 on this matter.

NOW, THEREFORE, BE IT RESOLVED, that the Matanuska-Susitna Borough Planning Commission hereby adopts the aforementioned

findings of fact and makes the following conclusions of law supporting approval of Planning Commission Resolution 17-26:

1. The proposed use, with conditions, will not detract from the value, character and integrity of the surrounding area (MSB 17.60.100(B)(1)).
2. The proposed use will not be harmful to the public health, safety, convenience and welfare (MSB 17.60.100(B)(2)).
3. Sufficient setbacks, lot area, buffers and other safeguards are being provided (MSB 17.60.100(B)(3)).
4. The applicant has met all of the requirements of this chapter (MSB 17.60.100(B)(4)).
5. The proposed use will not negatively affect other properties due to factors such as noise and odor (MSB 17.60.150(A)(1)).
6. Measures are in place to reduce negative affects upon adjacent properties (MSB 17.60.150(A)(2)(a-c)).
7. The proposed use is compatible with the character of the surrounding area (MSB 17.60.150(A)(3)).
8. The proposed use is more than 1,000 feet away from any school grounds (MSB 17.60.150(B)(1)).
9. Documentation demonstrating all applicable licenses pertaining to 3 AAC 306.005 have been obtained (MSB 17.60150(D)(1)).

10. The proposed use is in full compliance with all applicable fire code (MSB 17.60.150(D)(2)).
11. The proposed use is located on a parcel that is appropriate for commercial use (MSB 17.60.170(A)(1-3)).
12. The proposed use meets the minimum number of parking space for retail facilities (MSB 17.60.170(B)).
13. The proposed use complies with current ADA parking space guidelines (MSB 17.60.170(C)).

BE IT FURTHER RESOLVED, that the Planning Commission finds this application does meet the standards of MSB 17.60 and does hereby approve the conditional use permit for the operation of a marijuana retail facility, with the following conditions:

1. The owner and/or operator shall comply with all applicable state and local regulations.
2. All aspects of the operation shall comply with the description detailed in the application material and with the conditions of this permit. An amendment to the Conditional Use Permit shall be required prior to any expansion of the conditional use.
3. The operation shall comply with the maximum permissible sound level limits allowed, per the requirements of MSB 8.52 - Noise, Amplified Sound and Vibration.

4. The hours of operation shall not exceed 10:00 a.m. – 10:00 p.m., Monday through Saturday.

5. Prior to operating, a copy of the certificate of occupancy issued by the MSB Fire Code Official must be provided to the MSB Development Services Division.

6. Borough staff shall be permitted to enter premises subject to this permit to monitor compliance with permit requirements. Such access will at minimum, be allowed on demand when activity is occurring, and/or with prior verbal or written notice, and/or at other times as necessary to monitor compliance. Denial of access to Borough staff shall be a violation of this Conditional Use Permit.

ADOPTED by the Matanuska-Susitna Borough Planning Commission this 17th day of July, 2017.

Mary P. Anderson
MARY ANDERSON, Vice Chair

ATTEST

MARY BRODIGAN, Planning Clerk

(SEAL)

YES: Anderson, Chesbro, Elder, Glasian, and Rauchenstein

NO:

MATANUSKA-SUSITNA BOROUGH

Planning and Land Use Department
350 East Dahlia Avenue • Palmer, AK 99645
Phone (907) 861-7822 • Fax (907) 861-8158
Email: planning@matsugov.us

CONDITIONAL USE PERMIT FOR A MARIJUANA RETAIL FACILITY

PERMIT#: 176020170011

ACTION: In accordance with provisions in Matanuska-Susitna Borough Code 17.60, a Conditional Use Permit for a Marijuana Retail Facility is hereby approved as referenced within this document. This permit is for the operation of a Marijuana Retail Facility known as Rosebuds Shatter House on the permitted site noted below. This decision is based on the findings of fact and conclusions of law contained within MSB Planning Commission Resolution No. 17-26, dated July 17, 2017.

EFFECTIVE DATE: July 17, 2017

PERMITTED SITE: 3361 W. Machen Road
Tax ID# 2420B02L001

PERMITTEE Sean Tower, dba Rosebuds Shatter House
4011 E. Cottonwood Way
Wasilla, AK 99654

PROPERTY OWNER: Aaron & Tonja Hall
PO Box 875299
Wasilla, AK 99687

General Requirements and Conditions:
All development and use of the permitted site shall occur as described in the approved application submitted and as further specified by the conditions listed herein. Any variation from the requirements or conditions of this permit, or from borough code, may be grounds for penalties as authorized by borough code.

Specific conditions of the permit for the operation of a marijuana retail facility:

1. The owner and/or operator shall comply with all applicable state and local regulations.
2. All aspects of the operation shall comply with the description detailed in the application material and with the conditions of this permit. An amendment to the Conditional Use Permit shall be required prior to any expansion of the conditional use.

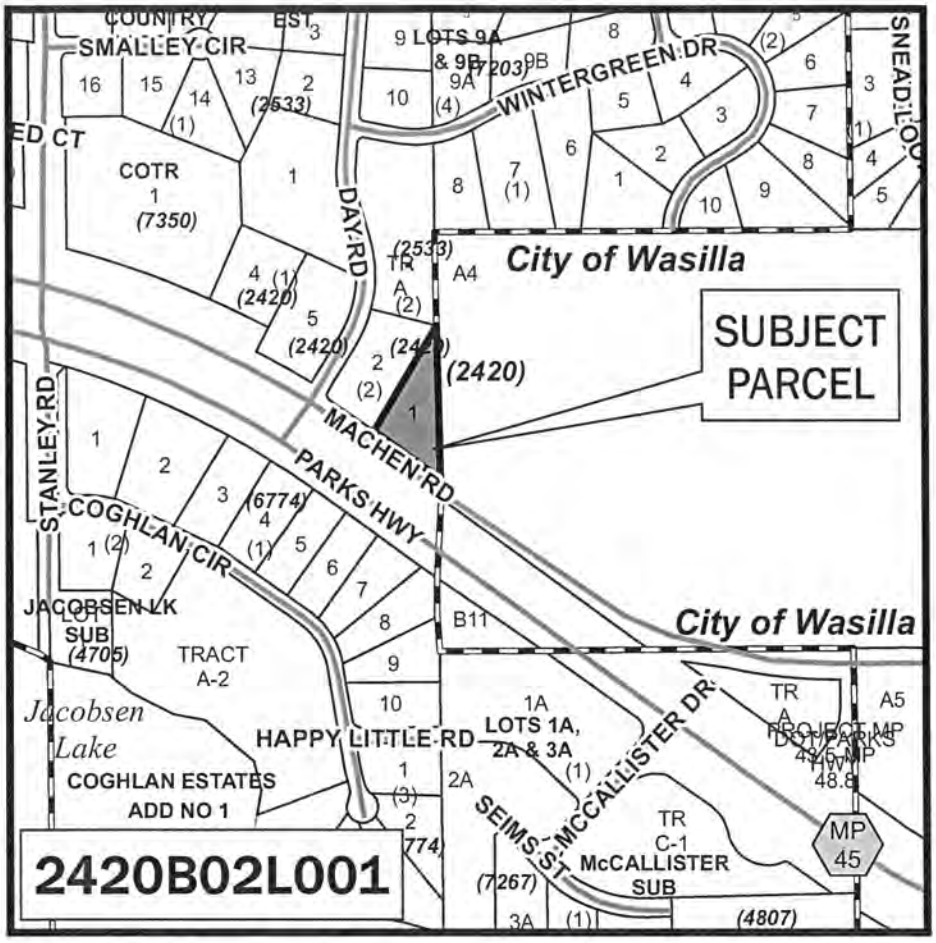
3. The operation shall comply with the maximum permissible sound level limits allowed, per the requirements of MSB 8.52 – Noise, Amplified Sound and Vibration.
4. The hours of operation shall not exceed 10:00 a.m. – 10:00 p.m., Monday through Saturday.
5. Prior to operating, a copy of the certificate of occupancy issued by the MSB Fire Code Official must be provided to the MSB Development Services Division.
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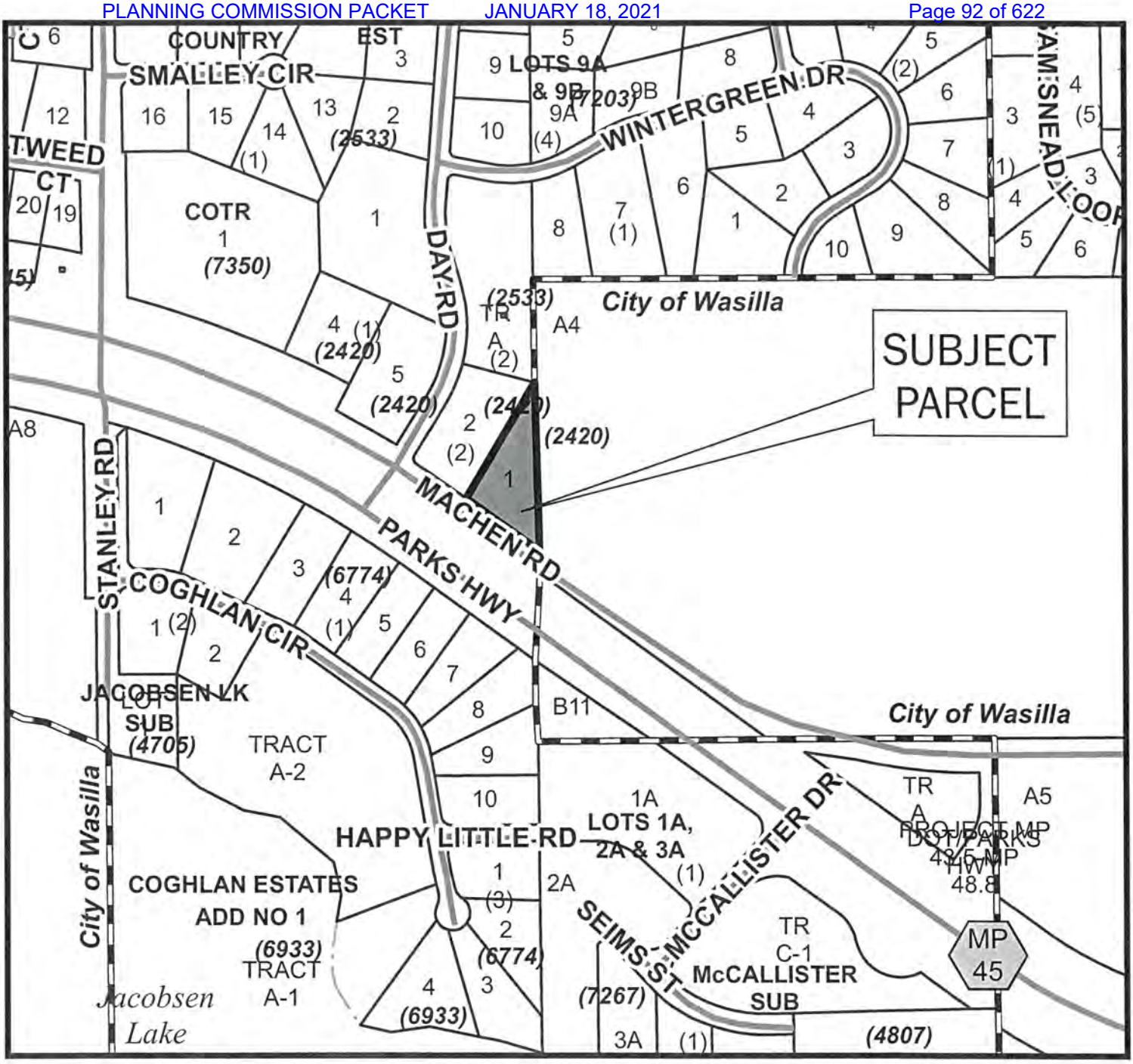
The decision may be appealed within 21 days of the date of approval by the Planning Commission in accordance with MSB 15.39 – Board of Adjustment and Appeals.

Eileen Probasco, Director
Planning & Land Use Department

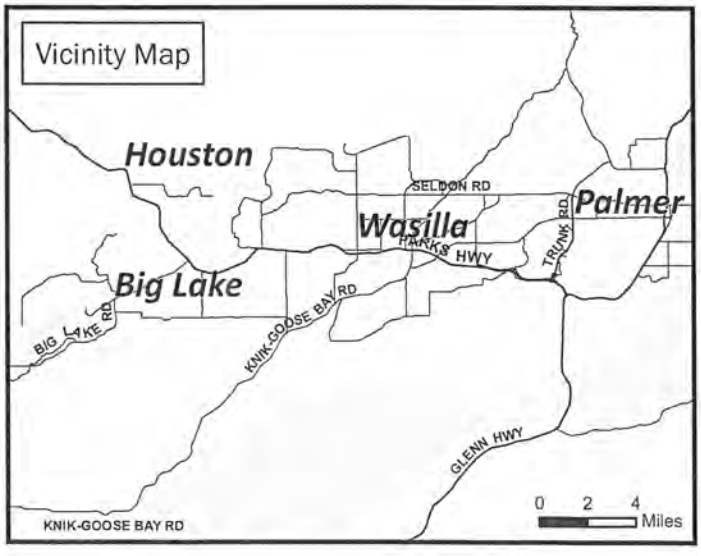
July 18, 2017
Date of Issuance

VICINITY MAP


SUBJECT PARCEL
City of Wasilla
City of Wasilla
2420B02L001
SMALLEY CIR
WINTERGREEN DR
DAY RD
MACHEN RD
PARKS HWY
STANLEY RD
COGHLAN CIR
HAPPY LITTLE RD
SEIMS ST
McCALLISTER DR
SNEADLOU
ED CT
COTR 1 (7350)
JACOBSEN LK LOT SUB (4705)
TRACT A-2
Jacobsen Lake
COGHLAN ESTATES ADD NO 1
LOTS 1A, 2A & 3A
McCALLISTER SUB
TR C-1
TR A4
TR A
A5
B11
MP 45
(2420)
(2533)
(7203)
(7267)
(4807)
(6774)



2420B02L001

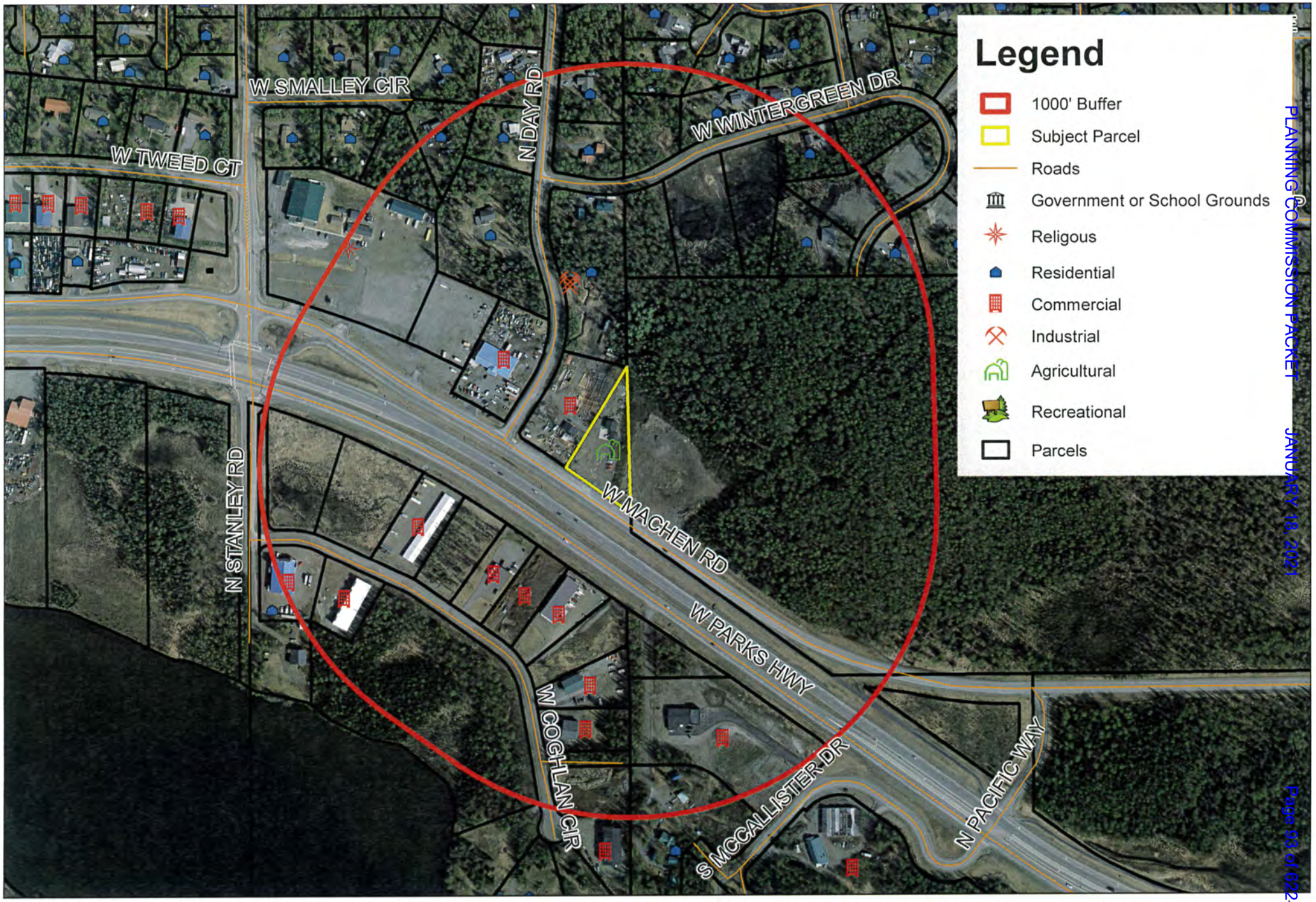


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N

0 500 Feet

MSB Information Technology/GIS
May 19, 2017



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Date: 12/8/2020

1 inch = 400 feet

0 400 800 Feet

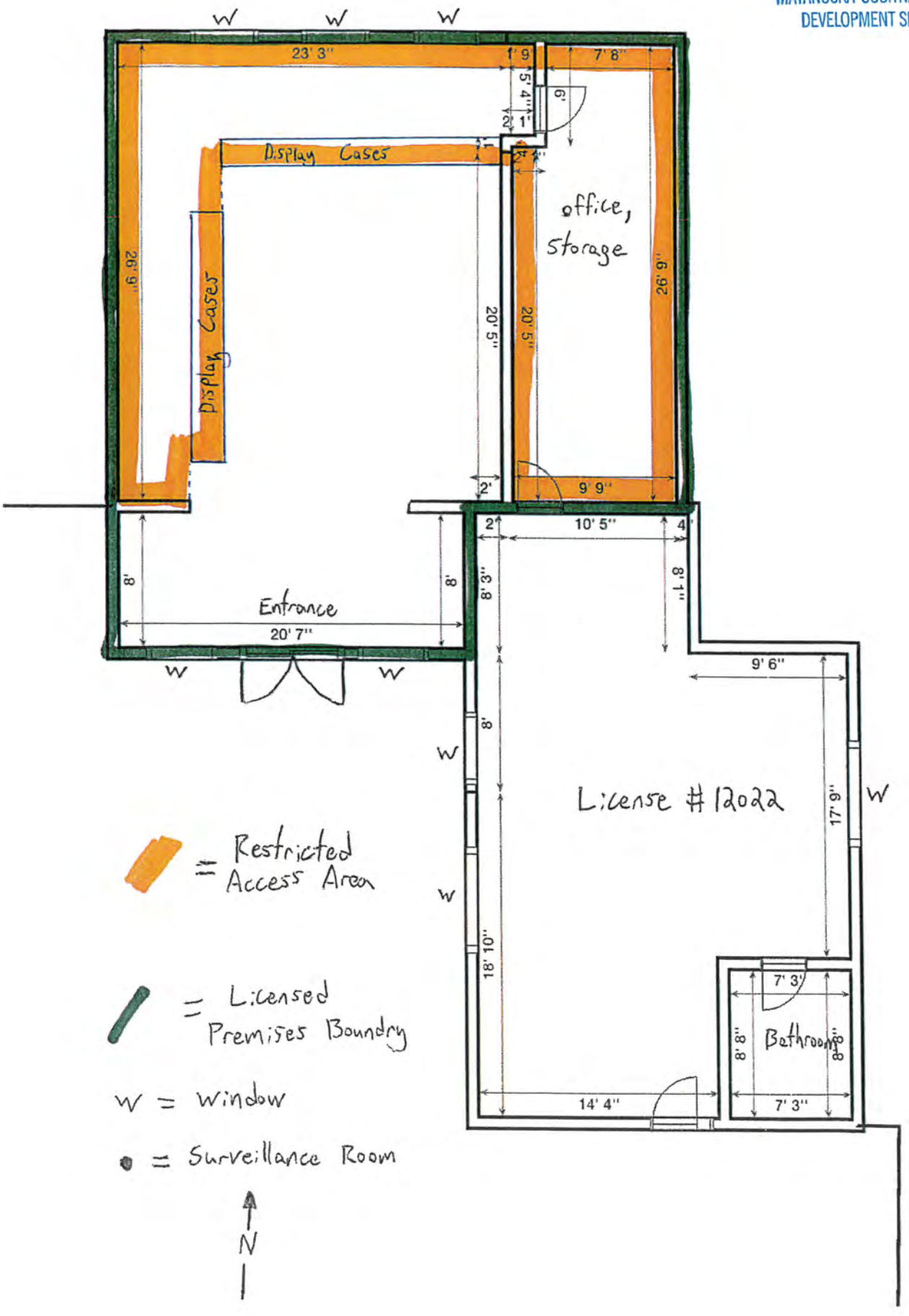
PLANNING COMMISSION PACKET JANUARY 18, 2021

SITE PLAN

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MATANUSKA-SUSITNA BOROUGH
DEVELOPMENT SERVICES

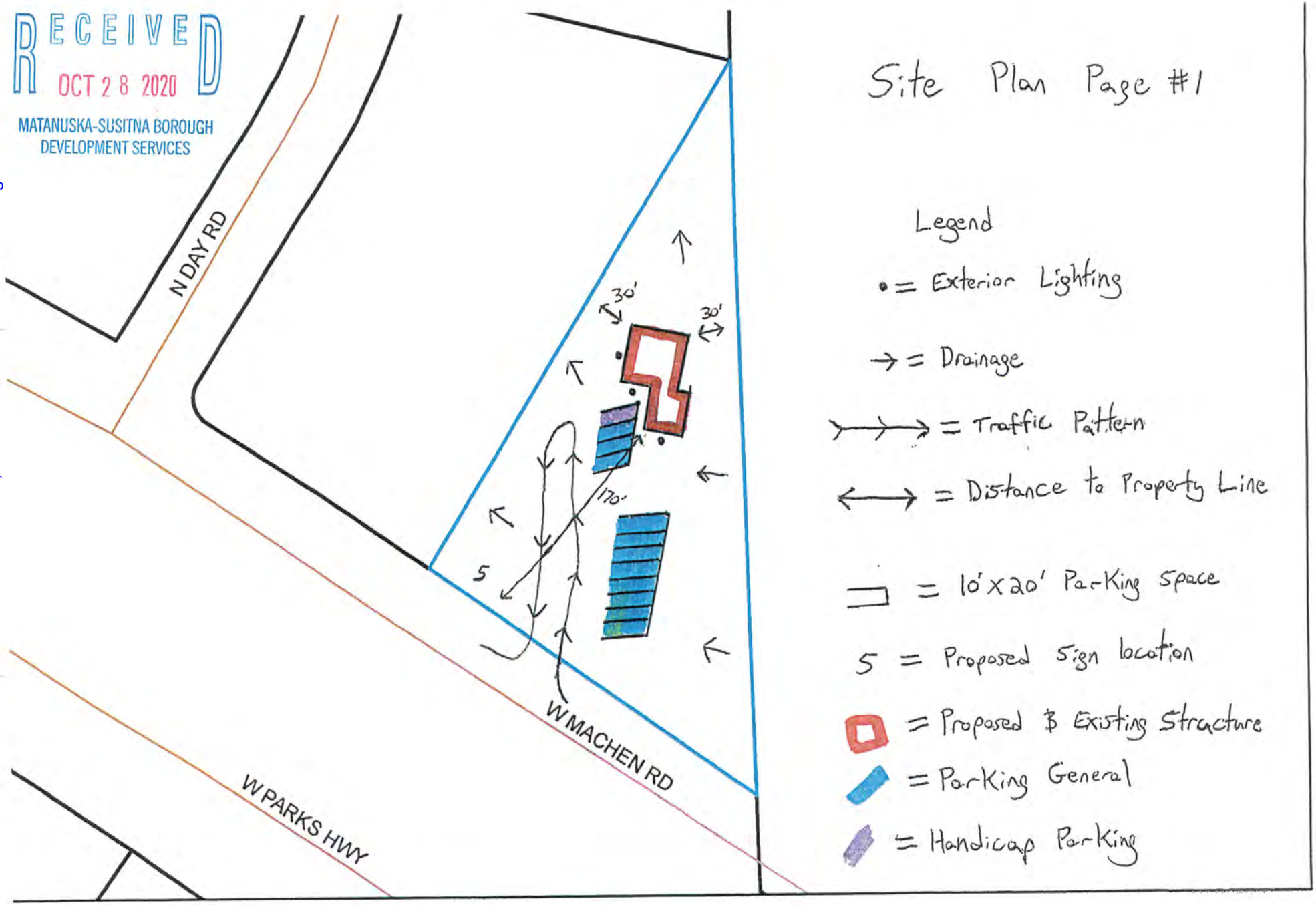
Premises Diagrams

License #12023
DBA: Green Degree



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DEVELOPMENT SERVICES

Site Plan Page #1



Legend

• = Exterior Lighting

→ = Drainage

→→ = Traffic Pattern

⟷ = Distance to Property Line

▭ = 10'x20' Parking Space

5 = Proposed Sign location

▭ = Proposed & Existing Structure

▭ = Parking General

▭ = Handicap Parking

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Date: 10/26/2020

1 inch = 80 feet

0 80 160 Feet

N

Matanuska-Susitna Borough Site Plan Page #3



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TALKEETNA
OCT 26 2020
MATANUSKA-SUSITNA BOROUGH
DEVELOPMENT SERVICES
WASILLA PALMER

Legend

Roads
- Highway
- Major Road
- Medium Road
- Minor Road
- Ramp
- Primitive Road
- Private Road

Incorporated Cities

Parcels

ROW and Easements
- ROW Road
- ROW RR
- ROW Easement
- Section line easement

= Handicap Parking

= Regular Parking

= Traffic Pattern

1: 1,128

0.0 0 0.02 0.04 Miles

WGS_1984_Web_Mercator_Auxiliary_Sphere

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Reported on 10/21/2020 04:19 PM

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APPLICATION MATERIAL

MATANUSKA-SUSITNA BOROUGH

Planning and Land Use Department
Development Services Division
350 East Dahlia Avenue • Palmer, AK 99645
Phone (907) 861-7822 • Fax (907) 861-8158
Email: permitcenter@matsugov.us

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OCT 15 2020
MATANUSKA-SUSITNA BOROUGH
DEVELOPMENT SERVICES

CONDITIONAL USE PERMIT FOR MARIJUANA RELATED FACILITIES – MSB 17.60

Carefully read instructions and applicable borough code. Fill out forms completely. Attach information as needed. Incomplete applications will not be processed.

Application fee must be attached:
NA $1,000 for Marijuana Retail Facility (for Covid safe operations)
____ $1,000 for Marijuana Cultivation Facility

Prior to the public hearing, the applicant must also pay the mailing and advertising fees associated with the application. Applicants will be provided with a statement of advertising and mailing charges. Payment must be made prior to the application presentation before the Borough Planning Commission.

Required Attachments for a Marijuana Cultivation Facility:
____ Wastewater and Waste Material Disposal Plan – 17.60.160 (A)
____ Odor Mitigation and Ventilation Plan – 17.60.160 (B)
____ Hazardous Chemicals Information – 17.60.160 (C)
____ Security plan – 17.60.160 (D)

Required Attachments for Both Retail and Cultivation Facilities:
✓ Documentation demonstrating full compliance with applicable fire code – 17.60.150 (D) (2)

Subject Property: Township:____, Range:____, Section:____, Meridian:____
MSB Tax ID# 2420B02L001
SUBDIVISION: Parks Hwy Industrial BLOCK(S): ____, LOT(S):____
STREET ADDRESS: 3361 W. Mackey Rd. Wasilla AK 99623
FACILITY / BUSINESS NAME: Rosebuds LLC. DBA: Green Degree

Ownership: A written authorization by the owner must be attached for an agent or contact person, if the owner is using one for the application. Is authorization attached? ☐ Yes ☐ No ☑ N/A

Name of Property Owner
Kerby Coman
Mailing: 4426 E Curtis dr.
Wasilla AK 99654
Phone: Hm____ Fax____
Wk____ Cell 884-3153
E-mail Kerby@greendegree.net

Name of Agent / Contact for application
Kerby Coman
Mailing: 4426 E Curtis dr.
Wasilla AK 99654
Phone: Hm____ Fax____
Wk____ Cell 884-3153
E-mail Kerby@greendegree.net

Site Plan – Attach a detailed, to scale, site plan clearly showing the following information:	**Attached**
Proposed and existing structure(s) on the site. Indicate which structure(s) will be used for the proposed use. Dimensions and locations of all existing and proposed structures on the site in relationship to all property lines.	✓
Signage – Existing and Proposed.	✓
Location and dimensions for all access points to and from the site to public rights-of-way or public access easements.	✓
Buffering – Fences, vegetation, topography, berms, and any landscaping	✓
Drainage	✓
Vehicular and pedestrian circulation patterns.	✓
Exterior site lighting.	✓
Location and dimensions of parking areas to be provided	✓
Scale and north arrow using standard engineering intervals such as 1" = 30', 1" = 50' or similar as required by project size.	✓

Map – Attach a detailed, to scale, vicinity map clearly showing the following information:	**Attached**
Identify all existing land uses within 1,000 feet.	✓
Scale and north arrow using standard engineering intervals such as 1" = 30', 1" = 50' or similar as required by project size.	✓

In order to grant a conditional use permit under MSB 17.60, the Planning Commission must find that each of the following requirements have been met. Explain the following in detail:	**Attached**
Is the conditional use compatible with and will it preserve or not materially detract from the value, character and integrity of the surrounding area?	✓
Will the granting of the conditional use permit be harmful to the public health, safety, convenience and welfare?	✓
Are sufficient setbacks, lot area, buffers and other safeguards being provided?	✓
Does the conditional use fulfill all other requirements of MSB Chapter 17.60 pertaining to the conditional use in this section?	✓
Describe measures taken to prevent any potential negative effect upon other properties in the area due to such factors as noise and odor.	✓
Describe measures taken to reduce negative effects upon adjacent properties by: • Increased property line and right-of-way buffers • Planted berms and landscaping • Site and building design features which contribute to the character of the surrounding area	✓
Describe how this use is compatible with the character of the surrounding area.	✓
Current status of State License application process – 17.60.150 (D) (1)	✓

17.60.170 Standards for Marijuana Retail Facilities:	Attached
Describe how the subject parcel is appropriate for the proposed conditional use. Include information detailing: • The proximity of the proposed use to existing businesses; • The proximity of parcels developed with residential uses; • Whether the roads associated with the proposed use have been, or will be, appropriate for commercial use; and • Proposed hours of operations.	✓
Provide information showing minimum parking standards have been met as required by MSB 17.60.170 (B) and (C).	✓

Floor Plan for Marijuana Retail Facilities – Attach a detailed, to scale, floor plan clearly showing the following information:	Attached
Dimensions of all structures.	✓
Interior floor plans (specific location of the use or uses to be made of the development).	✓
Net floor area square footage calculations.	✓

OWNER'S STATEMENT: I am owner of the following property:

MSB Tax account #(s) _____ and, I hereby apply for approval of a conditional use permit to operate a marijuana related facility on the property as described in this application.

I understand all activity must be conducted in compliance with all applicable standards of MSB 17.60 and with all other applicable borough and state.

I understand that other rules such as local, state and federal regulations, covenants, plat notes, and deed restrictions may be applicable and other permits or authorization may be required. I understand that the borough may also impose conditions and safeguards designed to protect the public's health, safety and welfare and ensure the compatibility of the use with other adjacent uses.

I understand that it is my responsibility to identify and comply with all applicable rules and conditions, covenants, plat notes, and deed restrictions, including changes that may occur in such requirements.

I grant permission for borough staff members to enter onto the property as needed to process this application and monitor compliance. Such access will at a minimum, be allowed when the activity is occurring and, with prior notice, and at other times necessary to monitor compliance.

The information submitted in this application is accurate and complete to the best of my knowledge.

Signature: Property Owner	Printed Name	Date
[signature]	Kerby Coman	10-14-20
Signature: Agent	Printed Name	Date
[signature]	Kerby Coman	10-14-20

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OCT 2 8 2020
MATANUSKA-SUSITNA BOROUGH
DEVELOPMENT SERVICES

Rosebuds LLC Conditional Use Permit for Marijuana Related Facility

We are making a change to our cannabis facility CUP for Covid-safe operations, by increasing our business hours to allow for customers visits be spread out across each day as much as possible, giving the customer a bigger window of time to choose to shop with us, and by increasing our retail square footage licensed area from 750 sqft to 870 sqft to allow proper social distancing for workers and customers.

The following supplemental documentation is for attachment to the Conditional Use Permit Application for Rosebuds LLC, doing business as Green Degree, for a Retail Marijuana Store License location at 3361 W Machen Rd. Wasilla AK 99623.

1. SITE PLAN

1.1. PROPOSED AND EXISTING SITE STRUCTURES
See attached site plan page 1.

1.2. SIGNAGE
Green Degree will use three signs that will identify the store by its business name.
The following are dimensions, descriptions and placements of each sign.
a) Sign #1 is no larger than 4800 square inches, it displays the business name and logo and it is attached to the building, facing the Machen roadway.
b) Sign #2 & #3 will not exceed 4,800 square inches and will be placed to the south of the of the building.

1.3. PUBLIC RIGHTS OF WAY
See attached site plan page 1.

1.4. BUFFERING
See attached site plan pages 2.

1.5. DRAINAGE
See attached site plan page 1.

1.6. VEHICULAR AND PEDESTRIAN CIRCULATION PATTERNS
See attached site plan page 1.

1. 7. EXTERIOR SITE LIGHTING
See attached site plan page 1.

1.8. LOCATION AND DIMENSIONS OF PARKING AREA
See attached site plan page 1.

1.9. SCALE AND NORTH ARROW
See attachments.

2. MAP

2.1. IDENTIFY ALL EXISTING LAND USES WITHIN 1000 FEET
See attached site plan page 2.
2.2. SCALE AND NORTH ARROW
See attached site plan 2.

3. ADDITIONAL INFORMATION

3.1.IS THE CONDITIONAL USE COMPATIBLE WITH AND WILL IT PRESERVE OR NOT MATERIALLY DETRACT FROM THE VALUE, CHARACTER OF THE SURROUNDING AREA?
Yes. The building in which this marijuana retail store is housed is a commercial building. There is also a cannabis cultivation inside the same building. The overall use of that section of Machen is commercial use and the building Green Degree is located has been used for commercial use for over 15 years.
3.2. WILL THE GRANTING OF THE CONDITIONAL USE PERMIT BE HARMFUL TO THE PUBLIC HEALTH, SAFETY, CONVENIENCE AND WELFARE?
No. We have been operating this facility for close to 3 years and have done nothing but helped the community and economy. We also will have certain plans in place to ensure public health and safety such as: A diversion prevention plan, loiter patrol. Any and all cannabis waste this facility produces gets rendered unusable waste by being ground up with trash and being disposed of in the onsite dumpster.
3.3. ARE SUFFICIENT SETBACKS, LOT AREA, BUFFERS AND OTHER SAFEGUARDS BEING PROVIDED?
Yes. All required setbacks, lot area, buffers, and other safeguards have been met and are provided. Currently the property is within state and borough regulations.
3.4. DOES THE CONDITIONAL USE FULFILL ALL OTHER REQUIREMENTS OF MSB CHAPTER 17.60 PERTAINING TO THE CONDITIONAL USE IN THIS SECTION?
Yes.
3.5. DESCRIBE MEASURES TAKEN TO PREVENT ANY POTENTIAL NEGATIVE EFFECT UPON OTHER PROPERTIES IN THE AREA DUE TO SUCH FACTORS AS NOISE OR ODOR.
The establishment will not be increasing the amount of noise or odor in the area.
3.6. DESCRIBE MEASURES TAKEN TO REDUCE NEGATIVE EFFECTS UPON ADJACENT PROPERTIES BY:
a. INCREASED PROPERTY LINE AND RIGHT-OF-WAY BUFFERS
i. Not Applicable.
b. PLANTED BERMS AND LANDSCAPING
ii. Not Applicable.
c. SITE AND BUILDING DESIGN FEATURES WHICH CONTRIBUTE TO THE CHARACTER OF THE SURROUNDING AREA
iii. There will be no changes to the exterior or the interior of the building that will negatively impact adjacent properties.

3.7. DESCRIBE HOW THIS USE IS COMPATIBLE WITH THE CHARACTER OF THE SURROUNDING AREA.

The building in which this marijuana retail store is housed is a commercial building. There is also a cannabis cultivation inside the same building. The overall use of that section of Machen is commercial use and the building Green Degree is located has been used for commercial use for over 15 years.

3.8. CURRENT STATUS OF STATE LICENSE APPLICATION PROCESS

The application for Rosebuds LLC is currently active and operating

4. STANDARDS FOR MARIJUANA RETAIL FACILITY

4.1 DESCRIBE HOW THE SUBJECT PARCEL IS APPROPRIATE FOR THE PROPOSED CONDITIONAL USE

The overall use of that section of Machen is Commercial use and the building Green Degree is located has been used for commercial use for over 15 years. Our proposed hour of operation is mon-sun 8am to 5am. These hours of operation are appropriate for this location because: This is primarily a commercial part of Machen in an industrial zone with no residential neighbors and this will have no impact on any residential parcels, It poses no threat to public safety or the surrounding area, it will reduce the visiting traffic frequency therefore improving traffic conditions, it is located in a commercial building located directly off of Machen Rd which is a highway frontage, increasing our business hours will allow for customers visits to be spread out across a longer time span each day, This will help reduce any person to person contact that might be taking place customer to customer, this will allow our staff more adequate time to sanitize the customer area between customers. See attached map for identification of surrounding parcels.

4.2 PROVIDE INFORMATION SHOWING MINIMUM PARKING STANDARDS HAVE BEEN MET AS REQUIRED BY MSB 17 .60.170 (8) AND (C)

A handicap parking sign will be hung in the designated handicap parking spot.
(See attached Site Plan #3

5. FLOOR PLAN

5.1 DIMENSIONS OF ALL STRUCTURES

See attached Premises Diagrams

5.2 INTERIOR FLOOR PLANS

See attached Premises Diagrams

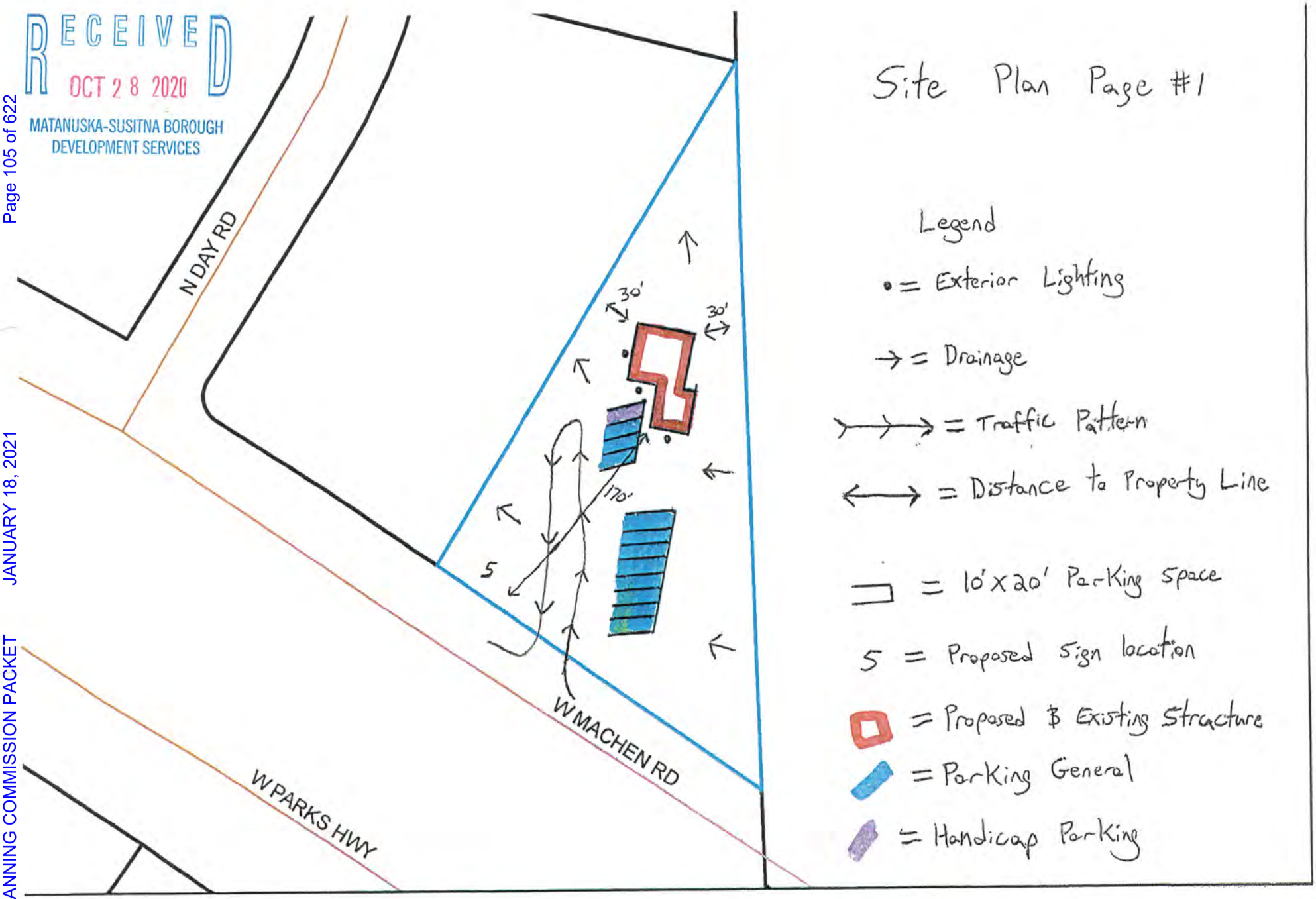
5.3 NET FLOOR AREA SQUARE FOOTAGE CALCULATIONS

See attached Premises Diagrams

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Page 105 of 622
JANUARY 18, 2021
PLANNING COMMISSION PACKET

Site Plan Page #1



Legend

• = Exterior Lighting

→ = Drainage

= Traffic Pattern

= Distance to Property Line

= 10'x20' Parking Space

5 = Proposed Sign location

= Proposed & Existing Structure

= Parking General

= Handicap Parking

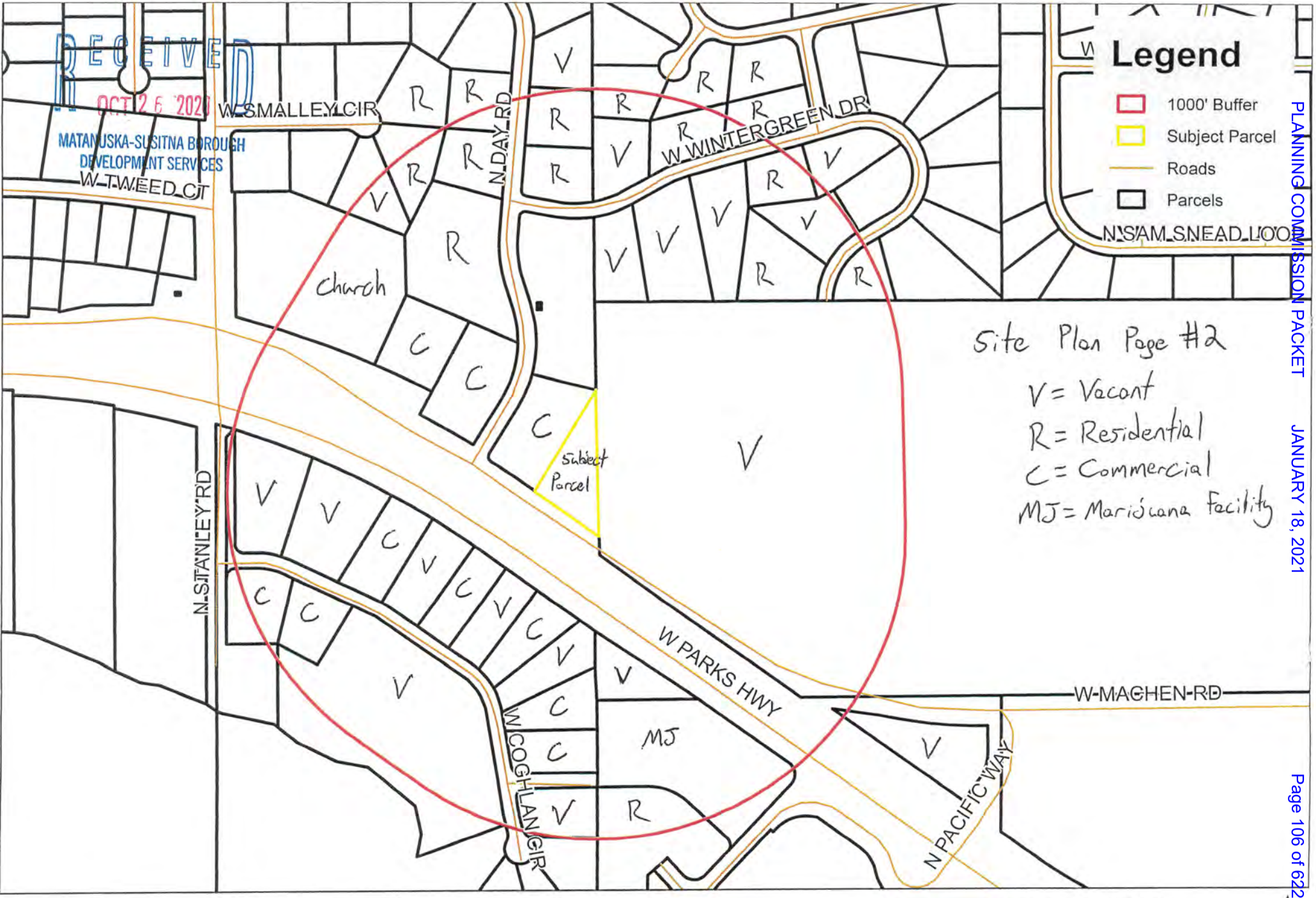
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Date: 10/26/2020

1 inch = 80 feet

0 80 160 Feet

N



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Date: 10/15/2020

1 inch = 400 feet

0 400 800 Feet

Matanuska-Susitna Borough Site Plan Page #3

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DEVELOPMENT SERVICES

PLANNING COMMISSION PACKET JANUARY 18, 2021 Page 107 of 622



Legend

Roads
- Highway
- Major Road
- Medium Road
- Minor Road
- Ramp
- Primitive Road
- Private Road

Incorporated Cities

Parcels

ROW and Easements
- ROW Road
- ROW RR
- ROW Easement
- Section line easement

= Handicap Parking

= Regular Parking

= Traffic Pattern

1: 1,128

0.0 0 0.02 0.04 Miles

WGS_1984_Web_Mercator_Auxiliary_Sphere

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Reported on 10/21/2020 04:19 PM

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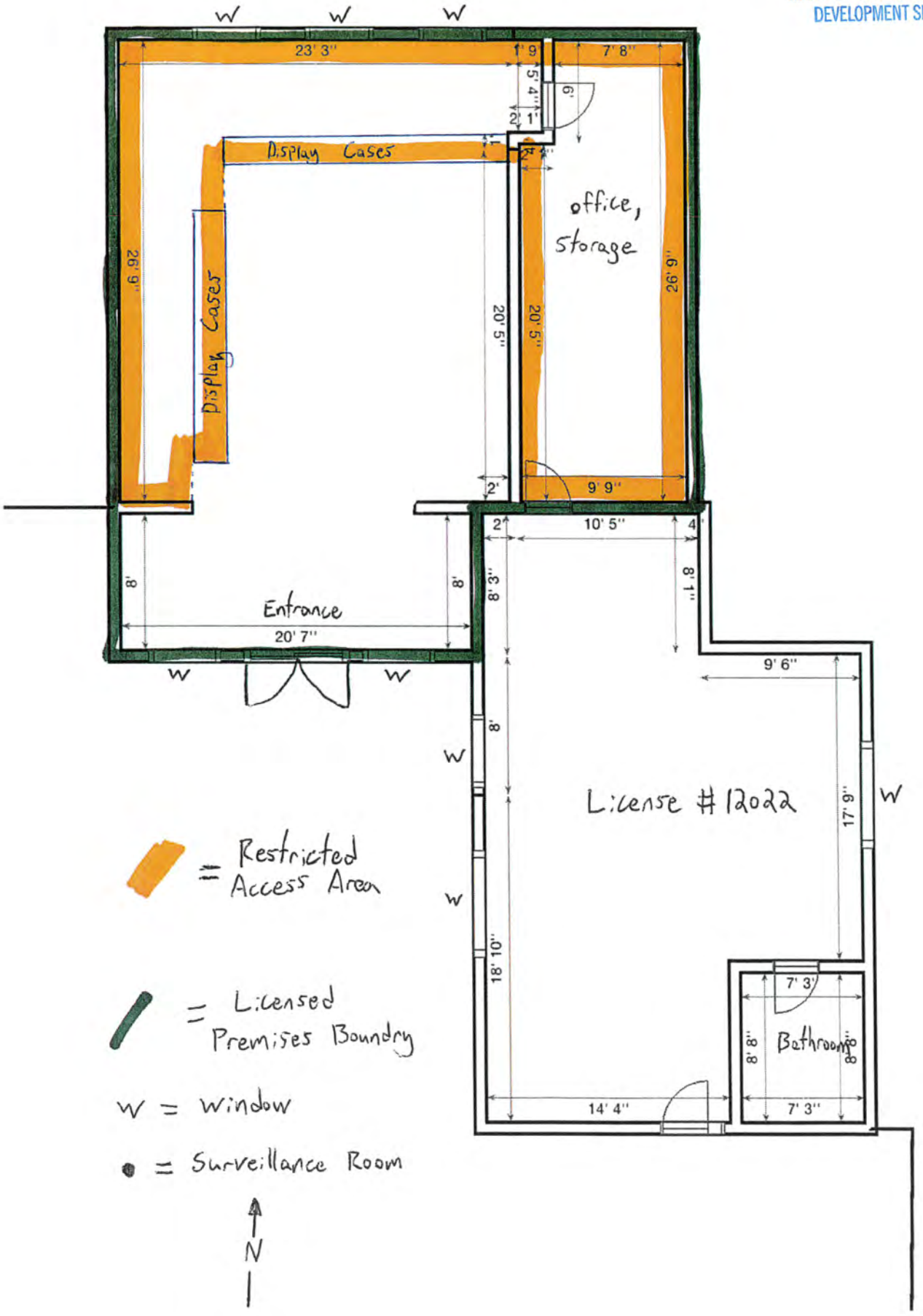
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DEVELOPMENT SERVICES

Premises Diagrams
License #12023
DBA: Green Degree



Joseph Metzger

From: Kerby Coman <kerby@hempire-co.com>
Sent: Monday, October 26, 2020 11:56 AM
To: Joseph Metzger
Subject: Re: Green Degree (Machen) RFAI
Attachments: Rosebuds LLC CUP Narrative.docx

[**EXTERNAL EMAIL** - CAUTION: Do not open unexpected attachments or links.]
Here is the updated Narrative. I will be bringing diagrams by around 2 pm as discussed.

On Thu, Oct 22, 2020 at 1:00 PM Joseph Metzger <Joseph.Metzger@matsugov.us> wrote:

> Hello again Kerby,
>
> Attached, you will find a letter requesting additional information for your modification request. Let me know if you have any questions or need clarification on anything.
>
> Respectfully,
>
> Joe Metzger
> MSB Planner
> 907-861-7862

MATANUSKA-SUSITNA BOROUGH
Planning and Land Use Department
Development Services Division
350 East Dahlia Avenue • Palmer, AK 99645
Phone (907) 861-7822 • Fax (907) 861-8158
www.matsugov.us

October 22, 2020

Kerby Coman
On behalf of, Green Degree (Machen)
4426 E. Curtis Drive
Wasilla, AK 99654

SUBJECT: Conditional Use Permit Application – Request for Required Information
LOCATION: 3361 W. Machen Road (Tax ID:2420B02L001)

Dear Mr. Coman,

Borough staff has reviewed the application material and the site plan(s) submitted on October 15, 2020 for a modification to an existing Conditional Use Permit to operate a marijuana retail facility under MSB 17.60 on the above referenced property. It has been determined that the following information needs to be provided and/or clarified in order to process this request:

1. The application material indicates the modification request is for COVID safe operations. Could you elaborate on this and provide some more details in the narrative?

2. The current square footage of the retail is 750. What is proposed square footage of the modification request?

3. Some of the narrative lacks details and doesn't clearly indicate how the requirements on page 2 and 3 of the application will be met. Submit a detailed narrative that addresses the requirements contained in page 2 and 3 of the application.

4. Provide justification why this location is appropriate for the hours of operation you have proposed (8:00 a.m. to 5:00 a.m., Monday-Sunday)?

5. The site plans that have been submitted are insufficient. Please submit site plans that are to scale and clearly show all of the information listed on page two of the application.

6. Please include a copy of your State of Alaska marijuana retail establishment license.

7. Does the use generate any marijuana related waste? If so, please indicate your disposal methods.

Once an application has been determined to be complete, staff will begin the public notice process. Should you have any questions or require additional information, please feel free to contact me at the above mailing address, phone: 861-7862, or email: joseph.metzger@matsugov.us. Thank you for your time and consideration on this matter.

Respectfully,

Joe Metzger
MSB Planner II
907-861-7862

Department of Commerce, Community, and Economic Development

ALCOHOL & MARIJUANA CONTROL OFFICE

State of Alaska / Commerce / Marijuana / License Search / License #12023

LICENSE NUMBER 12023

Return to Search Results

License Number: 12023

License Status: Active-Operating

License Type: Retail Marijuana Store

Doing Business As: GREEN DEGREE

Business License Number: 1078259

Issue Date: 11/13/2020

Effective Date: 11/13/2020

Expiration Date: 08/31/2021

Email Address: kerby@greendegree.net

Physical Address: 3361 W Machen Rd
Retail Space
Wasilla, AK 99623
UNITED STATES

Licensees: Rosebuds LLC 10081129

Entity Officials: Kerby Coman
Sean Tower

Onsite Consumption Endorsement

Status:

Approval Date:

Issue Date:

Effective Date:

MSB • Department of Emergency Services • Central Mat-Su Fire Department

Fire & Life Safety Division

Physical: 1911 S Terrace Court, Palmer
Mailing: 101 W Swanson Avenue • Wasilla, AK 99654
Office (907) 861-8030 • Fax (907) 861-8157 • E-mail: FireCode@matsugov.us

October 15, 2020

Rosebuds LLC.
3361 W. Machen Rd.
Wasilla, AK 99654

SUBJECT:	Rosebuds dba Green Degree
FIRE SERVICE AREA:	Central Mat-Su FSA
PLAN REVIEW:	2017-126
TYPE OF CONSTRUCTION:	V-B
OCCUPANCY TYPE:	M/F-1

2012 INTERNATIONAL BUILDING AND FIRE CODE

Dear Rosebuds LLC:

An inspection of the subject facility has been completed by this office for conformity with the State Fire Safety Regulations and is approved. Enclosed is a certificate of occupancy that must be posted on the premises.

All buildings are required to be equipped with a Knox Rapid Entry Key Box. IFC 506. One can be obtained at www.knoxbox.com using department name Mat-Su Borough, Sub-District 1.

Approval of submitted plans is not approval of omissions or oversights by this office or noncompliance with any applicable regulations of the Municipal Government. The plans have not been reviewed for compliance with the federal Americans with Disabilities Act or structural requirements.

It must be understood that the inclusion of and compliance with State Fire Safety Regulations does not preclude the necessity of compliance with the requirements of local codes and ordinances.

If we can be of further assistance in this matter, please feel free to contact us at the address above.

Sincerely,

Donald C. Cuthbert
Fire Marshal

Fire and Life Safety Division

Central Mat-Su Fire Service Area No. 130 - District 1
Department of Emergency Services, Matanuska-Susitna Borough

Non-Structural Fire & Life Safety Certificate of Occupancy

This area has been inspected and approved by the Central Mat-Su Fire Department in accordance with the State of Alaska, Matanuska-Susitna Borough, and Fire Service Area fire and life safety regulations, to be occupied by:

Rosebuds Shatter House Dba Green Degree
3361 W. Machen Rd, Wasilla AK

Date Issued: 10/15/2020

Authority: AS 18.70.080, 13 AAC 50.075 & MSB RS06-054

by Donald C. Cuthbert, Fire Marshal

MATANUSKA-SUSITNA BOROUGH

Real Property Detail for Account: 2420B02L001

Site Information

Account Number	2420B02L001	Subdivision	PARKS HWY IND
Parcel ID	80015	City	None
TRS	S17N01W07	Map WA12	Tax Map
Abbreviated Description (Not for Conveyance)	PARKS HWY IND BLOCK 2 LOT 1		
Site Address	3361 W MACHEN RD		

Ownership

Owners	GREEN LAND GROUP LLC TOWER SEAN	Buyers	
Primary Owner's Address	5800 W LOCKSLEY LOOP WASILLA AK 99623	Primary Buyer's Address	

Appraisal Information

Year	Land Appraised	Bldg. Appraised	Total Appraised
2020	$85,200.00	$58,800.00	$144,000.00
2019	$85,200.00	$59,500.00	$144,700.00
2018	$85,200.00	$57,600.00	$142,800.00

Assessment

Year	Land Assessed	Bldg. Assessed	Total Assessed[1]
2020	$85,200.00	$58,800.00	$144,000.00
2019	$85,200.00	$59,500.00	$144,700.00
2018	$85,200.00	$57,600.00	$142,800.00

Building Information

Structure 1 of 2

Residential Units	1	Use	Commercial Use
Condition	Standard	Design	Cabin
Basement	None	Construction Type	Frame
Year Built	1999	Grade	1220 - Cabin
Foundation	Other	Building Appraisal	$35200
Well	Well 3 - Dug Well	Septic	Septic - 1 - Septic Tank

Structure 2 of 2

Residential Units	0	Use	Residential Garage
Condition	Standard	Design	Other
Basement	None	Construction Type	Frame
Year Built	1999	Grade	None
Foundation	Slab on Grade	Building Appraisal	$23600
Well		Septic	

Building Item Details

Building Number	Description	Area	Percent Complete
1	Gas Heat	1 Sq. Ft.	100%
1	First Story	678 Sq. Ft.	100%
2	Garage (10.3) Area - 11M	960 Sq. Ft.	100%

Tax/Billing Information

Year	Certified	Zone	Mill	Tax Billed
2020	Yes	0037	16.463	$2370.67
2019	Yes	0037	16.589	$2400.43
2018	Yes	0037	16.509	$2357.48

Recorded Documents

Date	Type	Recording Info (offsite link to DNR)
5/1/2018	WARRANTY DEED (ALL TYPES)	Palmer 2018-008403-0
12/31/2008	WARRANTY DEED (ALL TYPES)	Palmer 2008-027667-0
6/3/2004	WARRANTY DEED (ALL TYPES)	Palmer 2004-014736-0

Tax Account Status [2]

Status	Tax Balance	Farm	Disabled Veteran	Senior	Total	LID Exists
Current	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00 No

Land and Miscellaneous

Gross Acreage	Taxable Acreage	Assembly District	Precinct	Fire Service Area	Road Service Area
1.09	1.09	Assembly District 004	10-050	130 Central Mat-Su	027 Meadow Lakes RSA

[1] Total Assessed is net of exemptions and deferments.rest, penalties, and other charges posted after Last Update Date are not reflected in balances.

[2] If account is in foreclosure, payment must be in certified funds.

Last Updated: 10/26/2020 12:00:12 AM

COMMENTS

Agency Comments

Joseph Metzger

From: Don Cuthbert
Sent: Tuesday, November 3, 2020 11:42 AM
To: Joseph Metzger
Subject: RE: Green Degree 3361 W. Machen Road

Joe,
I have no problem with what he is asking to do but I will need to see it when it is done.
Thanks for checking.
Don

Donald Cuthbert
Fire Marshal
Fire & Life Safety Division
Central Mat-Su Fire Department
(907) 861-8030
FireCode@matsugov.us

From: Joseph Metzger <Joseph.Metzger@matsugov.us>
Sent: Tuesday, November 3, 2020 10:30 AM
To: Don Cuthbert <Donald.Cuthbert@matsugov.us>
Subject: Green Degree 3361 W. Machen Road

Hi Don,

Hope you are doing well.

Kerby Coman of Green Degree has submitted a request to modify his conditional use permit for a marijuana retail facility. He is proposing to move the operation to a different part of the current structure by moving the retail facility to where there is currently a limited marijuana cultivation facility and moving the cultivation facility to where the retail facility is.

He mentioned that he spoke with you and that someone from the Fire Marshall office would come out after the change was made to inspect.

I just want to confirm with you that what he is proposing meets the applicable fire code and that this would not require a plan review prior to moving the operations?

If you need any more information or details, just let me know. Thanks for your help!

Respectfully,

Joe Metzger

Joseph Metzger

From: Theresa Taranto
Sent: Monday, November 9, 2020 11:49 AM
To: Joseph Metzger
Subject: RE: RFC Green Degree (Machen) - Due December 2

FIRM 8060, X Zone
No other comments.

Theresa Taranto
Mat-Su Borough
Development Services
Administrative Specialist

350 E Dahlia Ave.
Palmer, Alaska 99645
907-861-8574
www.matsugov.us

From: Joseph Metzger <Joseph.Metzger@matsugov.us>
Sent: Friday, November 6, 2020 1:26 PM
To: 'allen.kemplen@alaska.gov' <allen.kemplen@alaska.gov>; 'tucker.hurn@alaska.gov' <tucker.hurn@alaska.gov>; 'melanie.nichols@alaska.gov' <melanie.nichols@alaska.gov>; 'kyler.hylton@alaska.gov' <kyler.hylton@alaska.gov>; 'sarah.wilber@alaska.gov' <sarah.wilber@alaska.gov>; 'mearow@matanuska.com' <mearow@matanuska.com>; 'rglenn@mta-telco.com' <rglenn@mta-telco.com>; 'jthompson@mta-telco.com' <jthompson@mta-telco.com>; 'row@enstarnaturalgas.com' <row@enstarnaturalgas.com>; 'ospdesign@gci.com' <ospdesign@gci.com>; Eric Phillips <Eric.Phillips@matsugov.us>; Cindy Corey <Cindy.Corey@matsugov.us>; Terry Dolan <Terry.Dolan@matsugov.us>; Jim Jenson <James.Jenson@matsugov.us>; Jamie Taylor <Jamie.Taylor@matsugov.us>; Nicole Wilkins <Nicole.Wilkins@matsugov.us>; Karol Riese <Karol.Riese@matsugov.us>; Taunnie Boothby <Taunnie.Boothby@matsugov.us>; Theresa Taranto <Theresa.Taranto@matsugov.us>; John Aschenbrenner <John.Aschenbrenner@matsugov.us>; John Aschenbrenner <John.Aschenbrenner@matsugov.us>; Jill Irsik <Jill.Irsik@matsugov.us>; Michelle Wagner <Michelle.Wagner@matsugov.us>; Cheryl Scott <Cheryl.Scott@matsugov.us>; Brad Sworts <Brad.Sworts@matsugov.us>; info@mlccak.org; tedleonarddistrict4@gmail.com
Subject: RFC Green Degree (Machen) - Due December 2

MEMORANDUM

Date:	November 6, 2020
To:	Various Governmental Agencies
From:	Joe Metzger, MSB Planner
Subject:	Request for Review and Comments Governmental Agencies
Project:	Modification of an existing Conditional Use Permit for a marijuana retail facility
Location:	3361 W. Machen Road (Tax ID# 2420B02L001);

within Township 17 North, Range 1 West, Section 7, Seward Meridian

Applicant: Kerby Coman, on behalf of Green Degree (Machen)

An application for a modification to an existing conditional use permit under MSB 17.60 – Conditional Uses, has been submitted for the operation of a marijuana retail facility. The request is asking to move the location of the use to a different section of the current structure and to expand the size of the marijuana retail facility. **The Planning Commission will conduct a public hearing for this request on December 21, 2020.**

Application material may be viewed online at www.matsugov.us by clicking on "All Public Notices & Announcements." Application material may also be reviewed at the Borough Permit Center. A direct link to the application material is here:

https://www.matsugov.us/publicnotice/green-degree-machen-marijuana-retail-facility-conditional-use-permit-modification

Written comments are due on or before ***December 2, 2020*** and will be included in the Planning Commission packet for the Commissioner's review and information. Please be advised that comments received from the public after that date will not be included in the staff report, but will be provided to the Commission at the meeting.

Respectfully,

Joe Metzger
MSB Planner
907-861-7862

Public Comments

EMAILS OF DECEMBER 21, 2020

RESOLUTION PC 20-47
GREEN DEGREE

HANDOUTS

Karol Riese

From: Joseph Metzger
Sent: Monday, December 21, 2020 2:44 PM
To: Karol Riese
Subject: RE: Questions from Commissioner Glashan

Please forgive my oversight on this, Commissioner Glashan is correct. The property is within the City of Wasilla, however, the owner is Gary Lundgren. Gary Lundgren was sent a public notice and he did not provide comment or respond.

Respectfully,

Joe Metzger
MSB Planner
907-861-7862

From: Karol Riese <Karol.Riese@matsugov.us>
Sent: Monday, December 21, 2020 2:30 PM
To: Joseph Metzger <Joseph.Metzger@matsugov.us>
Subject: FW: Questions from Commissioner Glashan

From: Stafford Glashan <SJG@shanwil.com>
Sent: Monday, December 21, 2020 2:22 PM
To: Karol Riese <Karol.Riese@matsugov.us>
Subject: RE: Questions from Commissioner Glashan

[**EXTERNAL EMAIL** - CAUTION: Do not open unexpected attachments or links.]
Karol

Not sure how to bring this up…I am pretty sure that the land to the east is not owned by the City…When we did the exploration for the road extension it was some sort of development corporation (I don't think a local one but it was a while ago)…maybe that changed, but I would appreciate a double-check…

S

From: Karol Riese <Karol.Riese@matsugov.us>
Sent: Monday, December 21, 2020 1:00 PM
To: Mark Whisenhunt <Mark.Whisenhunt@matsugov.us>
Subject: Questions from Commissioner Glashan

Good Afternoon,

Below please find answers to questions that Commissioner Glashan had.

Thank you,

Karol

PC20-47 Who owns the large lot to the east of the facility? Were they contacted? Did they respond?

- The City of Wasilla owns the lot to the east of the facility. The City of Wasilla was sent a public notice and they did not provide comment or respond.

PC20-48 Was the church contacted? What about the building owner? I recall that the original application contained concessions to make the owner/church happy. One of them was operating hours; it seems odd that neither made a statement.

- The lot to the east of the use is owned by Wasilla Christian Church (2201 S. Knik Goose Bay Road). The church was sent a public notice and they provided no comment or response.
- Carolyn Dejoung is the court appointed Property Manager of the subject property and provided a Letter of Authorization for the conditional use permit modification request. No further comment was received from the building owner.

Karol L. Riese
Department Administrative Specialist
Planning and Land Use Department
Matanuska-Susitna Borough
907-861-7851 Office

PLANNING COMMISSION RESOLUTION

By: Joe Metzger
Introduced: December 7, 2020
Public Hearing: January 18, 2021
Action:

MATANUSKA-SUSITNA BOROUGH
PLANNING COMMISSION RESOLUTION NO. PC 20-47

A RESOLUTION OF THE MATANUSKA-SUSITNA BOROUGH PLANNING COMMISSION APPROVING THE MODIFICATION OF AN EXISTING CONDITIONAL USE PERMIT FOR THE OPERATION OF A MARIJUANA RETAIL FACILITY AT 3361 WEST MACHEN ROAD, TAX ID# 2420B02L001; LOCATED WITHIN TOWNSHIP 17 NORTH, RANGE 1 WEST, SECTION 7, SEWARD MERIDIAN.

WHEREAS, an application has been received from Kerby Coman on behalf of Green Degree to modify an existing conditional use permit for the operation of a marijuana retail facility at 3361 West Machen Road (Tax ID#2420B02L001); within Township 17 North, Range 1 West, Section 7, Seward Meridian; and

WHEREAS, the applicant is specifically requesting to move the retail facility to a different portion of the existing structure, increase the size of the retail facility, and expand the hours of operation as specified in Planning Commission Resolution 17-47; and

WHEREAS, MSB 17.60.040 allows a property owner to apply for a modification of a conditional use permit; and

WHEREAS, on July 17, 2017 Rosebuds Shatter House, now Green Degree, obtained approval from the MSB Planning Commission to operate a marijuana retail facility at the subject property, through the adoption of Planning Commission Resolution 17-47; and

WHEREAS, Green Degree is currently operating in accordance with Conditional Use Permit #176020170011; and

WHEREAS, the use is contained within the existing commercial structure; and

WHEREAS, the current size of the use is approximately 750 square feet in size; and

WHEREAS, the proposed use will be approximately 990 square feet in size; and

WHEREAS, there is no industrial equipment or processes that generate noise associated with the use; and

WHEREAS, the subject lot was developed for and has been used as commercial since 1999; and

WHEREAS, the subject lot accesses directly onto the frontage road known as West Machen Road; and

WHEREAS, West Machen Road is classified as a collector, which is capable of accommodating traffic generated by several commercial retail businesses; and

WHEREAS, West Machen Road is dominated by commercial and industrial uses on its frontage; and

WHEREAS, the current operating hours are 10:00 a.m. to 10:00 p.m., Monday-Saturday; and

WHEREAS, the proposed hours of operation are 8:00 a.m. to 5:00 a.m., daily; and

WHEREAS, the use is located approximately 160 feet from the West Machen Road right-of-way and approximately 30 feet to the east and west side lot lines; and

WHEREAS, the closest residential structure is located to the north and is approximately 680 feet from the use; and

WHEREAS, persons under the age of 21 are prohibited from entering the facility; and

WHEREAS, according to the application material, loitering will not be allowed; and

WHEREAS, consumption of marijuana is prohibited at the site; and

WHEREAS, marijuana products will be kept in sealed containers; and

WHEREAS, the closest school (Bright Minds Learning Center) is approximately 3,060 feet away from the proposed use; and

WHEREAS, the application material indicates three signs with the business name and logo will be used. One sign will be hung above the entrance of the facility and the other two will be placed on the sign post located to the south of the facility; and

WHEREAS, the Central Mat-Su Fire Department has issued a Non-Structural Fire and Life Safety Certificate of Occupancy; and

WHEREAS, the commercial structure is in full compliance with the applicable State of Alaska fire code; and

WHEREAS, the use has been in operation for over three years and has incurred no violations; and

WHEREAS, the commercial structure meets all applicable setback requirements of MSB 17.55 - Setbacks and Screening Easements; and

WHEREAS, all of the required site plans and operational information have been provided by the applicant; and

WHEREAS, Green Degree has obtained a State of Alaska Retail Marijuana Store License #12023; and

WHEREAS, documentation of the applicant's marijuana retail facility license has been provided to the MSB Development Services Division; and

WHEREAS, the applicant has provided a copy of the approved Certificate of Occupancy; and

WHEREAS, to the south and west of the subject parcel there are several commercial uses and one church. To the north and east there is a mix of residential uses and vacant land. The city limits of Wasilla abut the subject property to the east; and

WHEREAS, a marijuana retail facility 990 square feet in size is required to provide three parking spaces with one ADA compliant space; and

WHEREAS, thirteen customer parking spaces are being provided; and

WHEREAS, each space is at least 20 feet in length and ten feet wide; and

WHEREAS, there are no vertical clearance limitations on site; and

WHEREAS, ADA guidelines require one van accessible parking space, 11 feet wide with a five-foot wide parking aisle, for every 1 to 25 spaces; and

WHEREAS, according to the site plan, one van accessible parking space, at least 11 feet wide with a five-foot wide parking aisle is being provided; and

WHEREAS, the Planning Commission has reviewed this application with respect to standards set forth in MSB 17.60.100, 17.60.150 and 17.60.170; and

WHEREAS, the Planning Commission conducted a public hearing on January 18, 2021 on this matter.

NOW, THEREFORE, BE IT RESOLVED, that the Matanuska-Susitna Borough Planning Commission hereby adopts the aforementioned findings of fact and makes the following conclusions of law supporting approval of Planning Commission Resolution 20-47:

1. The modification to the use will not detract from the value, character, and integrity of the surrounding area (MSB 17.60.100(B)(1)).

2. The modification to the use will not be harmful to the public health, safety, convenience, and welfare (MSB 17.60.100(B)(2)).
3. Sufficient setbacks, lot area, buffers or other safeguards are being provided (MSB 17.60.100(B)(3)).
4. The application material meets all of the requirements of this chapter (MSB 17.60.100(B)(4)).
5. The modification to the use will not negatively affect other properties due to factors such as noise and odor (MSB 17.60.150(A)(1)).
6. Measures are in place to reduce negative affects upon adjacent properties (MSB 17.60.150(A)(2)(a-c)).
7. The modification to the use is compatible with the character of the surrounding area (MSB 17.60.150(A)(3)).
8. The use is more than 1,000 feet away from any school grounds (MSB 17.60.150(B)(1)).
9. The applicant has provided documentation demonstrating all applicable licenses pertaining to 3 AAC 306.005 have been obtained (MSB 17.60.150(D)(1)).
10. The applicant has provided documentation demonstrating the use is in full compliance with all applicable fire code (MSB 17.60.150(D)(2)).
11. The use is located on a parcel that is appropriate for commercial use (MSB 17.60.170(A)(1-3)).

12. The modification to the use meets the minimum number of parking space for retail facilities (MSB 17.60.170(B)).

13. The modification to the use complies with current ADA parking space guidelines (MSB 17.60.170(C).

BE IT FURTHER RESOLVED, the Planning Commission finds this application does meet the standards of MSB 17.60 and hereby modifies the conditional use permit approved on July 17, 2017 for the operation of a marijuana retail facility, by increasing the size of the retail facility by approximately 240 square feet as indicated in the application material and approving the following condition to supersede condition four of Planning Commission Resolution 17-47:

4. The hours of operation shall not exceed 8:00 a.m. - 5:00 a.m., daily.

ADOPTED by the Matanuska-Susitna Borough Planning Commission this ___ day of _____, 2021.

COLLEEN VAGUE, Chair

ATTEST

KAROL RIESE, Planning Clerk

(SEAL)

YES:

NO:

PUBLIC HEARING QUASI-JUDICIAL

Resolution No. PC 20-48

Green Degree

(Pages 135-246)

PUBLIC HEARING

MATANUSKA-SUSITNA BOROUGH

Planning and Land Use Department
Development Services Division
350 East Dahlia Avenue • Palmer, AK 99645
Phone (907) 861-7822
www.matsugov.us

DEVELOPMENT SERVICES DIVISION STAFF REPORT

Date:	January 6, 2021
File Number:	1760202000011
Applicant:	Kerby Coman, on behalf of Green Degree
Property Owner:	Andrea Kretschek
Request:	Planning Commission Resolution 20-48 Modification to an existing Conditional Use Permit for the operation of a marijuana retail facility in accordance with MSB Chapter 17.60 – Conditional Uses
Location:	2301 S. Knik-Goose Bay Road, Suite 1B (Tax ID# 1005000L00W-1); within Township 17 North, Range 1 West, Section 17, Seward Meridian
Size of Facility:	Approximately 1,290 Square Feet
Reviewed By:	Alex Strawn, Planning & Land Use Director Mark Whisenhunt, Acting Development Services Manager
Staff:	Joe Metzger, Planner
Staff Recommendation:	Approval

EXECUTIVE SUMMARY

A conditional use permit application has been submitted to modify the operation of an existing marijuana retail facility. The applicant is proposing to increase the size of the retail facility from approximately 619 square feet to approximately 1,290 square feet and to expand the hours of operation. The request is to incorporate the second floor of the premise, which will be used as office space and for storage. The second floor will not be open to the public. The current operating hours are 11:00 a.m. to 11:00 p.m., Monday thru Saturday, and the request is to expand the hours of operation to 8:00 a.m. to 5:00 a.m., daily.

MSB 17.60.040 allows a property owner or authorized agent, to apply for a modification of a conditional use permit. This review and recommendation is limited to the scope of the request and will not address the operation as a whole. Should this request be denied, the existing Conditional Use Permit #176020160006, approved through Planning Commission Resolution 17-10, will remain in effect as is. In the event the request is approved, it will be a modification of the existing Conditional Use Permit as detailed in Planning Commission Resolution 20-48.

LAND USE

Existing Land Use/Background:
The subject property is Lot W-1 of the Blissard Subdivision and was originally subdivided in 1966 and contains two lots. Lot W-1 was developed for and has been used as commercial since 1984. Other than new signage, the subject structure has maintained the appearance and size since its original construction in 1984. Access to the property is from South Knik-Goose Bay Road onto a shared access driveway. A building approximately 700 square feet in size was constructed on the subject lot in 2004 and is currently being used as a marijuana manufacturing facility. In 2018, an approximately 100' x 60' structure was built to the southwest of the retail facility and this building is currently vacant.

The subject structure contains multiple units, and there are currently three licensed and operating limited cultivations contained within the structure. On March 20, 2017, Green Degree was issued Conditional Use Permit 176020160006 for the operation of a marijuana retail facility. The facility has been in operation since 2017 and has received no violations or citations from the MSB.

Surrounding Land Uses:

The South Knik-Goose Bay Road right-of-way abuts the parcel to the north. South Knik-Goose Bay Road has several different uses on its frontage including commercial, industrial, and residential. To the west and southwest are commercial uses. To the north there is a mix of residential uses and vacant land. To the east and northeast there is a religious service building, and a mix of residential, vacant, and commercial uses. The city limits of Wasilla abut the parcel to the north. The closest residential structure is located across South Knik-Goose Bay Road to the north and is approximately 540 feet from the use.

REVIEW OF APPLICABLE CRITERIA AND FINDINGS

MSB 17.03 – Public Notification
On November 5, 2020 notices were mailed to all property owners within a 600-foot radius of the use and to the Knik-Fairview Community Council. A total of 19 notices were mailed. A courtesy notice was also mailed to the City of Wasilla on November 5, 2020. The permit application notification was published in the November 6, 2020 issue of the Frontiersman. The application material was posted on the Borough website for public review on November 6, 2020. The public notice and a request for comments were also emailed to the Knik-Fairview Community Council on November 6, 2020. Staff received no comments from the Community Council. Staff did receive three comments from the public about the modification to the use, which are all in general opposition.

On December 21, 2020 the Public Hearing was postponed due to technical difficulties and rescheduled for January 18, 2021.

On December 28, 2020 updated notices were mailed to all property owners within a 600-foot radius of the use and to the Meadow Lakes Community Council. A total of 19 notices were mailed. A courtesy notice was also mailed to the City of Wasilla. The permit application was published in the December 30, 2020 of the Frontiersman. The application material was updated on the Borough website for public review on December 23, 2020.

Section 17.60.100 General Standards

(A) A conditional use may be approved only if it meets with the requirements of this section in addition to any other standards required by this chapter:

(B) In granting a conditional use permit, the planning commission must make the following findings:

(1) the conditional use will preserve or not detract from the value, character, and integrity of the surrounding area;

Findings of Fact:

1. The use is contained within Suite 1B of the commercial structure.
2. The current size of the use is approximately 619 square feet.
3. The proposed use will be approximately 1,290 square feet in size.
4. There is no industrial equipment or processes that generate noise associated with the use.
5. The subject lot was developed for and has been used as commercial since 1984.
6. Lots W-1 & W-2 share a common access onto South Knik-Goose Bay Road. There are no other roads associated with this parcel.
7. South Knik-Goose Bay Road is classified as a major collector and is capable of accommodating traffic associated with commercial uses.
8. South Knik-Goose Bay Road has many different uses on its frontage, including residential, commercial, and industrial.
9. The current hours of operation are 11:00 a.m. to 11:00 p.m., Monday thru Saturday.
10. The proposed hours of operation are 8:00 a.m. to 5:00 a.m., daily.
11. The use is located approximately 90 feet from the Knik-Goose Bay Road right-of-way, approximately 206 feet to the south side lot line, approximately 105 feet to the east side lot line and approximately 175 feet to the west side lot line.
12. The closest residential structure is located across South Knik-Goose Bay Road to the north and is approximately 540 feet from the use.
13. There are three licensed and operating limited marijuana cultivation facilities and one licensed and operating marijuana manufacturing facility located on the subject parcel.
14. Consumption of marijuana is prohibited at the site.
15. Persons under the age of 21 are prohibited from entering the facility.
16. According to the application material, loitering will not be allowed.

Discussion: Staff recommends a condition that hours of operation shall not exceed 8:00 a.m. to 5:00 a.m., daily. Staff feels these hours of operation are appropriate for the use and location. Currently, there are four other commercial uses on the same property that do not have limited hours of operation and these businesses can operate 24-hours if they choose to do so. The use does not border any parcels with residential homes. The closest residential structure is located across South Knik-Goose Bay Road to the north and is approximately 550 feet from the use. From the right-of-way at the end of the driveway of this residential structure, staff could only see the top portion and roof of the subject structure. The use has been in operation for over three years and has incurred no violations. If the requested hours of operation are approved, it is unlikely the applicant will choose to operate from 8:00 a.m. – 5:00 a.m. daily, however, they would like the ability to do so as they see fit.

The request is to basically double the size of the licensed premises. The portion of the retail that is open to the public will be remodeled and the layout will change, but there is essentially no increase in size to the part of the facility that is open to the public. The expansion would incorporate the second floor of the unit and that area will be used as office space and storage. The second floor of the use will not be open to the public.

Conclusion of Law: Based on the above findings, the modification to the use will not detract from the value, character and integrity of the surrounding area (MSB 17.60.100(B)(1)).

---

(2) that granting the conditional use permit will not be harmful to the public health, safety, convenience, and welfare;

Findings of Fact:

1. The closest school (Snowshoe Elementary) is approximately 8,500 feet away from the use.
2. Consumption of marijuana is prohibited at the site.
3. Persons under the age of 21 are prohibited from entering the facility.
4. Lots W-1 & W-2 share a common access onto South Knik-Goose Bay Road. There are no other roads associated with this parcel.
5. South Knik-Goose Bay Road is classified as a major collector and is capable of accommodating traffic associated with commercial uses.
6. South Knik-Goose Bay Road has many different uses on its frontage, including residential, commercial, and industrial.
7. The closest residential structure located across South Knik-Goose Bay Road to the north and is approximately 540 feet from the use.
8. The application material indicates two signs with the business name and logo will be used. One sign hangs above the door of the facility and the other is proposed to be to the north of the parking area.
9. The Central Mat-Su Fire Department has issued a Non-Structural Fire and Life Safety Certificate of Occupancy.
10. The commercial structure is in full compliance with the applicable State of Alaska fire code.
11. The use has been in operation for over three years and has incurred no violations.

12. The current hours of operation are 11:00 a.m. to 11:00 p.m., Monday thru Saturday.
13. The proposed hours of operation are 8:00 a.m. to 5:00 a.m., daily.

Discussion: Staff received a comment from Mat-Su Fire and Life Safety indicating that they have met with the applicant and have no issue with the modification request.

Conclusion of Law: Based on the above findings, the modification to the use will not be harmful to the public health, safety, convenience and welfare (MSB 17.60.100(B)(2)).

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(3) that sufficient setback, lot area, buffers, or other safeguards are being provided to meet the conditions listed in subsections (B)(1) through (3) of this section; and

Findings of Fact:

1. The use is located approximately 90 feet from the Knik-Goose Bay Road right-of-way, approximately 206 feet to the south side lot line, approximately 105 feet to the east side lot line and approximately 175 feet to the west side lot line.
2. The commercial structure meets all applicable setback requirements of MSB 17.55 – Setbacks and Screening Easements.
3. The closest school (Snowshoe Elementary) is approximately 8,500 feet away from the use.
4. The closest residential structure is located across South Knik-Goose Bay Road to the north and is approximately 540 feet from the use.
5. Lots W-1 & W-2 share a common access onto South Knik-Goose Bay Road. There are no other roads associated with this parcel.
6. South Knik-Goose Bay Road is classified as a major collector and is capable of accommodating traffic associated with commercial uses.
7. South Knik-Goose Bay Road has many different uses on its frontage, including residential, commercial, and industrial.
8. The Central Mat-Su Fire Department has issued a Non-Structural Fire and Life Safety Certificate of Occupancy.
9. The commercial structure is in full compliance with the applicable State of Alaska fire code.

Conclusion of Law: Based on the above findings, sufficient setbacks, lot area, buffers and other safeguards are being provided (MSB 17.60.100(B)(3)).

---

(4) the conditional use fulfills all other requirements of this chapter pertaining to the conditional use in this section.

Finding of Fact:

1. All of the required site plans and operational information have been provided by the applicant.

Conclusion of Law: The application material has met all of the requirements of this chapter (MSB 17.60.100(B)(4)).

Section 17.60.150 General Standards for Marijuana Related Facilities

(A) In addition to the standards set forth by MSB 17.60.100, the planning commission shall weigh factors which contribute or detract from the development of a safe, convenient, and attractive community, including, but not limited to:

(1) any potential negative effect upon other properties in the area due to such factors as noise and odor.

Findings of Fact:

1. The use is contained within Suite 1B of the commercial structure.
2. The current size of the use is approximately 619 square feet.
3. The proposed use will be approximately 1,290 square feet in size.
4. There is no industrial equipment or processes that generate noise associated with the use.
5. Consumption of marijuana is prohibited at the site.
6. The use has been in operation for over three years and has incurred no violations.
7. According to the application material, loitering will not be allowed.

Conclusion of Law: Based on the above findings, the modification to the use will not negatively affect other properties due to factors such as noise and odor (MSB 17.60.150(A)(1)).

(2) the effectiveness of measures to reduce negative effects upon adjacent properties by:

(a) increased property line and right-of-way buffers;

(b) planted berms and landscaping;

(c) site and building design features which contribute to the character of the surrounding area.

Findings of Fact:

1. The use is contained within Suite 1B of the commercial structure.
2. The current size of the use is approximately 619 square feet.
3. The proposed use will be approximately 1,290 square feet in size.
4. The Central Mat-Su Fire Department has issued a Non-Structural Fire and Life Safety Certificate of Occupancy.
5. The commercial structure is in full compliance with the applicable State of Alaska fire code.
6. The structure meets all applicable setback requirements of MSB 17.55 – Setbacks and Screening Easements.

Conclusion of Law: Based on the above findings, measures are in place to reduce negative affects upon adjacent properties (MSB 17.60.150(A)(2)(a-c)).

(3) whether the use is compatible with the character of the surrounding area.

Findings of Fact:

1. The use is contained within Suite 1B of the commercial structure.
2. The current size of the use is approximately 619 square feet.
3. The proposed use will be approximately 1,290 square feet in size.
4. There are three licensed and operating limited marijuana cultivation facilities and one licensed and operating marijuana manufacturing facility located on the subject parcel.
5. The Central Mat-Su Fire Department has issued a Non-Structural Fire and Life Safety Certificate of Occupancy.
6. The commercial structure is in full compliance with the applicable State of Alaska fire code.
7. Lots W-1 & W-2 share a common access onto South Knik-Goose Bay Road. There are no other roads associated with this parcel.
8. South Knik-Goose Bay Road is classified as a major collector and is capable of accommodating traffic associated with commercial uses.
9. South Knik-Goose Bay Road has many different uses on its frontage, including residential, commercial, and industrial.
10. The closest residential structure is located across South Knik-Goose Bay Road to the north and is approximately 540 feet from the use.
11. The use is located approximately 90 feet from the Knik-Goose Bay Road right-of-way, approximately 206 feet to the south side lot line, approximately 105 feet to the east side lot line and approximately 175 feet to the west side lot line.
12. The structure meets all applicable setback requirements of MSB 17.55 – Setbacks and Screening Easements.
13. The current hours of operation are 11:00 a.m. to 11:00 p.m., Monday thru Saturday.
14. The proposed hours of operation are 8:00 a.m. to 5:00 a.m., daily.
15. Consumption of marijuana is prohibited at the site.
16. According to the application material, loitering will not be allowed.

Conclusion of Law: Based on the above findings, the modification to the use is compatible with the character of the surrounding area (MSB 17.60.150(A)(3)).

(B) At the time of their establishment, marijuana related conditional uses shall meet the following requirements and not be located within:

(1) One thousand feet of school grounds;

(C) Separation distances referenced in subsection (B) of this section are measured in a direct line between the closest point of the facility within which the marijuana facility is located, and the closest point on the lot or parcel of land upon which any of the above itemized uses are located.

Finding of Fact:

1. The closest school (Snowshoe Elementary) is approximately 8,500 feet away from the use.

Conclusion of Law: Based on the above finding, the use is more than 1,000 feet away from any school grounds (MSB 17.60.150(B)(1)).

(D) Prior to final approval of the permit the applicant shall provide written documentation demonstrating that:

(1) all applicable licenses have been obtained as required by 3 AAC 306.005.

Findings of Fact:

1. Green Degree has obtained a State of Alaska Retail Marijuana Store License #11031.
2. Documentation of the applicant's marijuana retail facility license has been provided to the MSB Development Services Division.

Discussion: The State of Alaska requires a Form MJ-14 Licensed Premises Diagram Change to be reviewed and approved by the Local Government for a premises diagram change or expansion. The applicant has submitted this form and Staff will return the form to the applicant with the appropriate information pending the outcome of the Conditional Use Permit Modification request.

Conclusion of Law: Based on the above findings, the applicant has provided a copy of the documents demonstrating all applicable licenses pertaining to 3 AAC 306.005 have been obtained (MSB 17.60.150(D)(1)).

(2) from the fire marshal having jurisdiction, that the proposed conditional use is in full compliance with applicable fire code, including but not limited to AS 18.70.010 through 18.70.160, Fire Protection, and 13 AAC 50.025 through 50.080, Fire Code.

Findings of Fact:

1. The Central Mat-Su Fire Department has issued a Non-Structural Fire and Life Safety Certificate of Occupancy.
2. The commercial structure is in full compliance with the applicable State of Alaska fire code.
3. The applicant has provided a copy of the approved Certificate of Occupancy.

Conclusion of Law: Based on the above findings, the modification to the use is in full compliance with all applicable fire code (MSB 17.60.150(D)(2)).

Section 17.60.170 Standards for Marijuana Retail Facilities

(A) Marijuana retail facilities shall only be approved upon finding by the commission that the proposed facility is located on a parcel that is appropriate for commercial use. At a minimum, the commission shall consider:

(1) proximity of the proposed use to existing businesses;

(2) proximity to parcels developed for residential use; and

(3) whether roads associated with the proposed use have been, or will be, appropriate for commercial use.

Findings of Fact:

1. Lots W-1 & W-2 share a common access onto South Knik-Goose Bay Road. There are no other roads associated with this parcel.
2. South Knik-Goose Bay Road is classified as a major collector and is capable of accommodating traffic associated with commercial uses.
3. South Knik-Goose Bay Road has many different uses on its frontage, including residential, commercial, and industrial.
4. The subject lot was developed for and has been used as commercial since 1984.
5. There are three licensed and operating limited marijuana cultivation facilities and one licensed and operating marijuana manufacturing facility located on the subject parcel.
6. The use has been in operation for over three years and has incurred no violations.
7. To the east and northeast there is a religious service building and a mix of residential, vacant, and commercial uses.
8. To the west and southwest are commercial uses.
9. The closest residential structure is located across South Knik-Goose Bay Road to the north and is approximately 540 feet from the use.
10. The use is located approximately 90 feet from the Knik-Goose Bay Road right-of-way, approximately 206 feet to the south side lot line, approximately 105 feet to the east side lot line and approximately 175 feet to the west side lot line.

Conclusion of Law: Based on the above findings, the modification to the use is located on a parcel that is appropriate for commercial use (MSB 17.60.170(A)(1-3)).

(B) The minimum number of parking spaces for retail facilities shall be one space per 350 square feet of net floor area. Each parking space shall be at least: 20 feet in length, ten feet wide, and have a vertical clearance of at least seven feet.

Findings of Fact:

1. The proposed use will be approximately 1,290 square feet in size.
2. A marijuana retail facility 1,290 square feet in size is required to provide four parking spaces with one ADA compliant space.
3. Six customer parking spaces are being provided.
4. Each space is at least 20 feet in length and ten feet wide.
5. There are no vertical clearance limitations on site.

Conclusion of Law: Based on the above findings, the modification to the use meets the minimum number of parking space for retail facilities (MSB 17.60.170(B)).

(C) Parking spaces shall be provided to comply with current Americans with Disabilities Act guidelines.

Findings of Fact:

1. A marijuana retail facility 1,290 square feet in size is required to provide four parking spaces with one ADA compliant space.
2. ADA guidelines require one van accessible parking space, 11 feet wide with a five-foot wide parking aisle, for every 1 to 25 spaces.
3. Six customer parking spaces will be provided.
4. According to the site plan, one van accessible parking space, at least 11 feet wide with a five-foot wide parking aisle is being provided.

Conclusion of Law: Based on the above findings, the modification to the use complies with current ADA parking space guidelines (MSB 17.60.170(C)).

STAFF RECOMMENDATIONS

Staff recommends approval of the request to modify conditional use permit 176020160006 to operate a Marijuana Retail Facility, 1,290 square feet in size, at 2301 South Knik-Goose Bay Road (Tax ID# 1005000L00W-1). The modification to the use still meets all of the standards in MSB 17.60.100, 17.60.150, and 17.60.170. Staff recommends condition four of Planning Commission Resolution 17-10 be changed to reflect the following:

4. The hours of operation shall not exceed 8:00 a.m. – 5:00 a.m., daily.

If the Planning Commission chooses to deny this modification, findings for denial must be prepared by the Commission.

Photos Taken by Joe Metzger, MSB Planner, During a December 2, 2020 Site Visit


GREEN DEGREE
OPEN


GREEN DEGREE
OPEN
RESERVED PARKING

GREEN DEGREE
OPEN

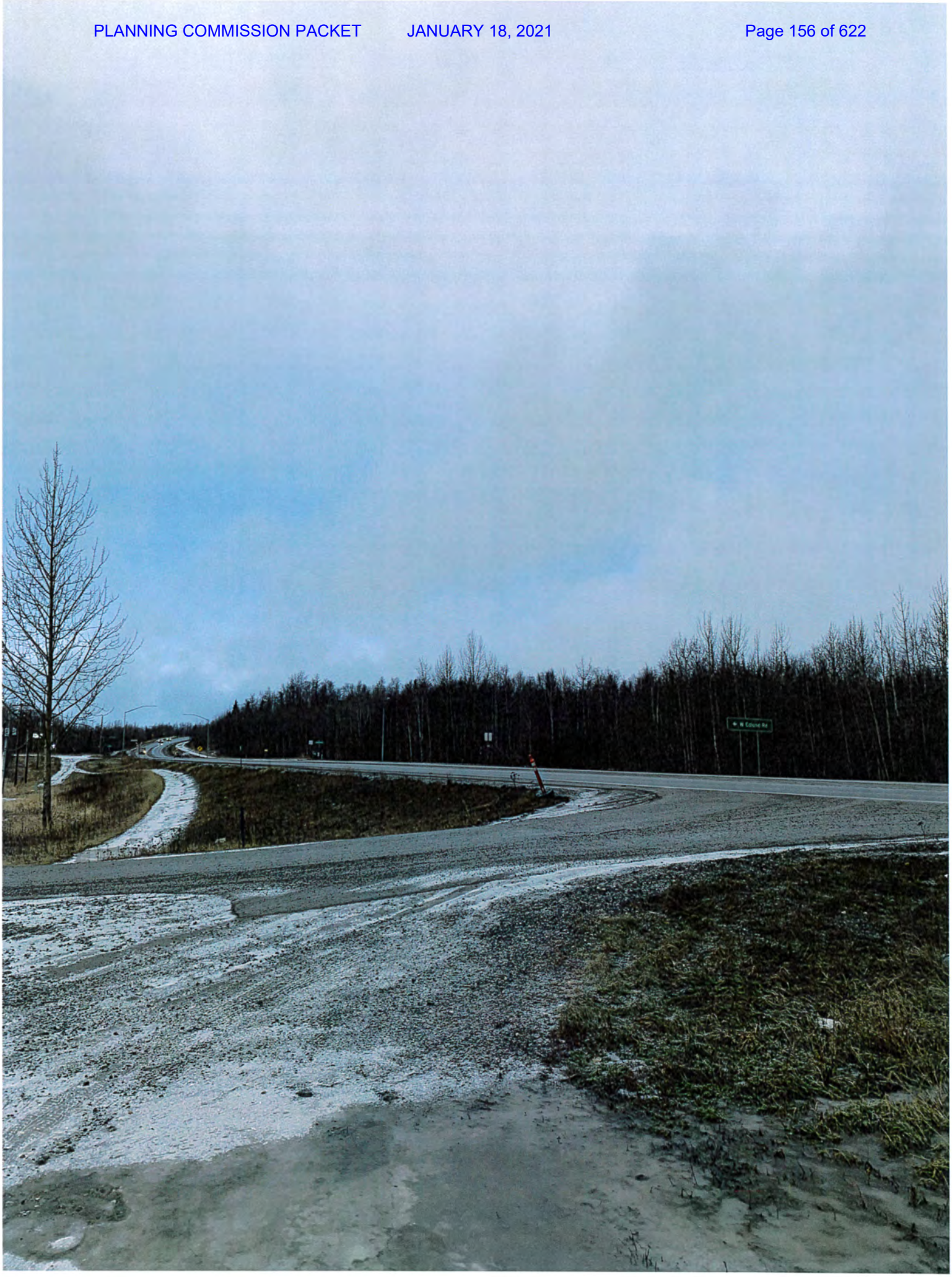




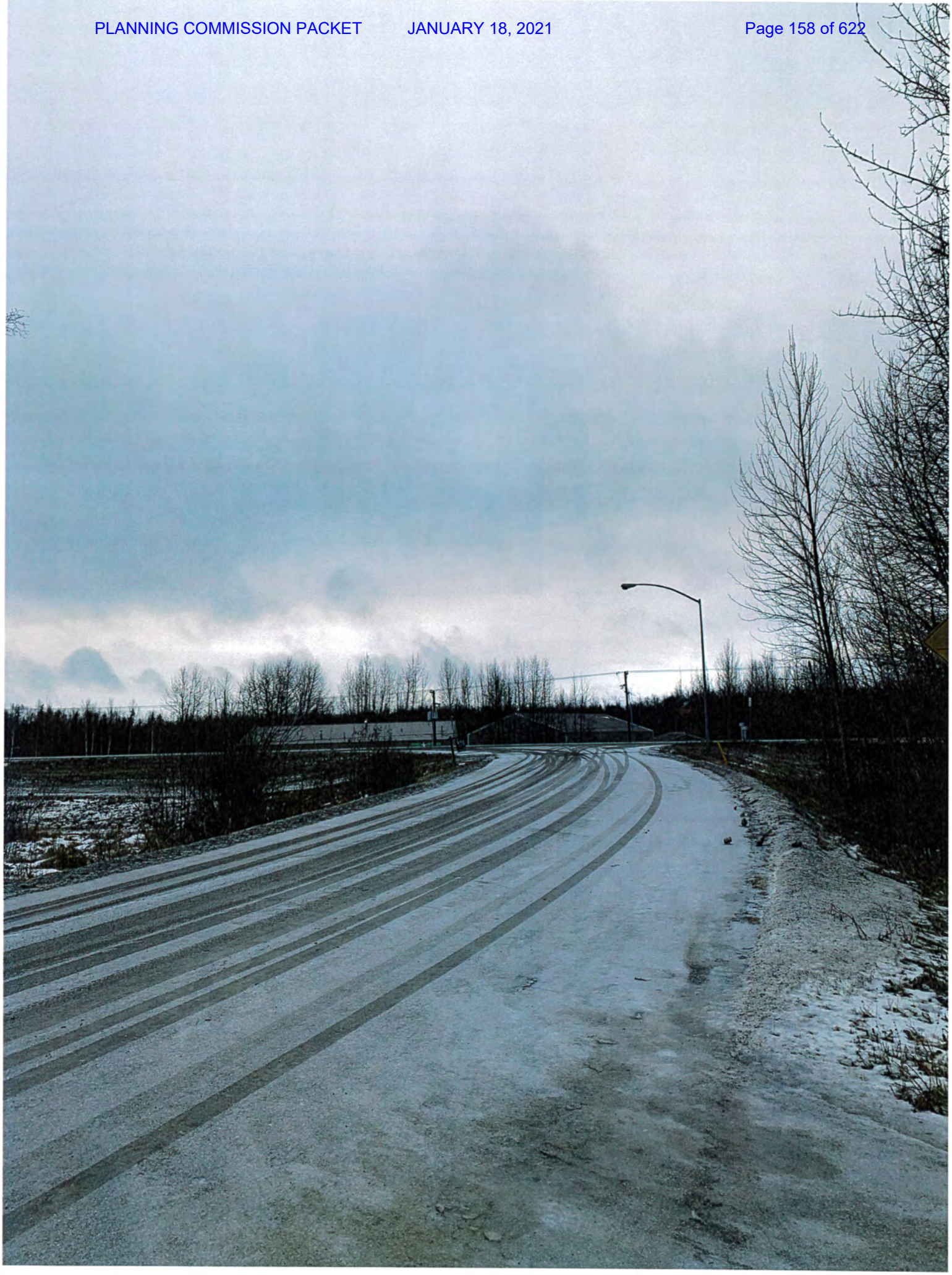













Mike's Alterations

Existing Planning Commission Resolution and Conditional Use Permit

By: Mark Whisenhunt
Introduced: March 6, 2017
Public Hearing: March 20, 2017
Action: Approved

MATANUSKA-SUSITNA BOROUGH
PLANNING COMMISSION RESOLUTION NO. 17-10

A RESOLUTION OF THE MATANUSKA-SUSITNA BOROUGH PLANNING COMMISSION APPROVING A CONDITIONAL USE PERMIT FOR THE OPERATION OF A MARIJUANA RETAIL FACILITY AT 2301 S. KNIK-GOOSE BAY ROAD, SUITE 1B, LOCATED WITHIN TOWNSHIP 17 NORTH, RANGE 1 WEST, SECTION 17; TAX ID# 1005000L00W-1, SEWARD MERIDIAN.

WHEREAS, an application has been received from Kerby Coman, dba Kerby's Corporation, dba Green Degree, for a conditional use permit for the operation of a marijuana retail facility at 2301 S. Knik-Goose Bay Road, Suite 1B, located within Township 17 North, Range 1 West, Section 17; Tax ID# 1005000L00W-1, Seward Meridian; and

WHEREAS, MSB 17.60.030(A)(4) requires a conditional use permit for the operation of a marijuana retail facility; and

WHEREAS, unless this type of use is maintained under and in accordance with a lawfully issued permit, marijuana retail facilities are declared to be a public nuisance; and

WHEREAS, the subject lot was developed for and has been used as commercial since 1984; and

WHEREAS, other than new signage, the subject structure has maintained the appearance and size since its original construction in 1984; and

WHEREAS, Knik-Goose Bay Road has several different uses on its frontage including commercial, industrial, and residential; and

WHEREAS, lots W-1 & W-2 share a common access onto Knik-Goose Bay Road. There are no other roads associated with this parcel; and

WHEREAS, the proposed conditional use operation is wholly contained within Suite 1B of a commercial building; and

WHEREAS, there is no industrial equipment or processes that generate noise associated with the proposed use; and

WHEREAS, there are no outdoor speakers or public announcement systems associated with the proposed use; and

WHEREAS, according to the application material, loitering will not be allowed; helping to ensure noise and odor will not be an issue; and

WHEREAS, the closest school (Snowshoe Elementary) is approximately 8,000 feet away from the proposed use; and

WHEREAS, consumption of marijuana is prohibited at the site; and

WHEREAS, Knik-Goose Bay Road is classified as a Major Collector, which is capable of accommodating traffic generated by several commercial retail businesses; and

WHEREAS, persons under the age of 21 are prohibited from entering the proposed marijuana retail facility; and

WHEREAS, according to the application material, the proposed use has a robust security plan in place; and

WHEREAS, the daily trip rate for a marijuana retail facility is estimated to be 199.69 to 252.58 per 1,000 square feet of the commercial facility; and

WHEREAS, the daily trip rate for the proposed 619 square foot marijuana retail facility is estimated to 124 to 157 vehicles per day; and

WHEREAS, the peak hour trip rate is estimated to be 13 to 16 vehicles, which is approximately 10 percent of the total daily trip rate; and

WHEREAS, after proper notification of the State of Alaska Alcohol & Marijuana Control Office; all marijuana products deemed unusable will be mixed into compostable soils, sealed in a container, and disposed of at the Borough landfill; and

WHEREAS, the existing structure meets all applicable setback requirements required by MSB 17.55 - Setbacks and Screening Easements; and

WHEREAS, the Matanuska-Susitna Borough Fire Code Official has issued a Certificate of Occupancy for 2301 S. Knik-Goose Bay Road, Suite 1B; and

WHEREAS, all of the required site plans and operational information have been provided by the applicant; and

WHEREAS, according to the application material, all marijuana will be stored in sealed containers; and

WHEREAS, the subject location has been used for commercial retail for approximately 33 years; and

WHEREAS, according to the State of Alaska Alcohol & Marijuana Control Office, Green Degree has a complete application for its proposed marijuana retail facility; and

WHEREAS, Green Degree's request for State License #11031 will be heard by the State of Alaska Marijuana Control Board on April 5, 2017; and

WHEREAS, the proposed use is 619 square feet in size, and as such, a minimum of two parking spaces shall be provided; and

WHEREAS, according to the site plan, 6 customer parking spaces will be provided in a shared parking lot; and

WHEREAS, according to the site plan, each space will be 20 feet in length and ten feet wide; and

WHEREAS, ADA guidelines require one van accessible parking space with an eight foot wide parking isle, for every 1 to 25 spaces; and

WHEREAS, the Planning Commission has reviewed this application with respect to standards set forth in MSB 17.60.100, 17.60.150 and 17.60.170; and

WHEREAS, the Planning Commission conducted a public hearing on March 20, 2017 on this matter.

NOW, THEREFORE, BE IT RESOLVED, that the Matanuska-Susitna Borough Planning Commission hereby adopts the aforementioned findings of fact and makes the following conclusions of law supporting approval of Planning Commission Resolution 17-10:

1. The use will not exceed sound levels set forth in MSB 17.61.080 and noise levels exceeding the levels in MSB 17.61.080 are prohibited. As such, a Core Area Conditional Use Permit is not required under this standard (MSB 17.61.020(A)(1)).
2. Since the use will not exceed 100 vehicles during the morning or afternoon peak hours or more than 750 vehicles a day, as specified in MSB 17.61.090, Traffic Standards, a Core Area Conditional Use Permit is not required under this standard (MSB 17.61.020(A)(2)).
3. Since the proposed use will not be processing, manufacturing, or storing hazardous substances beyond the thresholds identified in MSB 17.61.020(A)(3), a Core Area Conditional Use Permit is not required under this standard (MSB 17.61.020(A)(3)).
4. The proposed use will not generate contaminated water runoff or other discharges that are likely to violate state water quality standards or negatively impact groundwater or surface water quality beyond adjacent property lines. As such, a Core Area Conditional Use

Permit is not required under this standard (MSB 17.61.020(A)(4)).

5. The proposed use, with conditions, will not detract from the value, character and integrity of the surrounding area (MSB 17.60.100(B)(1)).
6. The proposed use will not be harmful to the public health, safety, convenience and welfare (MSB 17.60.100(B)(2)).
7. Sufficient setbacks, lot area, buffers or other safeguards are being provided (MSB 17.60.100(B)(3)).
8. The applicant has met all of the requirements of this chapter (MSB 17.60.100(B)(4)).
9. The proposed use will not negatively affect other properties due to factors such as noise and odor (MSB 17.60.150(A)(1)).
10. Measures are in place to reduce negative affects upon adjacent properties (MSB 17.60.150(A)(2)(a-c)).
11. The proposed use is compatible with the character of the surrounding area (MSB 17.60.150(A)(3)).
12. The proposed use is more than 1,000 feet away from any school grounds (MSB 17.60.150(B)(1)).
13. All applicable licenses shall be obtained as required by 3 AAC 306.005, prior to operating this marijuana retail facility (MSB 17.60150(D)(1)).

14. The proposed use is in full compliance with all applicable fire code (MSB 17.60.150(D)(2)).
15. The proposed use is located on a parcel that is appropriate for commercial use (MSB 17.60.170(A)(1-3)).
16. The proposed use meets the minimum number of parking space for retail facilities (MSB 17.60.170(B)).
17. The proposed use complies with current ADA parking space guidelines (MSB 17.60.170(C)).

NOW, THEREFORE, BE IT FURTHER RESOLVED, that the Planning Commission finds this application does meet the standards of MSB 17.60 and does hereby approve the conditional use permit for the operation of a marijuana retail facility, with the following conditions:

1. The owner and/or operator shall comply with all applicable state and local regulations.
2. All aspects of the operation shall comply with the description detailed in the application material and with the conditions of this permit; and an amendment to the Conditional Use Permit shall be required prior to any expansion of the conditional use.
3. The operation shall comply with the maximum permissible sound level limits allowed, per the requirements of MSB 8.52 - Noise, Amplified Sound and Vibration.

4. The hours of operation shall not exceed 11:00 a.m. – 11:00 p.m. Monday through Saturday.

5. All applicable licenses shall be obtained through the State of Alaska Marijuana Control Board as required by 3 AAC 306.005, and a copy of the licenses shall be provided to the MSB Development Services Division, prior to operating the marijuana product vending room, and prior to selling any marijuana products associated with this marijuana retail facility.

6. Borough staff shall be permitted to enter premises subject to this permit to monitor compliance with permit requirements. Such access will at minimum, be allowed on demand when activity is occurring, and/or with prior verbal or written notice, and/or at other times as necessary to monitor compliance. Denial of access to Borough staff shall be a violation of this Conditional Use Permit.

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ADOPTED by the Matanuska-Susitna Borough Planning Commission this 20th day of March, 2017.

COLLEEN VAGUE, Chair

ATTEST

MARY BRODIGAN, Planning Clerk

(SEAL)

PASSED UNANIMOUSLY: Vague, Anderson, Healy, Chesbro, Glashan, and Rauchenstein

MATANUSKA-SUSITNA BOROUGH

Planning and Land Use Department
350 East Dahlia Avenue • Palmer, AK 99645
Phone (907) 861-7833 • Fax (907) 861-8158
Email: planning@matsugov.us

CONDITIONAL USE PERMIT FOR A MARIJUANA RETAIL FACILITY

PERMIT#: 176020170003

ACTION: In accordance with provisions in Matanuska-Susitna Borough Code 17.60, a Conditional Use Permit for a Marijuana Retail Facility is hereby approved as referenced within this document. This permit is for the operation of a Marijuana Retail Facility known as Green Degree on the permitted site noted below. This decision is based on the findings of fact and conclusions of law contained within MSB Planning Commission Resolution No. 17-10, dated March 20, 2017.

EFFECTIVE DATE: March 20, 2017

PERMITTED SITE: 2301 S. Knik-Goose Bay Road, Suite 1B
Tax ID# 1005000L00W-1

PERMITTEE Kerby Coman, dba Green Degree
4426 E. Curtis Drive
Wasilla, AK 99654

PROPERTY OWNER: Andrea E. Kretschek
189 E. Nelson Ave. #265
Wasilla, AK 99654

General Requirements and Conditions:
All development and use of the permitted site shall occur as described in the approved application submitted and as further specified by the conditions listed herein. Any variation from the requirements or conditions of this permit, or from borough code, may be grounds for penalties as authorized by borough code.

Specific conditions of the permit for the operation of a marijuana retail facility:

1. The owner and/or operator shall comply with all applicable state and local regulations.

2. All aspects of the operation shall comply with the description detailed in the application material and with the conditions of this permit; and an amendment to the Conditional Use Permit shall be required prior to any expansion of the conditional use.

3. The operation shall comply with the maximum permissible sound level limits allowed, per the requirements of MSB 8.52 – Noise, Amplified Sound and Vibration.

4. The hours of operation shall not exceed 11:00 a.m. – 11:00 p.m., Monday through Saturday.

5. All applicable licenses shall be obtained through the State of Alaska Marijuana Control Board as required by 3 AAC 306.005 and a copy of the licenses shall be provided to the MSB Development Services Division, prior to operating the marijuana product vending room, and prior to selling any marijuana products associated with this marijuana retail facility.

6. Borough staff shall be permitted to enter premises subject to this permit to monitor compliance with permit requirements. Such access will at minimum, be allowed on demand when activity is occurring, and/or with prior verbal or written notice, and/or at other times as necessary to monitor compliance. Denial of access to Borough staff shall be a violation of this Conditional Use Permit.

The decision may be appealed within 21 days of the date of approval by the Planning Commission in accordance with MSB 15.39 – Board of Adjustment and Appeals.

Eileen Probasco, Director
Planning & Land Use Department

March 20, 2017
Date of Issuance

Frontiersman
Growing with the Valley since 1947.

5751 E. MAYFLOWER CT.
Wasilla, AK 99654

(907) 352-2250 ph
(907) 352-2277 fax

AFFIDAVIT OF PUBLICATION

UNITED STATES OF AMERICA, STATE OF ALASKA, THIRD DIVISION

BEFORE ME, THE UNDERSIGNED, A NOTARY PUBLIC, THIS DAY

PERSONALLY APPEARED BEFORE **BENJAMIN BORG** WHO, BEING

FIRST DULY SWORN, ACCORDING TO LAW, SAYS THAT HE IS THE

LEGAL AD CLERK OF THE **FRONTIERSMAN**

PUBLISHED AT WASILLA AND CIRCULATED THROUGH OUT MATANUSKA

SUSITNA BOROUGH, IN SAID DIVISION THREE AND STATE OF ALASKA

AND THAT THE ADVERTISEMENT, OF WHICH THE ANNEXED IS A TRUE

COPY, WAS PUBLISHED ON THE FOLLOWING DAYS:

11/06/2020

AND THAT THE RATE CHARGED THEREIN IS NOT IN EXCESS OF

THE RATE CHARGED PRIVATE INDIVIDUALS.

SUBSCRIBED AND SWORN TO BEFORE ME
THIS 6th DAY OF November, 2020.

NOTARY PUBLIC FOR STATE OF ALASKA

NOTARY PUBLIC
NANCY E DOWNS
STATE OF ALASKA
MY COMMISSION EXPIRES AUG. 25, 2023

MAT-SU BOROUGH/PAGE
11.6
ACCOUNT NUMBER 405249



PUBLIC HEARING

The Matanuska-Susitna Borough Planning Commission will conduct a public hearing concerning the following application for a modification to an existing conditional use permit on Monday, ***December 21, 2020,*** at 6:00 p.m. in the Borough Assembly Chambers located at 350 E. Dahlia Avenue in Palmer. This may be the only presentation of this item before the Planning Commission and you are invited to attend.

****Please Note: Due to the ongoing Coronavirus/COVID-19 Pandemic, the method in which this meeting is being conducted may change. If a change to the meeting is necessary, it will be posted on the Borough Website. The public is encouraged to check the Borough Website prior to attending the public hearing for any changes to the meeting schedule or method.***

An application for a modification to an existing conditional use permit under MSB 17.60 – Conditional Uses, has been submitted by Kerby Coman, on behalf of Green Degree for the operation of a marijuana retail facility at 2301 S. Knik Goose Bay Road, (Tax ID# 1005000L00W-1); within Township 17 North, Range 1 West, Section 17, Seward Meridian. The request is asking to expand the size of the marijuana retail facility.

Application material may be viewed online at www.matsugov.us by clicking on "All Public Notices & Announcements." Application material may also be viewed at the Borough Permit Center. For additional information, you may contact Joe Metzger, Planner II, at 861-7862.

The public may provide verbal testimony in person at the meeting or telephonically by calling 1-855-290-3803. You will hear "Joining conference" when you are admitted to the meeting. You will be automatically muted and able to listen to the meeting. When the Chair announces audience participation or a public hearing you would like to speak to, press *3; you will hear, "Your hand has been raised." When it is your turn to testify, you will hear, "Your line has been unmuted." State your name for the record, spell your last name, and provide your testimony. You have 3 minutes to state your concerns & comments. Written comments can be mailed to: MSB Development Services Division, 350 E. Dahlia Avenue, Palmer, AK 99645. You may e-mail comments to joseph.metzger@matsugov.us. In order to be eligible to file an appeal from a decision of the Planning Commission, a person must be designated an "interested party." See MSB 15.39.010 for the definition of "interested party." The procedures governing appeals to the Board of Adjustment and Appeals are contained in MSB 15.39.010-250, which is available on the Borough home page: www.matsugov.us, in the Borough Clerk's office, and at various libraries within the borough.

Written comments are due on or before ***December 2, 2020*** and will be included in the Planning Commission packet for the Commissioner's review and information. Please be advised that comments received from the public after that date will not be included in the staff report, but will be provided to the Commission at the meeting.

The Planning Commission members may submit questions to the Planning Commission Clerk concerning the matter or request for more information from the applicant at the time of introduction. All questions and requests submitted by the Commission shall be in writing and copies will be provided to the applicant and made available to all interested parties and the public upon request. Answers to questions and additional material requests will be addressed in the staff report for the public hearing. Planning Commission members may not receive or engage in ex-parte contact with the applicant, other interested parties in the application, or members of the public concerning the application or issues presented in the application.

Publish Date: November 6, 2020 11-04-20

PUBLIC HEARING

The Matanuska-Susitna Borough Planning Commission will conduct a public hearing concerning the following application for a modification to an existing conditional use permit on Monday, ***December 21, 2020***, at 6:00 p.m. in the Borough Assembly Chambers located at 350 E. Dahlia Avenue in Palmer. This may be the only presentation of this item before the Planning Commission and you are invited to attend.

Please Note: Due to the ongoing Coronavirus/COVID-19 Pandemic, the method in which this meeting is being conducted may change. If a change to the meeting is necessary, it will be posted on the Borough Website. The public is encouraged to check the Borough Website prior to attending the public hearing for any changes to the meeting schedule or method.

An application for a modification to an existing conditional use permit under MSB 17.60 – Conditional Uses, has been submitted by Kerby Coman, on behalf of Green Degree for the operation of a marijuana retail facility at 2301 S. Knik Goose Bay Road, (Tax ID# 1005000L00W-1); within Township 17 North, Range 1 West, Section 17, Seward Meridian. The request is asking to expand the size of the marijuana retail facility.

Application material may be viewed online at www.matsugov.us by clicking on "All Public Notices & Announcements." Application material may also be viewed at the Borough Permit Center. For additional information, you may contact Joe Metzger, Planner II, at 861-7862.

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The Planning Commission members may submit questions to the Planning Commission Clerk concerning the matter or request for more information from the applicant at the time of introduction. All questions and requests submitted by the Commission shall be in writing and copies will be provided to the applicant and made available to all interested parties and the public upon request. Answers to questions and additional material requests will be addressed in the staff report for the public hearing. Planning Commission members may not receive or engage in ex-parte contact with the applicant, other interested parties in the application, or members of the public concerning the application or issues presented in the application.

Green Degree (KGB) Marijuana Retail Facility –Conditional Use Permit (Modification)

An application for a modification to an existing conditional use permit under MSB 17.60 – Conditional Uses, has been submitted for the operation of a marijuana retail facility. The request is asking to expand the size of the marijuana retail facility and the hours of operation.

Location: The proposed use is located at 2301 S. Knik Goose Bay Road (Tax ID# 1005000L00W-1); within Township 17 North, Range 1 West, Section 17, Seward Meridian.

Applicant: Kerby Coman, on behalf of Green Degree

Public Hearing: The Planning Commission will conduct a public hearing concerning the application for a conditional use permit on Monday, ***December 21, 2020****, at 6:00 p.m. in the Borough Assembly Chambers located at 350 E. Dahlia Avenue in Palmer. This may be the only presentation of this item before the Planning Commission and you are invited to attend.

Please Note: Due to the ongoing Coronavirus/COVID-19 Pandemic, the method in which this meeting is being conducted may change. If a change to the meeting is necessary, it will be posted on the Borough Website. The public is encouraged to check the Borough Website prior to attending the public hearing for any changes to the meeting schedule or method.

The application material may also be viewed at the Borough Permit Center. If you have questions or want to submit comments, please contact Joe Metzger at 861-7862 or mail to MSB Development Services Division, 350 E. Dahlia Avenue, Palmer, AK 99645, or email: joseph.metzger@matsugov.us

The public may provide verbal testimony in person at the meeting or telephonically by calling 1-855-290-3803. You will hear "Joining conference" when you are admitted to the meeting. You will be automatically muted and able to listen to the meeting. When the Chair announces audience participation or a public hearing you would like to speak to, press *3; you will hear, "Your hand has been raised." When it is your turn to testify, you will hear, "Your line has been unmuted." State your name for the record, spell your last name, and provide your testimony. You have 3 minutes to state your concerns & comments. Written comments can be mailed to: MSB Development Services Division, 350 E. Dahlia Avenue, Palmer, AK 99645. You may e-mail comments to joseph.metzger@matsugov.us. In order to be eligible to file an appeal from a decision of the Planning Commission, a person must be designated an "interested party." See MSB 15.39.010 for the definition of "interested party." The procedures governing appeals to the Board of Adjustment and Appeals are contained in MSB 15.39.010-250, which is available on the Borough home page: www.matsugov.us, in the Borough

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See Reverse for Instructions

Joe M - Dev Services

217N01W20A010 1
ADLIB HOLDINGS LLC
2030 W ADSON RD
WASILLA AK 99654

56879000T00F-1 2
BAKER LESLIE ANN ITF
BAKER THOS K & NICHOLAS H & KAITLYN
%LESTER BAKER
2180 S ENDEAVOR ST
WASILLA AK 99654-8718

57154000L002 3
COY DAVID SIDNEY & DORIS MAY
1600 W EDLUND RD
WASILLA AK 99654

217N01W20A008 4
DUNCAN HENRY & DARLENE
2500 FORRESTBROOK DR
KANNAPOLIS, NC 28083

54822000L007 5
DUNN BONNIE
DUNN ALLISON & SAPUTSKI DANIEL
STE B PMB 208
2521 MOUNTAIN VILLAGE DR
WASILLA AK 99654

56879000T00G-2 6
ELGEE KIM L
PO BOX 872242
WASILLA AK 99687

54822000L009 7
HANSEN RODNEY A & ANDREA J
1590 W MINNETONKA DR
WASILLA, AK 99654

54822000L010 8
IMPERIAL ASSOCIATES LTD
3737 MANOA RD
HONOLULU, HI 96822

57154000L001 9
JAKA INC
PO BOX 874486
WASILLA AK 99687

217N01W17D005 10
KENISON MARY ANN
5209 N HONDO DR
PRESCOTT VALLEY AZ 86314

51005000L00W-1 11
KRETSCHEK ANDREA E
%SIGNATURE - CAROLYN
1174 N LEATHERLEAF LOOP STE B
WASILLA AK 99654

54822000L008 12
MATANUSKA TELEPHONE ASSN
PO BOX 3550
PALMER, AK 99645-3550

57929000T00A 13
RENIDEO CHARLIE B
RENIDEO DELISA MARIE
5010 W LAKESIDE DR
WASILLA AK 99623-9274

217N01W20A007 14
ROTACH DOUGLAS
STE B
2521 E MOUNTAIN VILLAGE DR
WASILLA AK 99654-7377

51628B03L017 15
TEICH CRAIG A& ROSE MARIE
PO BOX 874684
WASILLA, AK 99687-4684

57655000T00A 16
WASILLA CHRISTIAN CHURCH
2201 S KNIK GOOSE BAY RD
WASILLA AK 99654-0469

51222000T00C 17
WINDWARD TOWN&CNTRY PLAZA
SECURITY DEVICES OF HI
3737 MANOA RD
HONOLULU, HI 96822

18
KNIK FAIRVIEW COMMUNITY COUNCIL
PO BOX 877291
WASILLA, AK 99687

19
CITY OF WASILLA
290 E HERNING AVE
WASILLA, AK 99654-7091

tara0609
19
11/5/2020 11:11:13 AM

Matanuska-Susitna Borough
Development Services Division
350 E. Dahlia Avenue
Palmer, Alaska 99645

tara0609
19
11/5/2020 11:11:13 AM

The Planning Commission of the Matanuska-Susitna Borough will consider the following:

Application:	Modification to an existing Conditional Use Permit for a marijuana retail facility
MSB Code Section:	MSB 17.60 – Conditional Uses
Applicant:	Kerby Coman, on behalf of Green Degree
Location:	2301 S. Knik Goose Bay Road (Tax ID# 1005000L00W-1); within Township 17 North, Range 1 West, Section 17, Seward Meridian
Request:	An application for a modification to an existing conditional use permit under MSB 17.60 – Conditional Uses, has been submitted for the operation of a marijuana retail facility. The request is asking to expand the size of the marijuana retail facility.

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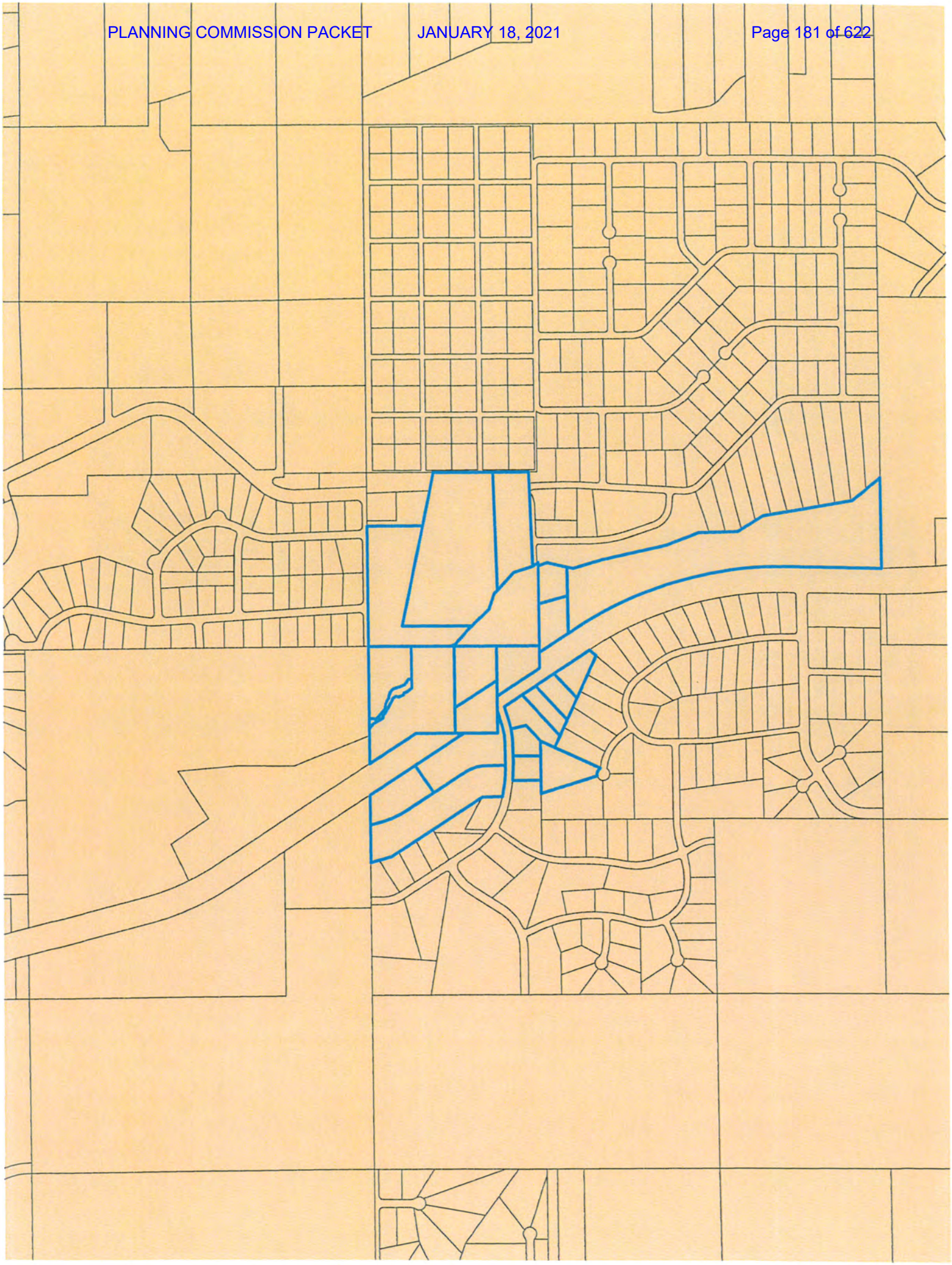
Name:_____ ***Mailing Address:***_____

Location/Legal Description of your property:_____

Comments:_____

_____

Note: Vicinity Map Located on Reverse Side



217N01W20A010 1
ADLIB HOLDINGS LLC
2030 W ADSON RD
WASILLA AK 99654

56879000T00F-1 2
BAKER LESLIE ANN ITF
BAKER THOS K & NICHOLAS H & KAITLYN
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CITY OF WASILLA
290 E HERNING AVE
WASILLA, AK 99654-7091

tara0609
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11/5/2020 11:11:13 AM

Joseph Metzger

From: Joseph Metzger
Sent: Friday, November 6, 2020 1:19 PM
To: 'allen.kemplen@alaska.gov'; 'tucker.hurn@alaska.gov'; 'melanie.nichols@alaska.gov'; 'kyler.hylton@alaska.gov'; 'sarah.wilber@alaska.gov'; 'mearow@matanuska.com'; 'rglenn@mta-telco.com'; 'jthompson@mta-telco.com'; 'row@enstarnaturalgas.com'; 'ospdesign@gci.com'; Eric Phillips; Jude Bilafer; Cindy Corey; Terry Dolan; Jim Jenson; Jamie Taylor; Nicole Wilkins; Karol Riese; Taunnie Boothby; Theresa Taranto; John Aschenbrenner; John Aschenbrenner; Jill Irsik; Michelle Wagner; Cheryl Scott; Brad Sworts; George McKee; 'billydoc56@hotmail.com'; 'pcook@alaskan.com'; 'uprise@mtaonline.net'
Subject: RFC-Green Degree (KGB) - Due December 2

MEMORANDUM

Date:	November 6, 2020
To:	Various Governmental Agencies
From:	Joe Metzger, MSB Planner
Subject:	Request for Review and Comments Governmental Agencies
Project:	Modification of an existing Conditional Use Permit for a marijuana retail facility
Location:	2301 S. Knik Goose Bay Road (Tax ID# 1005000L00W-1); within Township 17 North, Range 1 West, Section 17, Seward Meridian
Applicant:	Kerby Coman, on behalf of Green Degree (KGB)

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MATANUSKA-SUSITNA BOROUGH

Planning and Land Use Department
Development Services Division
350 East Dahlia Avenue • Palmer, AK 99645
Phone (907) 861-7822 • Fax (907) 861-8158
www.matsugov.us

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MATANUSKA-SUSITNA BOROUGH
DIRECTORY OF ORGANIZATIONS

Community Council - Knik-Fairview

Board Expiration

Knik-Fairview Commun

Company Representing

PO Box 877291

Wasilla AK 99687

Home Work Cell E-mail

Board Position: Correspondence - Knik CC

Term to

Type of Term

Member Title

Johnson William

Company Representing

10601 W Togowoods Dr

Wasilla AK 99623

Home (907) 376-7056 Work (907) 232-6466 Cell E-mail tundraquest@mtaonline.net

Board Position: Member 1 - Knik CC

Term to

Type of Term

Member Title: Treasurer

Weller Nicole

Company Representing

PO Box 879378

Wasilla AK 99687

Home Work Cell (907) 902-5006 E-mail nicoleweller8191987@gmail.com

Board Position: Member 2 - Knik CC

Term to

Type of Term

Member Title: Board Member

Kendig William (Bill)

Company Representing

PO Box 873785

Wasilla AK 99687

Home (907) 841-8291 Work (907) 841-8291 Cell E-mail billydoc56@hotmail.com

Board Position: Member 3 - Knik CC

Term to

Type of Term

Member Title: President

Tilton Berkley H.

Company Representing

PO Box 870948

Wasilla AK 99687

Home Work (907) 376-2697 Cell (907) 376-7966 E-mail cci1@wwdb.org

Board Position: Member 4 - Knik CC

Term to

Type of Term

Member Title: Board Member

MATANUSKA-SUSITNA BOROUGH
DIRECTORY OF ORGANIZATIONS

Community Council - Knik-Fairview

Board Expiration

Cook | Patrick | | **Board Position** Member 5 - Knik CC

Company Representing | **Term** to

2600 S Hatcher Pass St | **Type of Term**

Wasilla | AK | 99654 | **Member Title** Vice President

Home (907) 373-1989 **Work** | **Cell** | **E-mail** pcook@alaskan.com

---

Ritacco | Gina | | **Board Position** Member 6 - Knik CC

Company Representing | **Term** to

2521 E Mountain Village Dr Suite B #543 | **Type of Term**

Wasilla | AK | 99654 | **Member Title** Board Member

Home | **Work** | **Cell** (630) 901-2338 **E-mail** gina@ritaccos.com

---

Johnson | Teri | | **Board Position** Member 7 - Knik CC

Company Representing | **Term** to

10601 W Togowoods Dr | **Type of Term**

Wasilla | AK | 99623 | **Member Title** Secretary

Home (907) 376-7056 **Work** (907) 232-6866 **Cell** | **E-mail** uprise@mtaonline.net

---

Information Contact

Total Board Members

Meeting Schedule See Board Notes. (Please check the Notice of Public Meetings schedule at: www.matsugov.us/publicmeetings for meeting information.)

Meeting Location Knik Public Safety Building Station 6-2

Board Notes General membership meetings held 1st Wednesday of Feb., May, Aug and Nov. at 7 p.m.; Board meetings held 3rd Wednesday of each month (except December) at 6:30 p.m.; Annual meeting November. Website: www.geocities.com/knikfairviewcc

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paid by Permit Impri
PostalOne!® Transaction Number here: _____

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Total Number of Pounds	Total Postage Paid for Mailpieces	Fee Paid
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Mailed For	Mailed By
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PS Form **3606-D,** January 2016 PSN 7530-17-000-5548

See Reverse for Instructions

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Development Services Division
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The public hearing for the Conditional Use Permit modification request detailed above and originally scheduled to be held December 21, 2020, was postponed.

The **new public hearing date for this request is January 18, 2021** at 6:00 p.m. in the Borough Assembly Chambers located at 350 E. Dahlia Avenue in Palmer. This may be the only presentation of this item before the Planning Commission and you are invited to attend.

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Note: Vicinity Map Located on Reverse Side

59997000U0279 1
ALASKA WIRELESS NETWORK LLC
JACOBSON LAKE SITE
STE 1000
2550 DENALI ST
ANCHORAGE AK 99503

56774B01L008 2
BRESHEARS DAVID & JANE
3383 W COGHLAN CIR
WASILLA AK 99623-4219

52533B01L001 3
CHURCH ON THE ROCK
PO BOX 874693
WASILLA, AK 99687-4693

56774B01L003 4
FRITZLER CARL MARK
2301 S ALTHEA ST
WASILLA, AK 99654

52420B02L001 5
GREEN LAND GROUP LLC
TOWER SEAN
5800 W LOCKSLEY LOOP
WASILLA AK 99623

217N01W07B011 6
LUNDGREN GARY
%CASTLE PROPERTIES INC
PO BOX 3517
REDMOND WA 98073-3517

57267B01L001A 7
MCCALLISTER INVEST GROUP LLC
1500 BOGARD RD
WASILLA AK 99654

51633B01L001 8
MIELKE ANNA M
% ANNA ROWE
PO BOX 520856
BIG LAKE AK 99652

56774B01L009 9
MORRIS CHARLES W & LAUREL M
751 REEVE CIR
WASILLA AK 99654

52420B01L005 10
MUZECHUK ANATOLY
3401 W MACHEN RD
WASILLA AK 99623-4139

51633B01L006 11
NORTHLAND HOMES LLC
2155 N BILTMORE CT
WASILLA AK 99654

51633B01L007 12
PACIFIC RIDGE HOMES LLC
PO BOX 875787
WASILLA AK 99687-5787

51633B01L008 13
PIELORZ MICHAEL F
PO BOX 873148
WASILLA AK 99687-3148

52420B02L002 14
PIELORZ MICHAEL FRANK
PO BOX 873148
WASILLA AK 99687-3148

56774B01L006 15
SLEEK LLC
PO BOX 877777
WASILLA AK 99687

59997000U0497 16
VERTICAL BRIDGE S3 ASSETS LLC
% RYAN PTS DEPT 850
PO BOX 460169
HOUSTON TX 77056

56774B01L002 17
YUNDT PROPERTIES LLC
#200
357 E PARKS HWY
WASILLA AK 99654

18
CITY OF WASILLA
290 E HERNING AVE
WASILLA, AK 99654-7091

19
MEADOW LAKES COMMUNITY COUNCIL
1210 N KIM DR, SUITE B
WASILLA, AK 99623-1921

tara0609
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11/5/2020 8:57:21 AM

Green Degree (KGB) Marijuana Retail Facility –Conditional Use Permit (Modification)

An application for a modification to an existing conditional use permit under MSB 17.60 – Conditional Uses, has been submitted for the operation of a marijuana retail facility. The request is asking to expand the size of the marijuana retail facility and the hours of operation.

Location: The proposed use is located at 2301 S. Knik Goose Bay Road, Suite 1B (Tax ID# 1005000L00W-1); within Township 17 North, Range 1 West, Section 17, Seward Meridian.

Applicant: Kerby Coman, on behalf of Green Degree

The Public Hearing for the Conditional Use Permit modification request detailed above and originally scheduled for December 21, 2020, was postponed.

The **new public hearing date for this request is *January 18, 2021*** at 6:00 p.m. in the Borough Assembly Chambers located at 350 E. Dahlia Avenue in Palmer. This may be the only presentation of this item before the Planning Commission and you are invited to attend.

Please Note: Due to the ongoing Coronavirus/COVID-19 Pandemic, the method in which this meeting is being conducted may change. If a change to the meeting is necessary, it will be posted on the Borough Website. The public is encouraged to check the Borough Website prior to attending the public hearing for any changes to the meeting schedule or method.

The application material may also be viewed at the Borough Permit Center. If you have questions or want to submit comments, please contact Joe Metzger at 861-7862 or mail to MSB Development Services Division, 350 E. Dahlia Avenue, Palmer, AK 99645, or email: joseph.metzger@matsugov.us

The public may provide verbal testimony in person at the meeting or telephonically by calling 1-855-290-3803. You will hear "Joining conference" when you are admitted to the meeting. You will be automatically muted and able to listen to the meeting. When the Chair announces audience participation or a public hearing you would like to speak to, press *3; you will hear, "Your hand has been raised." When it is your turn to testify, you will hear, "Your line has been unmuted." State your name for the record, spell your last name, and provide your testimony. You have 3 minutes to state your concerns & comments. In order to be eligible to file an appeal from a decision of the Planning Commission, a person must be designated an "interested party." See MSB 15.39.010 for the definition of "interested party." The procedures governing appeals to the Board of Adjustment and Appeals are contained in MSB 15.39.010-250, which is available on the Borough home page: www.matsugov.us, in the Borough

The Planning Commission members may submit questions to the Planning Commission Clerk concerning the matter or request for more information from the applicant at the time of introduction. All questions and requests submitted by the Commission shall be in writing and copies will be provided to the applicant and made available to all interested parties and the public upon request. Answers to questions and additional material requests will be addressed in the staff report for the public hearing. Planning Commission members may not receive or engage in ex-parte contact with the applicant, other interested parties in the application, or members of the public concerning the application or issues presented in the application.

PUBLIC HEARING

The public hearing for the Conditional Use Permit modification request detailed below and originally scheduled to be held December 21, 2020, was postponed.

The **new public hearing date for this request is January 18, 2021** at 6:00 p.m. in the Borough Assembly Chambers located at 350 E. Dahlia Avenue in Palmer. This may be the only presentation of this item before the Planning Commission and you are invited to attend.

Please Note: Due to the ongoing Coronavirus/COVID-19 Pandemic, the method in which this meeting is being conducted may change. If a change to the meeting is necessary, it will be posted on the Borough Website. The public is encouraged to check the Borough Website prior to attending the public hearing for any changes to the meeting schedule or method.

An application for a modification to an existing conditional use permit under MSB 17.60 – Conditional Uses, has been submitted by Kerby Coman, on behalf of Green Degree for the operation of a marijuana retail facility at 2301 S. Knik Goose Bay Road, Suite 1B (Tax ID# 1005000L00W-1); within Township 17 North, Range 1 West, Section 17, Seward Meridian. The request is asking to expand the size of the marijuana retail facility and the hours of operation.

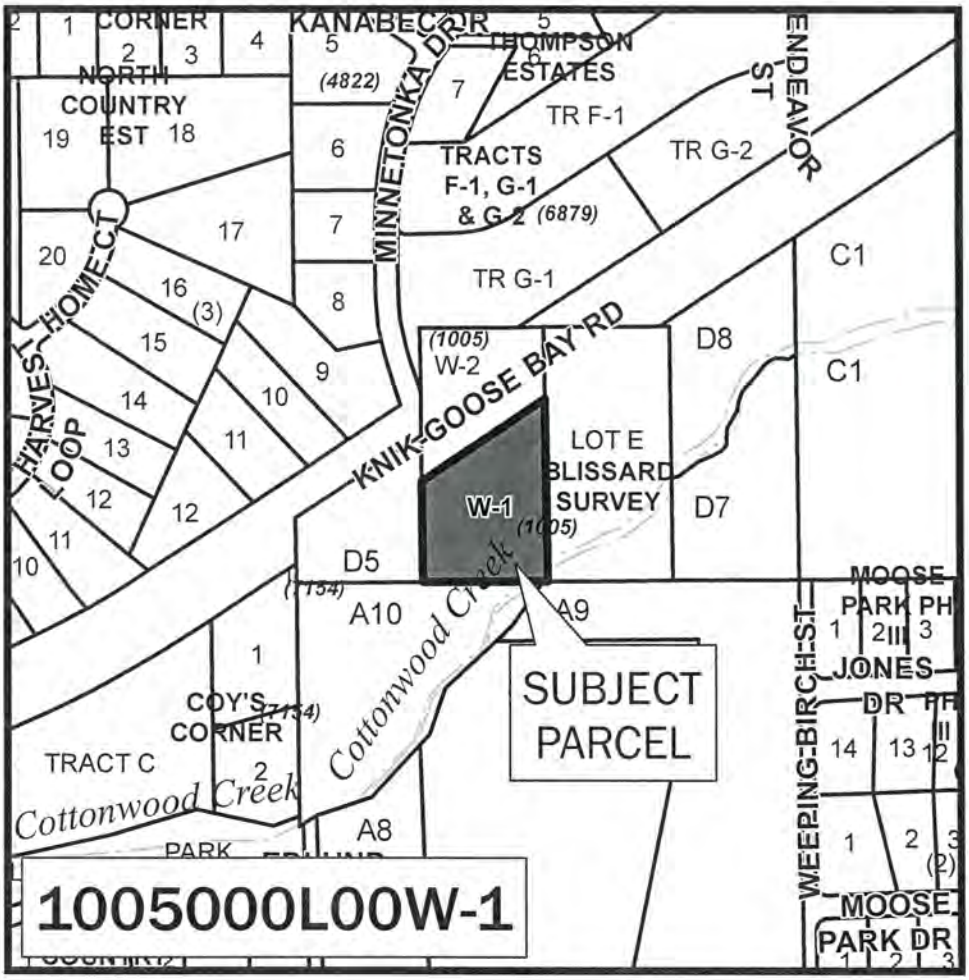
Application material may be viewed online at www.matsugov.us by clicking on "All Public Notices & Announcements." Application material may also be viewed at the Borough Permit Center. For additional information, you may contact Joe Metzger, Planner II, at 861-7862.

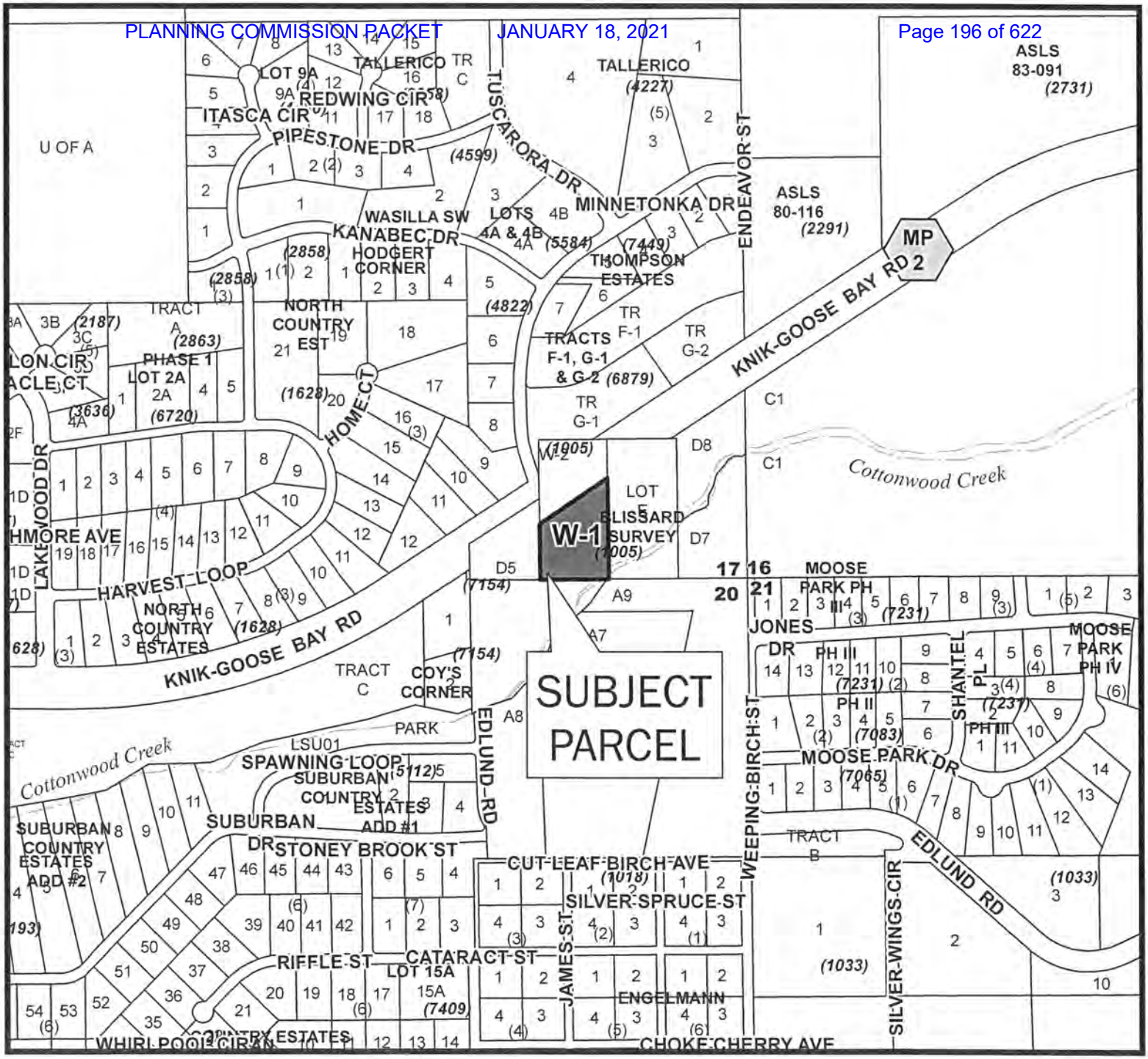
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upon request. Answers to questions and additional material requests will be addressed in the staff report for the public hearing. Planning Commission members may not receive or engage in ex-parte contact with the applicant, other interested parties in the application, or members of the public concerning the application or issues presented in the application.

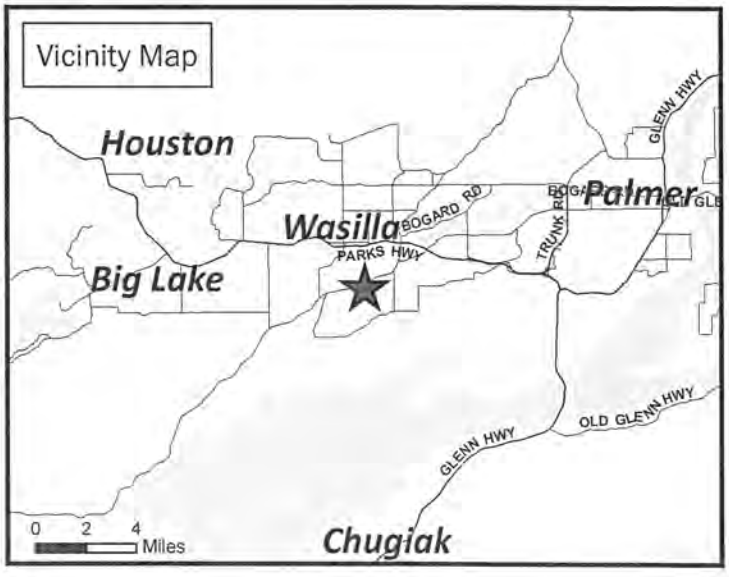
VICINITY MAP


CORNER
NORTH COUNTRY EST
KANABEC DR
MINNETONKA DR
THOMPSON ESTATES
TR F-1
TR G-2
TRACTS F-1, G-1 & G-2 (6879)
TR G-1
ENDEAVOR ST
HOME CT
HARVEST LOOP
KNIK-GOOSE BAY RD
(1005) W-2
W-1
LOT E BLISSARD SURVEY
(1005)
D8
C1
D7
D5
A10
A9
A8
Cottonwood Creek
COY'S CORNER
TRACT C
SUBJECT PARCEL
MOOSE PARK PH
JONES DR
WEEPING BIRCH ST
MOOSE PARK DR
1005000L00W-1



1005000L00W-1



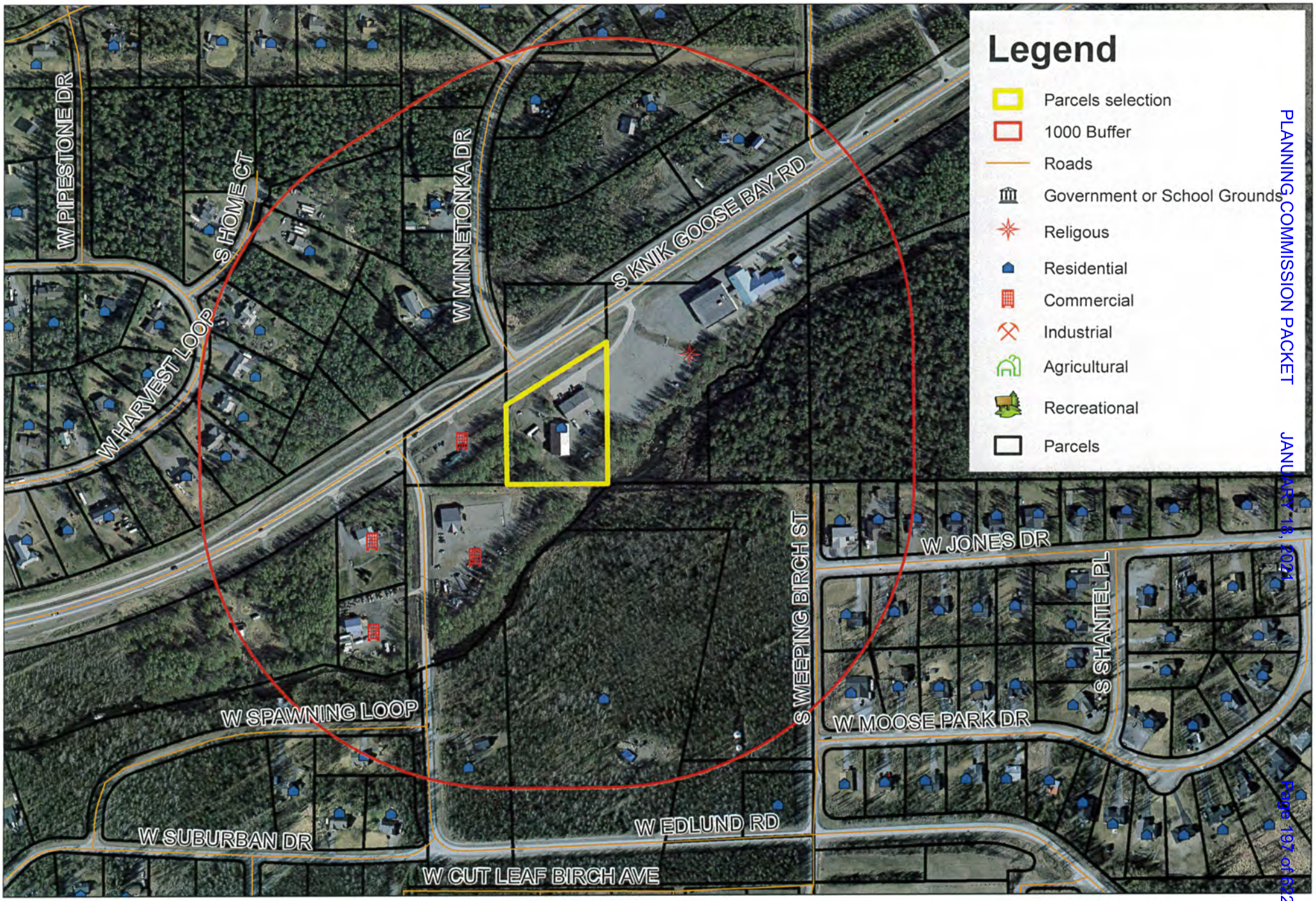


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N

MSB Information Technology/GIS
February 03, 2017

0 500 Feet



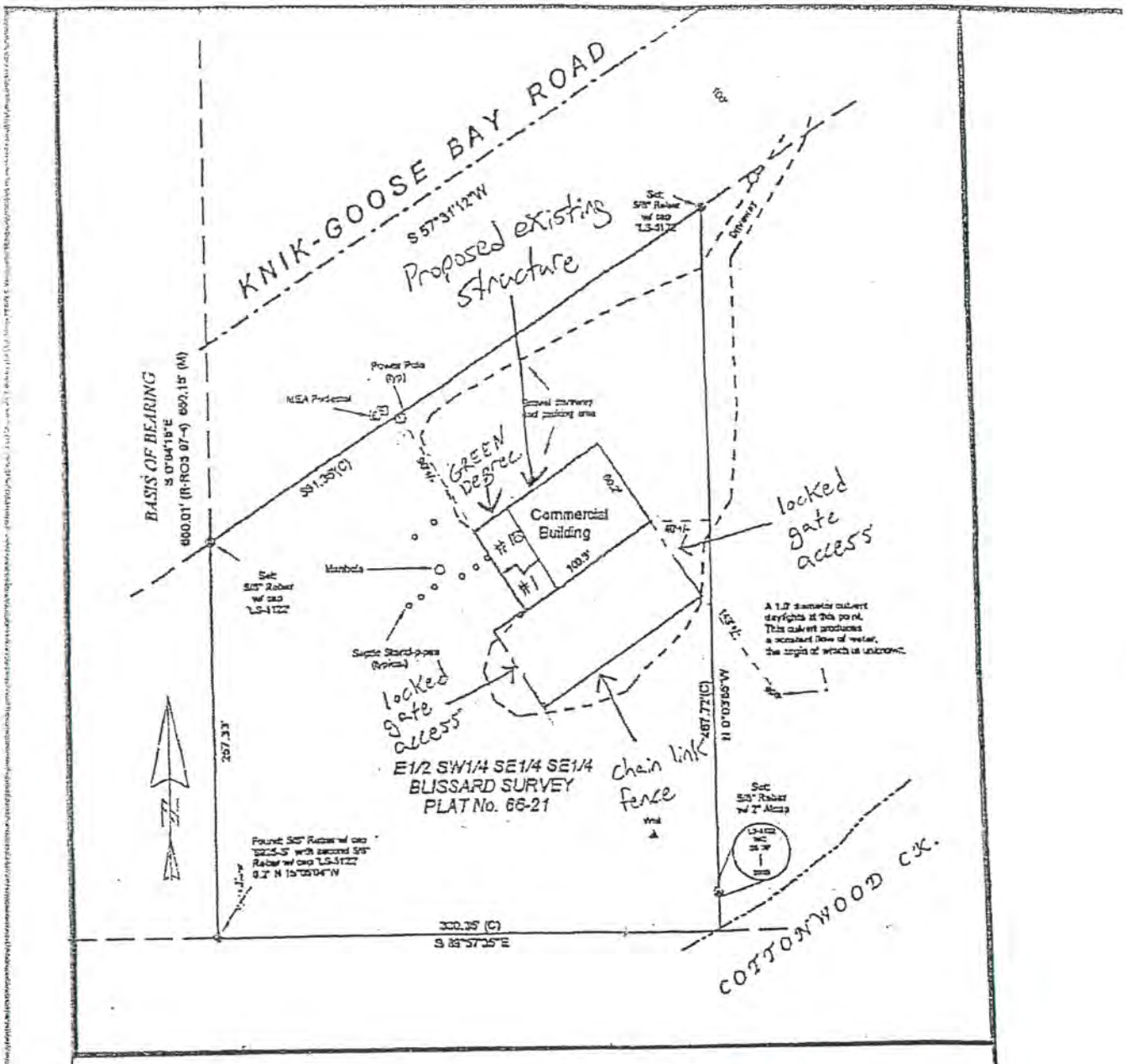
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Date: 12/8/2020

1 inch = 400 feet

0 400 800 Feet

SITE PLAN



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Site Plan Page 1

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Matanuska Susitna Borough
Development Services

Date: 12/15/2016 0 100 200 Feet

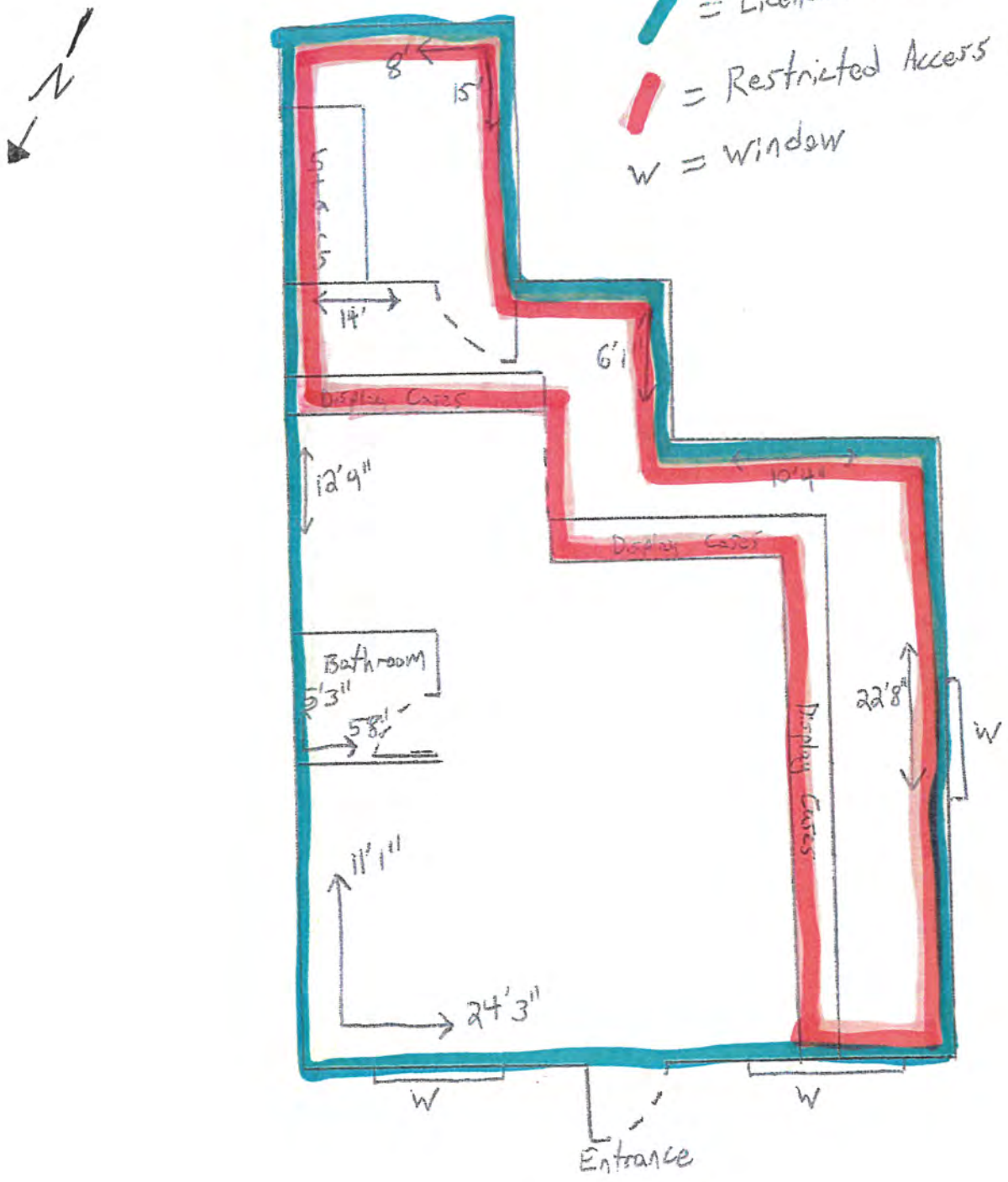
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Premises Diagram
1st floor

License # 11031
DBA: Green Degree

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= Licensed Premises Boundary
= Restricted Access Area
W = Window



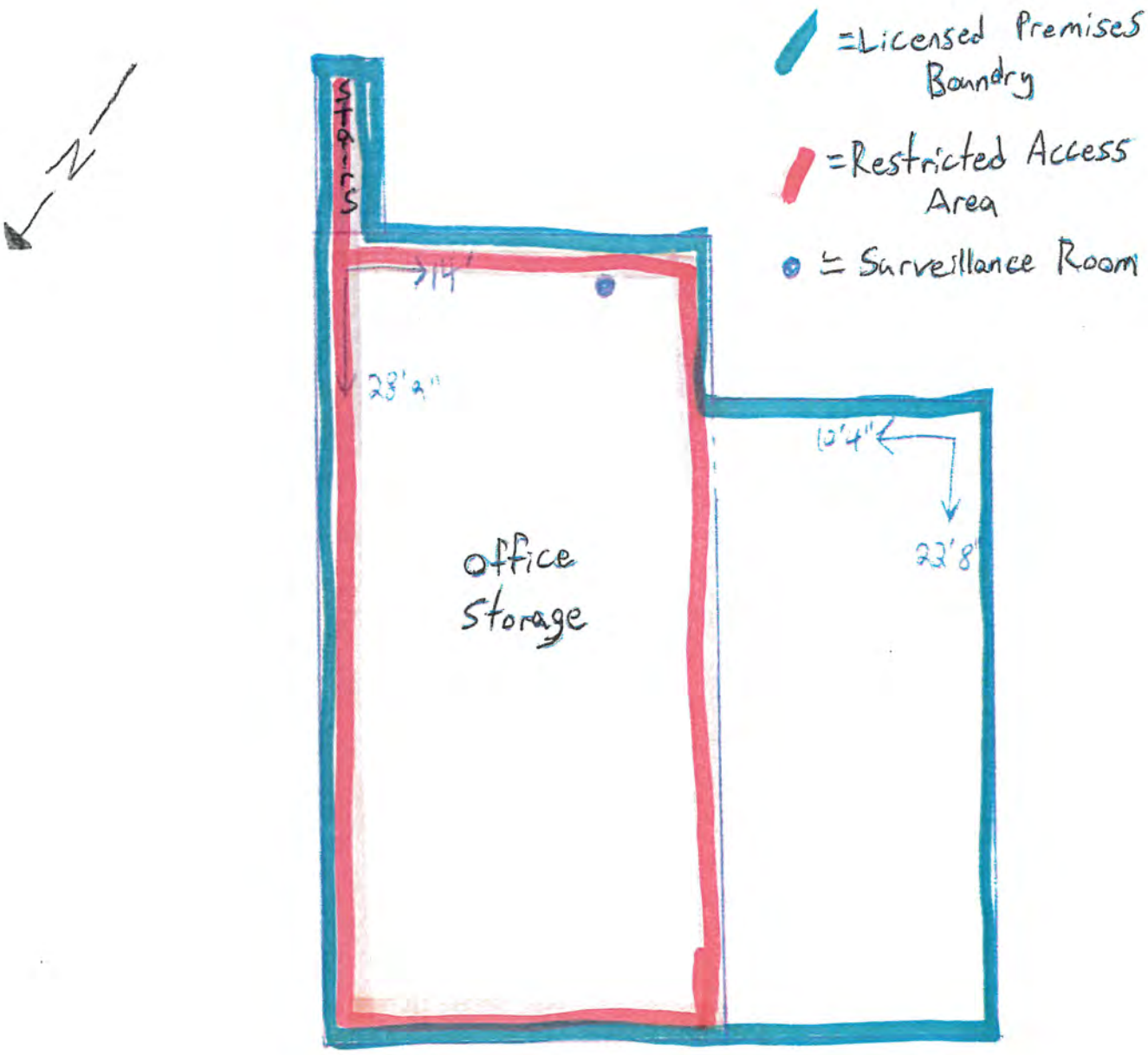
Premises Diagrams

2nd floor

License # 11031

DBA: Green Degree

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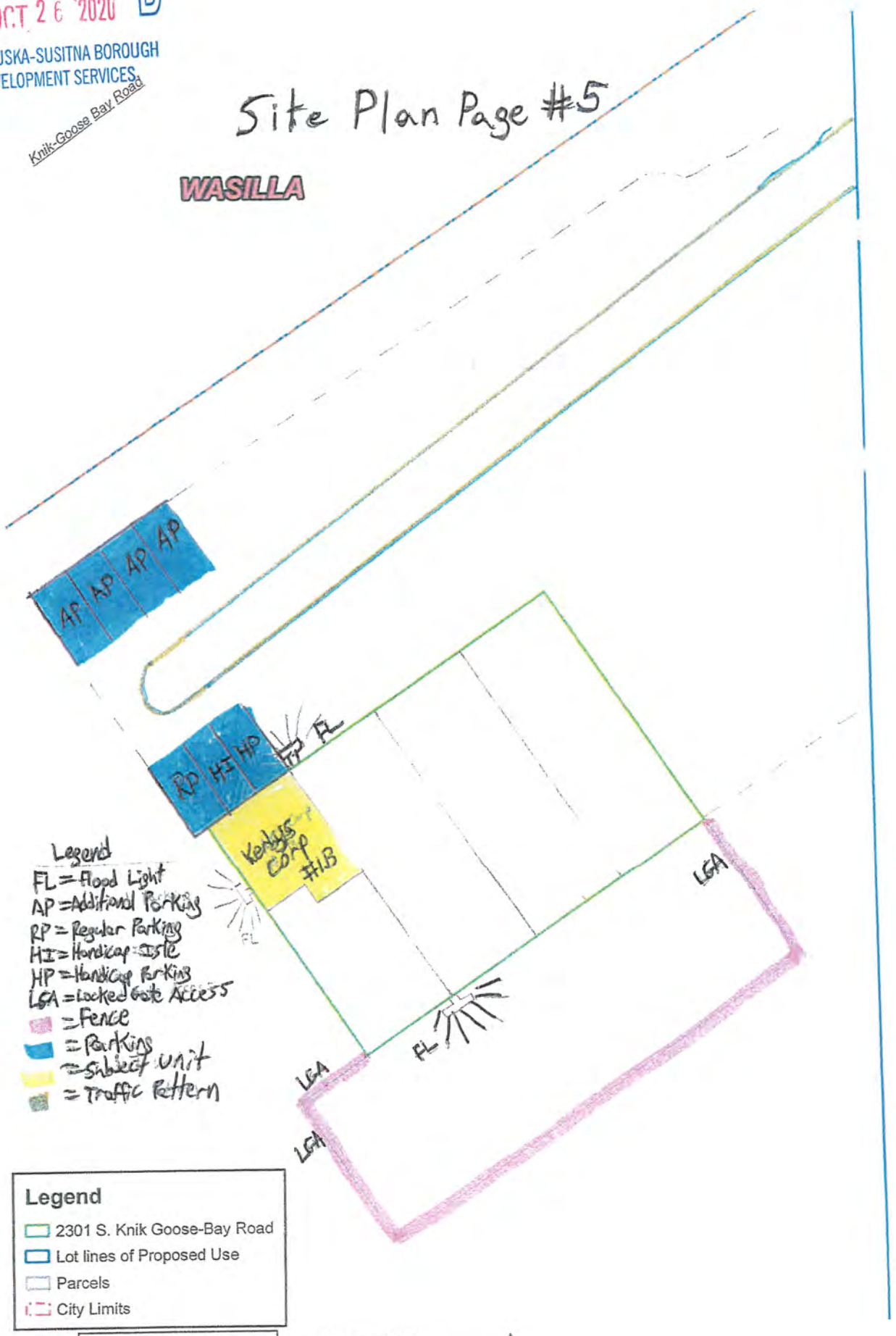


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Site Plan Page #5

Knik-Goose Bay Road

WASILLA



Legend

- 2301 S. Knik Goose-Bay Road
- Lot lines of Proposed Use
- Parcels
- City Limits

1 inch = 20 feet

0 20 40 Feet

APPLICATION MATERIAL

MATANUSKA-SUSITNA BOROUGH

Planning and Land Use Department
Development Services Division
350 East Dahlia Avenue • Palmer, AK 99645
Phone (907) 861-7822 • Fax (907) 861-8158
Email: permitcenter@matsugov.us

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CONDITIONAL USE PERMIT FOR MARIJUANA RELATED FACILITIES – MSB 17.60

Carefully read instructions and applicable borough code. Fill out forms completely. Attach information as needed. Incomplete applications will not be processed.

Application fee must be attached:
N/A $1,000 for Marijuana Retail Facility (for Covid Safe operations)
____ $1,000 for Marijuana Cultivation Facility

Prior to the public hearing, the applicant must also pay the mailing and advertising fees associated with the application. Applicants will be provided with a statement of advertising and mailing charges. Payment must be made prior to the application presentation before the Borough Planning Commission.

Required Attachments for a Marijuana Cultivation Facility:
N/A Wastewater and Waste Material Disposal Plan – 17.60.160 (A)
N/A Odor Mitigation and Ventilation Plan – 17.60.160 (B)
N/A Hazardous Chemicals Information – 17.60.160 (C)
N/A Security plan – 17.60.160 (D)

Required Attachments for Both Retail and Cultivation Facilities:
✓ Documentation demonstrating full compliance with applicable fire code – 17.60.150 (D) (2)

Subject Property: Township: E1/2, Range: SW1/4, Section: SE1/4, Meridian: SE1/4
MSB Tax ID# 40087 17 N01W17 1005000L00 W-1
SUBDIVISION: Blisford Sub, BLOCK(S): ____, LOT(S): W-1
STREET ADDRESS: 2301 S. Knik-Goose Bay Rd.
FACILITY / BUSINESS NAME: Green Degree

Ownership: A written authorization by the owner must be attached for an agent or contact person, if the owner is using one for the application. Is authorization attached? ☑ Yes ☐ No ☐ N/A

Name of Property Owner
Carolyn Dufour
Mailing: 1171 N Lefthand Loop
Wasilla AK 99654
Phone: Hm 907-351-9826 Fax
Wk Cell
E-mail Allisaw properties@gmail.com

Name of Agent / Contact for application
Kerby Coman
Mailing: 4426 E Curtis dr.
Wasilla AK 99654
Phone: Hm Fax
Wk Cell 907-884-3153
E-mail Kerby@greendegree.net

Site Plan – Attach a detailed, to scale, site plan clearly showing the following information:	**Attached**
Proposed and existing structure(s) on the site. Indicate which structure(s) will be used for the proposed use. Dimensions and locations of all existing and proposed structures on the site in relationship to all property lines.	✓
Signage – Existing and Proposed.	✓
Location and dimensions for all access points to and from the site to public rights-of-way or public access easements.	✓
Buffering – Fences, vegetation, topography, berms, and any landscaping	✓
Drainage	✓
Vehicular and pedestrian circulation patterns.	✓
Exterior site lighting.	✓
Location and dimensions of parking areas to be provided	✓
Scale and north arrow using standard engineering intervals such as 1" = 30', 1" = 50' or similar as required by project size.	✓

Map – Attach a detailed, to scale, vicinity map clearly showing the following information:	**Attached**
Identify all existing land uses within 1,000 feet.	✓
Scale and north arrow using standard engineering intervals such as 1" = 30', 1" = 50' or similar as required by project size.	✓

In order to grant a conditional use permit under MSB 17.60, the Planning Commission must find that each of the following requirements have been met. Explain the following in detail:	**Attached**
Is the conditional use compatible with and will it preserve or not materially detract from the value, character and integrity of the surrounding area?	✓
Will the granting of the conditional use permit be harmful to the public health, safety, convenience and welfare?	✓
Are sufficient setbacks, lot area, buffers and other safeguards being provided?	✓
Does the conditional use fulfill all other requirements of MSB Chapter 17.60 pertaining to the conditional use in this section?	✓
Describe measures taken to prevent any potential negative effect upon other properties in the area due to such factors as noise and odor.	✓
Describe measures taken to reduce negative effects upon adjacent properties by: • Increased property line and right-of-way buffers • Planted berms and landscaping • Site and building design features which contribute to the character of the surrounding area	✓
Describe how this use is compatible with the character of the surrounding area.	✓
Current status of State License application process – 17.60.150 (D) (1)	✓

17.60.170 Standards for Marijuana Retail Facilities:	Attached
Describe how the subject parcel is appropriate for the proposed conditional use. Include information detailing: • The proximity of the proposed use to existing businesses; • The proximity of parcels developed with residential uses; • Whether the roads associated with the proposed use have been, or will be, appropriate for commercial use; and • Proposed hours of operations.	✓
Provide information showing minimum parking standards have been met as required by MSB 17.60.170 (B) and (C).	✓

Floor Plan for Marijuana Retail Facilities – Attach a detailed, to scale, floor plan clearly showing the following information:	Attached
Dimensions of all structures.	✓
Interior floor plans (specific location of the use or uses to be made of the development).	✓
Net floor area square footage calculations.	✓

OWNER'S STATEMENT: I am owner of the following property:

MSB Tax account #(s) 1005000L00 W-1 and, I hereby apply for approval of a conditional use permit to operate a marijuana related facility on the property as described in this application.

I understand all activity must be conducted in compliance with all applicable standards of MSB 17.60 and with all other applicable borough and state.

I understand that other rules such as local, state and federal regulations, covenants, plat notes, and deed restrictions may be applicable and other permits or authorization may be required. I understand that the borough may also impose conditions and safeguards designed to protect the public's health, safety and welfare and ensure the compatibility of the use with other adjacent uses.

I understand that it is my responsibility to identify and comply with all applicable rules and conditions, covenants, plat notes, and deed restrictions, including changes that may occur in such requirements.

I grant permission for borough staff members to enter onto the property as needed to process this application and monitor compliance. Such access will at a minimum, be allowed when the activity is occurring and, with prior notice, and at other times necessary to monitor compliance.

The information submitted in this application is accurate and complete to the best of my knowledge.

Carolyn DeYoung 907-351-9820 10-15-2020

Signature: Property Owner Printed Name Date

Kerby Coman 10-15-20

Signature: Agent Printed Name Date

Letter of Authorization

I, Carolyn Dejoung, court appointed Property Manager of the property located at 2301 South Kink-Goose Bay Road do here-by authorize Kerby Coman and his affiliates to act as agent and contact person for this conditional use permit.

Date 10/15/2020

Carolyn Dejoung
Property Manager
(907) 351-9820

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Kerby's Corporation Conditional Use Permit for Marijuana Related Facility

We are making a change to our cannabis facility CUP for Covid-safe operations, by increasing our business hours to allow for customers visits be spread out across each day as much as possible, giving the customer a bigger window of time to choose to shop with us, and by increasing our retail square footage licensed area from 619 sqft to 1290 sqft to allow proper social distancing for workers and customers.

The following supplemental documentation is for attachment to the Conditional Use Permit Application for Kerby's Corporation, doing business as Green Degree, for a Retail Marijuana Store License location at 2301 S. Knik Goose Bay Rd #1 B, Wasilla AK 99654.

We will be receiving an updated Certificate of Occupancy from the fire code office once these changes are complete.

1. SITE PLAN

1.1. PROPOSED AND EXISTING SITE STRUCTURES
See attached site plan page 1.

1.2. SIGNAGE
Green Degree will use two signs that will identify the store by its business name.
The following are dimensions, descriptions and placements of each sign.
a) Sign #1 is 36 inches tall and 96 inches wide (4,608 Sq in) it displays the business name and logo and it is attached above the door to the establishment, facing the KGB roadway.
b) Sign #2 will not exceed 4,800 square inches and will be placed to the north of the front door.

1.3. PUBLIC RIGHTS OF WAY
See attached site plan page 1.

1.4. BUFFERING
See attached site plan pages 1-5.

1.5. DRAINAGE
See attached site plan page 2.

1.6. VEHICULAR AND PEDESTRIAN CIRCULATION PATTERNS
See attached site plan page 5.

1. 7. EXTERIOR SITE LIGHTING
See attached site plan page 5.

1.8. LOCATION AND DIMENSIONS OF PARKING AREA
See attached site plan page 5.

1.9. SCALE AND NORTH ARROW
See attached site plan.

2. MAP

2.1. IDENTIFY ALL EXISTING LAND USES WITHIN 1000 FEET
See attached map.
2.2. SCALE AND NORTH ARROW
See attached map.

3. ADDITIONAL INFORMATION

3.1.IS THE CONDITIONAL USE COMPATIBLE WITH AND WILL IT PRESERVE OR NOT MATERIALLY DETRACT FROM THE VALUE, CHARACTER OF THE SURROUNDING AREA?
Yes. The building in which this marijuana retail store is housed is a commercial retail building. The unit in the rear of this facility is a cannabis cultivation establishment. The unit adjacent is a cannabis cultivation and the unit furthest to the east is also a cannabis cultivation. The overall use of that section of KGB is mixed use and the building Green Degree is located has been used for commercial use for over 20 years.
3.2. WILL THE GRANTING OF THE CONDITIONAL USE PERMIT BE HARMFUL TO THE PUBLIC HEALTH, SAFETY, CONVENIENCE AND WELFARE?
No. We have been operating this facility for close to 3 years and have done nothing but helped the community and economy. We also will have certain plans in place to ensure public health and safety such as: A diversion prevention plan, loiter patrol. Any and all cannabis waste this facility produces gets rendered unusable waste by being ground up with trash and being disposed of in the onsite dumpster.
3.3. ARE SUFFICIENT SETBACKS, LOT AREA, BUFFERS AND OTHER SAFEGUARDS BEING PROVIDED?
Yes. The commercial driveway to access the building in which we are located has been used to do so for over 20 years All required setbacks, lot area, buffers, and other safeguards have been met and are provided. Currently the property is 460 feet away from the closest corner of the multi-use building to the closest lot line of the adjacent church. However if you measure shortest walking distance from the front door of the establishment to the lot line of the church you have 547 feet which is approved within state and borough regulations.
3.4. DOES THE CONDITIONAL USE FULFILL ALL OTHER REQUIREMENTS OF MSB CHAPTER 17.60 PERTAINING TO THE CONDITIONAL USE IN THIS SECTION?
Yes.
3.5. DESCRIBE MEASURES TAKEN TO PREVENT ANY POTENTIAL NEGATIVE EFFECT UPON OTHER PROPERTIES IN THE AREA DUE TO SUCH FACTORS AS NOISE OR ODOR.
The establishment will not be increasing the amount of noise or odor in the area.
3.6. DESCRIBE MEASURES TAKEN TO REDUCE NEGATIVE EFFECTS UPON ADJACENT PROPERTIES BY:

a. INCREASED PROPERTY LINE AND RIGHT-OF-WAY BUFFERS
i. Not Applicable.
b. PLANTED BERMS AND LANDSCAPING
ii. Not Applicable.
c. SITE AND BUILDING DESIGN FEATURES WHICH CONTRIBUTE TO THE CHARACTER OF THE SURROUNDING AREA
iii. There will be no changes to the exterior or the interior of the building that will negatively impact adjacent properties.
3.7. DESCRIBE HOW THIS USE IS COMPATIBLE WITH THE CHARACTER OF THE SURROUNDING AREA.
The building in which this marijuana retail store is housed is a commercial retail building. The unit in the rear of this facility is a cannabis cultivation establishment. The unit adjacent is a cannabis cultivation and the unit furthest to the east is also a cannabis cultivation. The overall use of that section of KGB is mixed use and the building Green Degree is located has been used for commercial use for over 20 years
3.8. CURRENT STATUS OF STATE LICENSE APPLICATION PROCESS
The application for Kerby's Corporation is currently active and operating

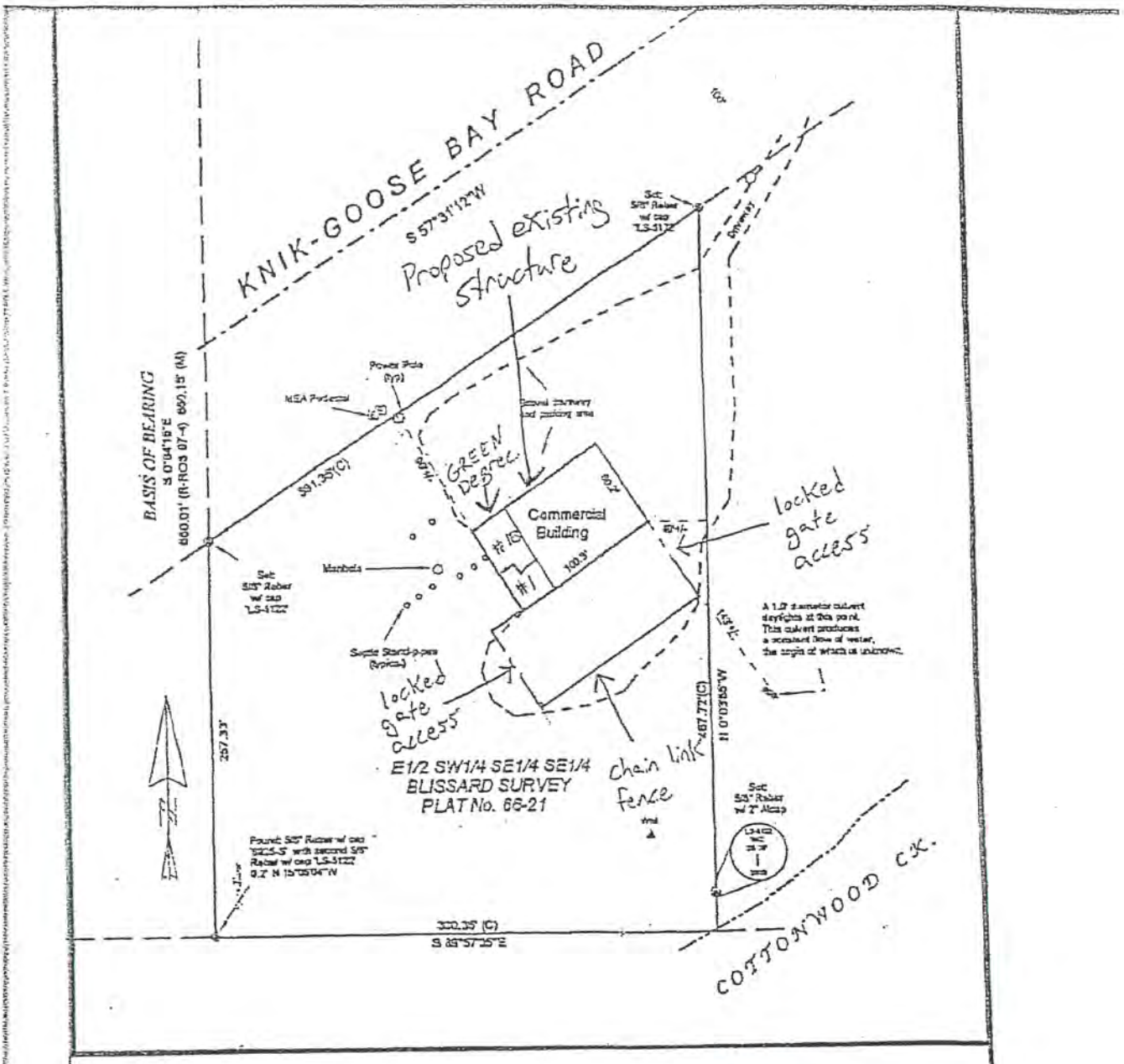
4. STANDARDS FOR MARIJUANA RETAIL FACILITY

4.1 DESCRIBE HOW THE SUBJECT PARCEL IS APPROPRIATE FOR THE PROPOSED CONDITIONAL USE
The overall use of that section of KGB is mixed use and the building Green Degree is located has been used for commercial use for over 20 years. Our proposed hour of operation is mon-sun 8am to 5am. These hours of operation are appropriate for this location because: This is primarily a commercial part of KGB in an industrial zone with only one residential neighbor with over 1100' of trees between the residence and our store, this will have no impact on any residential parcels, It poses no threat to public safety or the surrounding area, it will reduce the visiting traffic frequency therefore improving traffic conditions, it is located in a commercial building located directly off of Knik Goose Bay Rd, increasing our business hours will allow for customers visits to be spread out across a longer time span each day, This will help reduce any person to person contact that might be taking place customer to customer, this will allow our staff more adequate time to sanitize the customer area between customers. See attached map for identification of surrounding parcels.
4.2 PROVIDE INFORMATION SHOWING MINIMUM PARKING STANDARDS HAVE BEEN MET AS REQUIRED BY MSB 17 .60.170 (8) AND (C)
A handicap parking sign will be hung in the designated handicap parking spot.
(See attached Site Plan #5)

5. FLOOR PLAN

5.1 DIMENSIONS OF ALL STRUCTURES
See attached Premises Diagrams and site plan page 5

5.2 INTERIOR FLOOR PLANS
See attached Premises Diagrams
5.3 NET FLOOR AREA SQUARE FOOTAGE CALCULATIONS
See attached Premises Diagrams



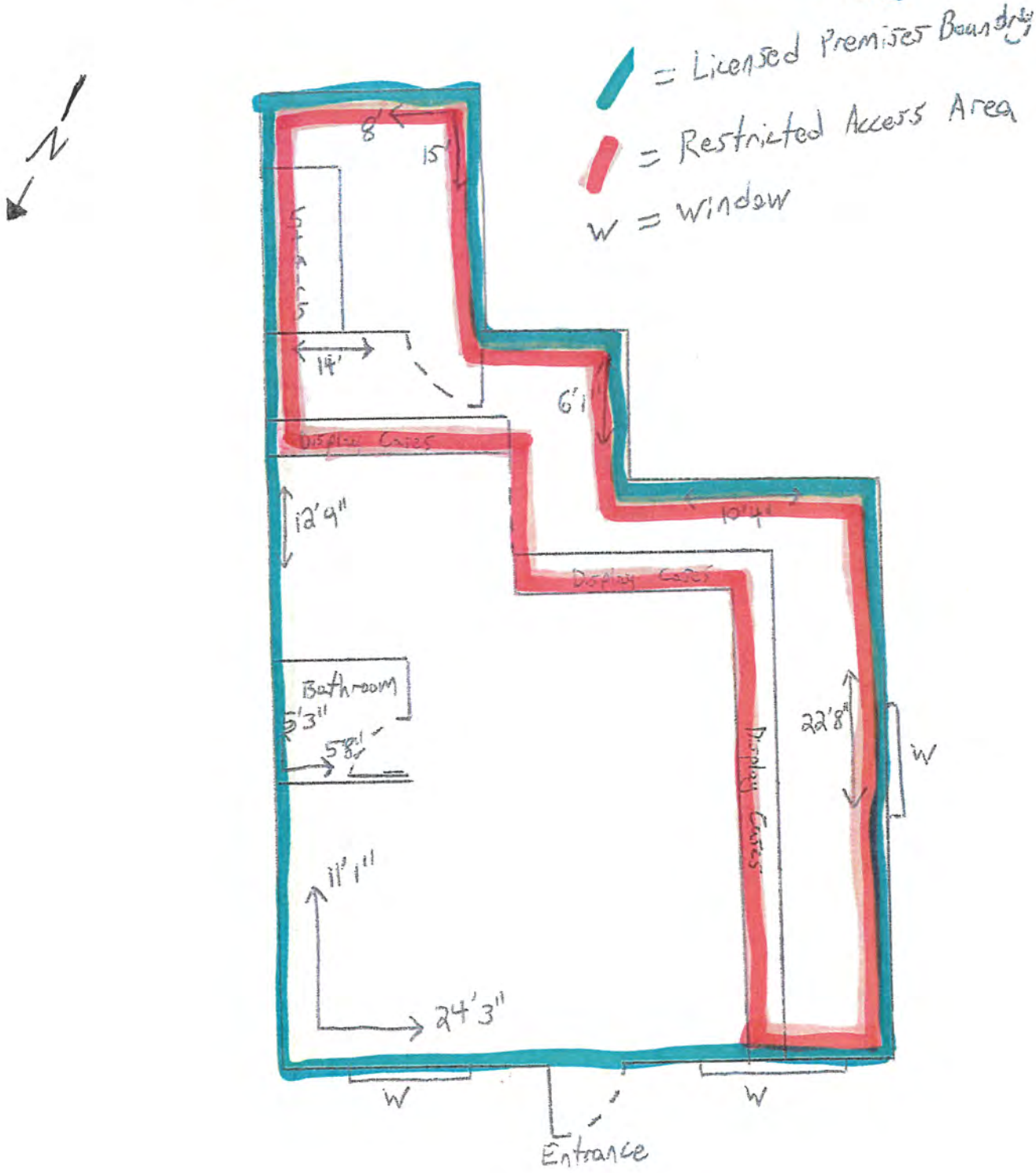
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Site Plan Page 1

Premises Diagram
1st floor

License # 11031
DBA: Green Degree

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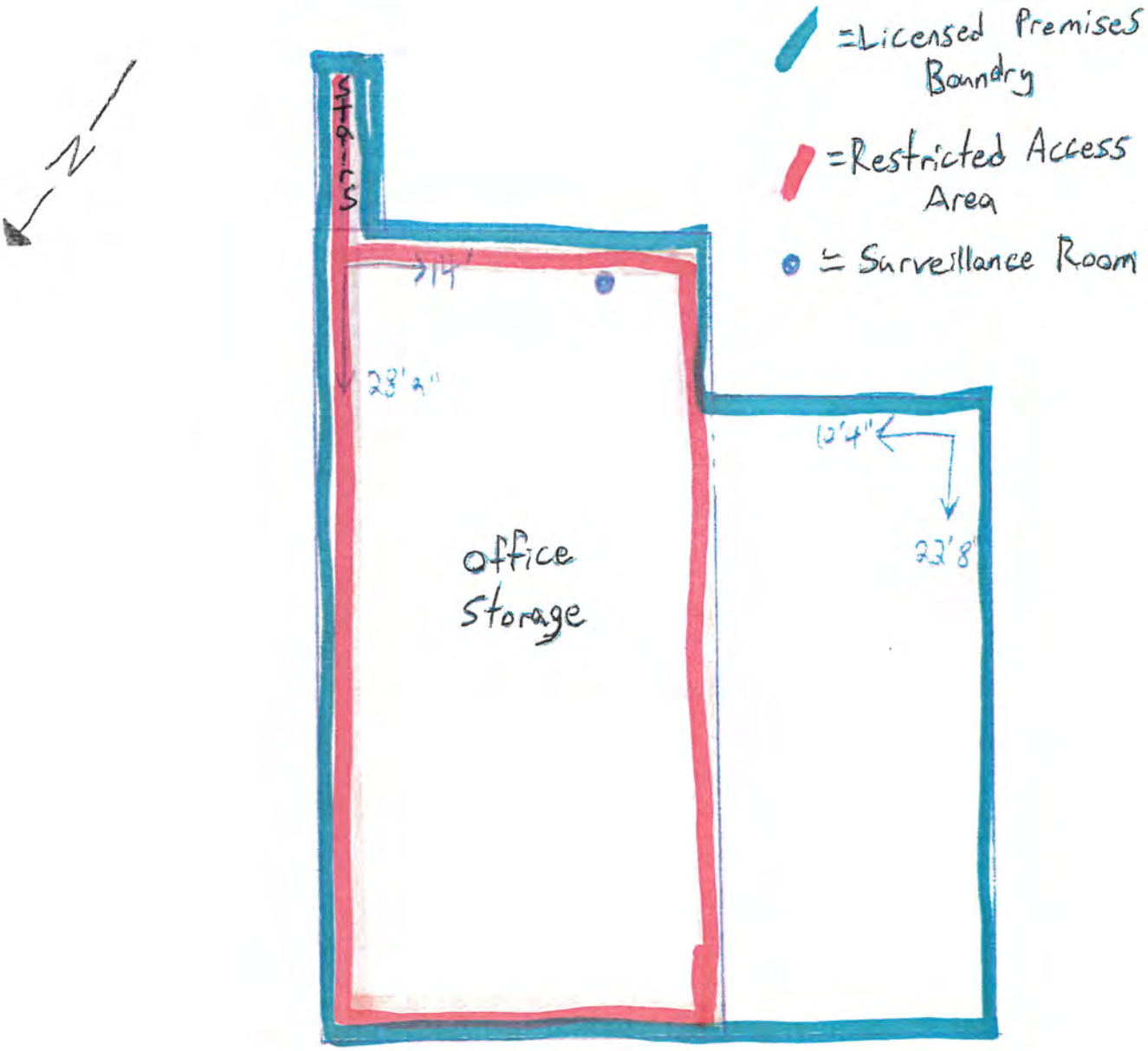
Premises Diagrams

2nd floor

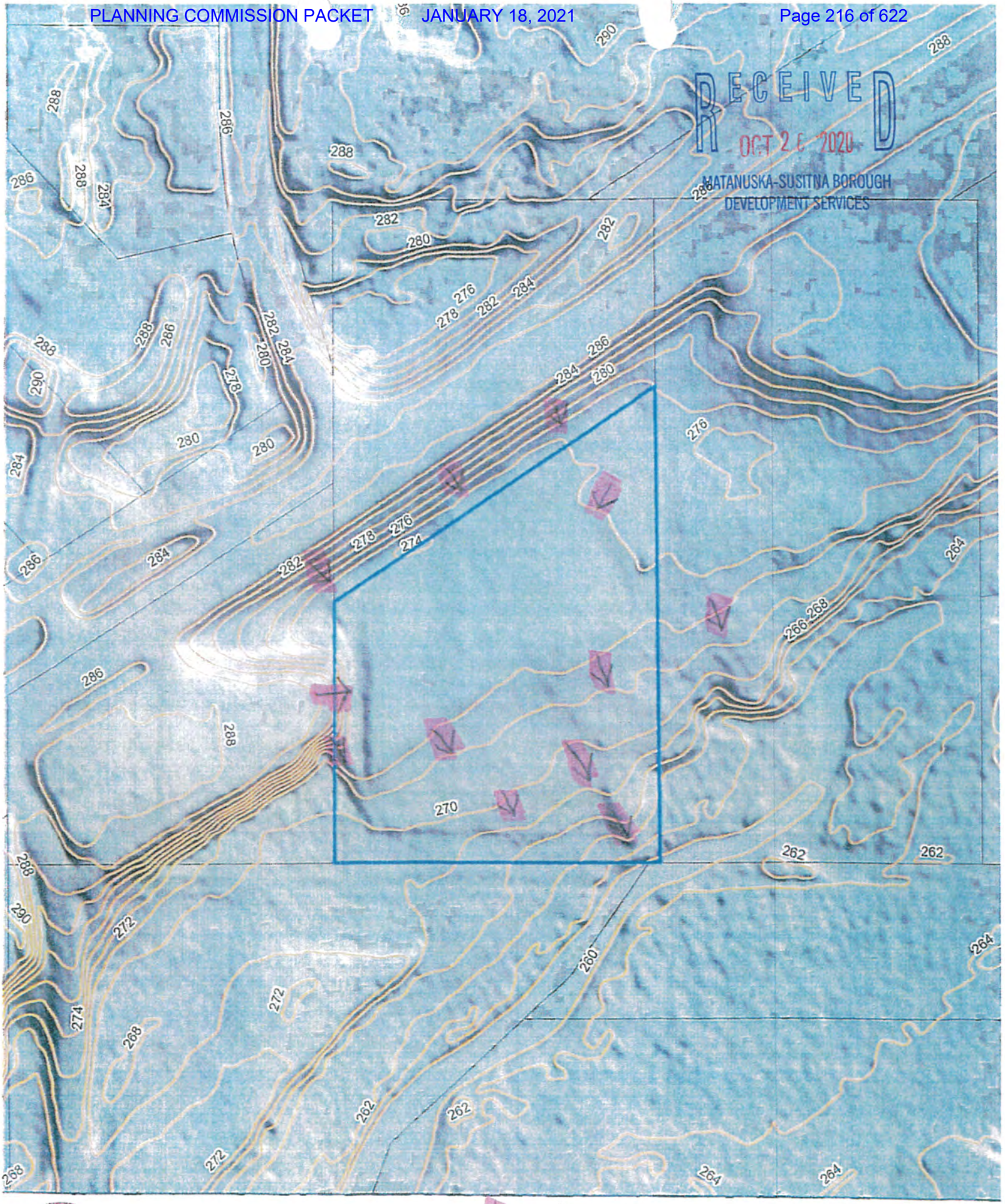
License # 11031

DBA: Green Degree

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↓ = Drainage

Matanuska Susitna Borough
Development Services

Date: 12/15/2016 0 100 200 Feet

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Site Plan Page 2

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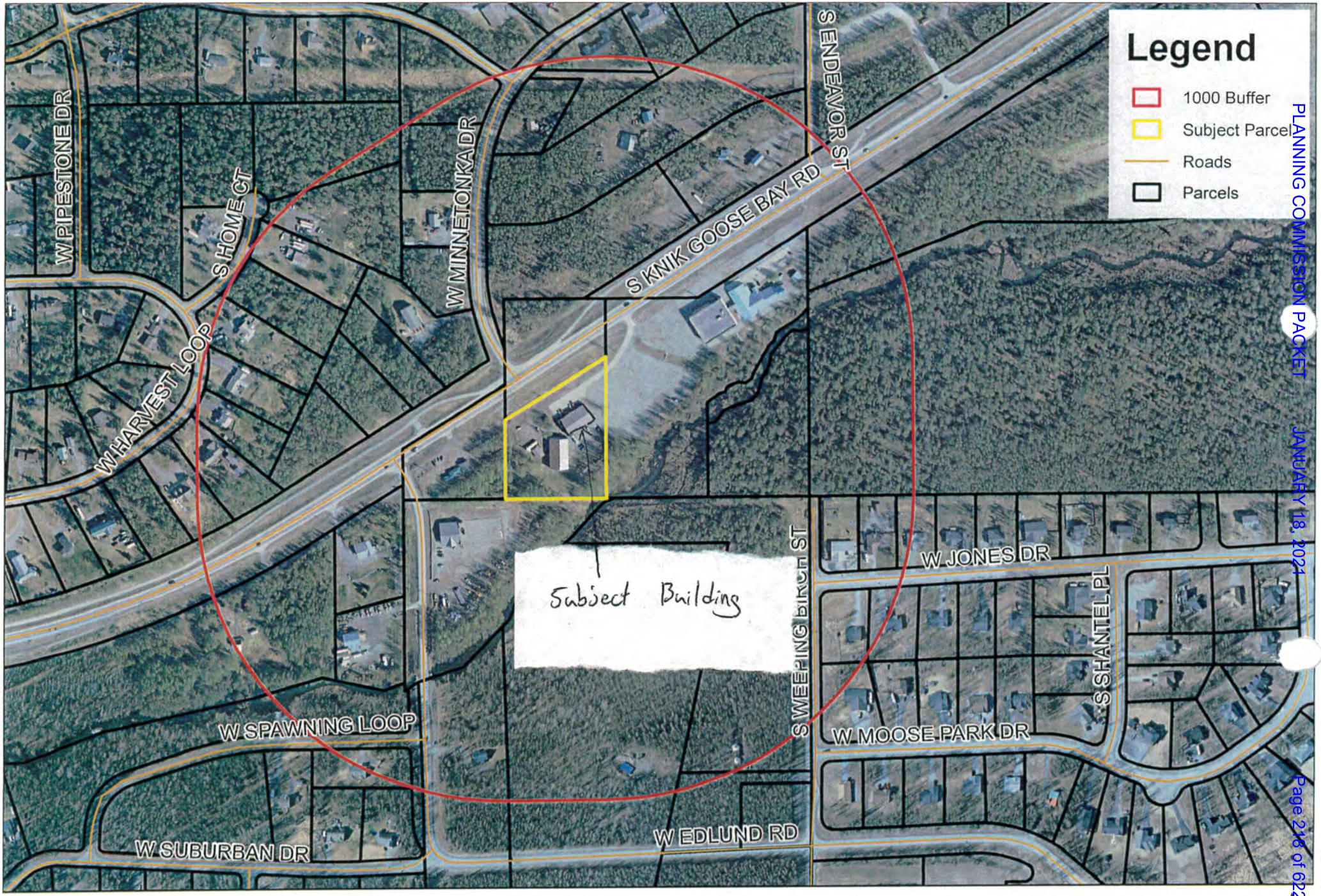
Matanuska Susitna Borough
Development Services

Date: 12/15/2016 0 250 500 Feet

N

Site Plan Page 3

This map is solely for informational purposes only. The Borough makes no express or implied warranties with respect to the character, function, or capabilities of the map or the suitability of the map for any particular purpose beyond those originally intended by the Borough. For information regarding the full disclaimer and polices related to acceptable uses of this map, please contact the Matanuska-Susitna Borough GIS Division at 907-745-4801.



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Site Plan Page 4

Date: 10/15/2020

1 inch = 400 feet

0 400 800 Feet

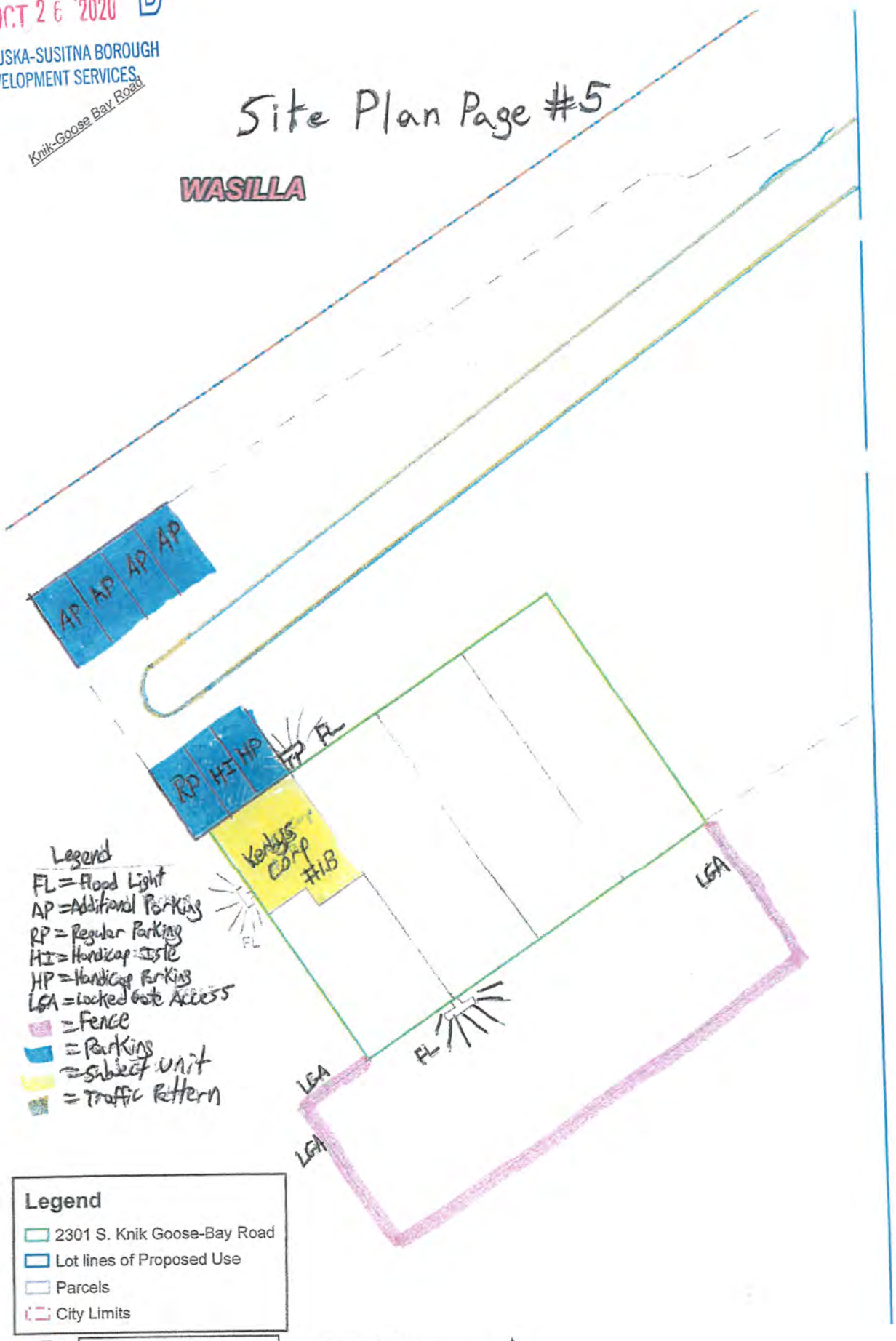
PLANNING COMMISSION PACKET JANUARY 18, 2021

RECEIVED
OCT 26 2020
MATANUSKA-SUSITNA BOROUGH
DEVELOPMENT SERVICES

Knik-Goose Bay Road

Site Plan Page #5

WASILLA



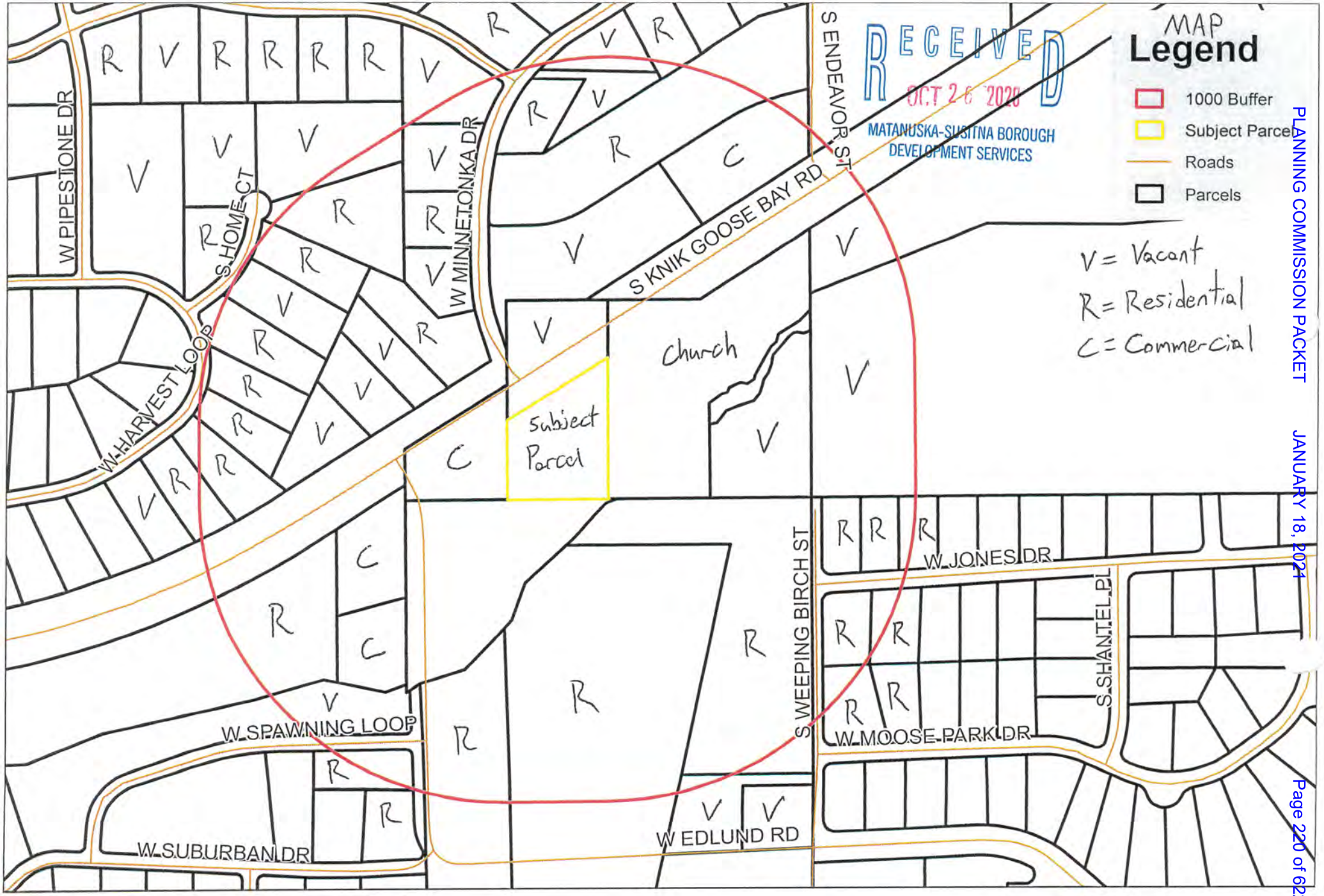
Legend

- 2301 S. Knik Goose-Bay Road
- Lot lines of Proposed Use
- Parcels
- City Limits

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1 inch = 20 feet

0 20 40 Feet



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Date: 10/15/2020

1 inch = 400 feet

0 400 800 Feet

N

Joseph Metzger

From: Joseph Metzger
Sent: Thursday, October 22, 2020 12:08 PM
To: 'Kerby Coman'
Subject: Green Degree (KGB) RFAI



Greetings Kirby,

Attached, please find a letter requesting additional information on your modification request. Don't hesitate to contact me if you have any questions or need clarification on anything.

Respectfully,

Joe Metzger
MSB Planner
907-861-7862

Joseph Metzger

From: Kerby Coman <kerby@hempire-co.com>
Sent: Monday, October 26, 2020 11:56 AM
To: Joseph Metzger
Subject: Re: Green Degree (KGB) RFAI
Attachments: Kerby's Corp CUP Narrative.docx

[**EXTERNAL EMAIL** - CAUTION: Do not open unexpected attachments or links.]
Here is the updated Narrative. I will be bringing diagrams by around 2 pm as discussed.

On Thu, Oct 22, 2020 at 12:08 PM Joseph Metzger <Joseph.Metzger@matsugov.us> wrote:

> Greetings Kirby,
>
> Attached, please find a letter requesting additional information on your modification request. Don't hesitate to contact me if you have any questions or need clarification on anything.
>
> Respectfully,
>
> Joe Metzger
> MSB Planner
> 907-861-7862

Department of Commerce, Community, and Economic Development

ALCOHOL & MARIJUANA CONTROL OFFICE

State of Alaska / Commerce / Marijuana / License Search / License #11031

LICENSE NUMBER 11031

Return to Search Results

License Number: 11031

License Status: Active-Operating

License Type: Retail Marijuana Store

Doing Business As: GREEN DEGREE

Business License Number: 1033365

Issue Date: 11/10/2020

Effective Date: 11/10/2020

Expiration Date: 08/31/2021

Email Address: kerby@greendegree.net

Physical Address: 2301 South Knik-Goose Bay Rd #1B
Wasilla, AK 99654
UNITED STATES

Licensees: Kerby's Corporation 10036431

Entity Officials: Kerby Coman

Onsite Consumption Endorsement

Status:

Approval Date:

Issue Date:

Effective Date:

Central Mat-Su Fire Department

Central Mat-Su Fire Service Area No. 130
Department of Emergency Services, District 1
Matanuska-Susitna Borough

NON-STRUCTURAL FIRE & LIFE SAFETY CERTIFICATE OF OCCUPANCY

This area has been inspected and certified by the Central Mat-Su Fire Department in accordance with the State of Alaska, Matanuska-Susitna Borough, and Fire Service Area fire and life safety regulations, to be occupied by:

Kerby's Corporation

2301 S.Knik-Goose Bay Rd. #1B

By Order Of the Central Mat-Su Fire Department

September 23, 2016
Date

Richard Boothby, Fire Code Official

From: Fire Code
To: Joseph Metzger
Subject: RE: RFC-Green Degree (KGB) - Due December 2
Date: Tuesday, November 10, 2020 11:54:42 AM

Joe,

Fire and Life Safety has met with Mr. Coman and discussed this modification. He has satisfied the requirements from the building code perspective. Fire and Life Safety has no issue with this modification.

From: Joseph Metzger <Joseph.Metzger@matsugov.us>
Sent: Friday, November 6, 2020 1:19 PM
To: 'allen.kemplen@alaska.gov' <allen.kemplen@alaska.gov>; 'tucker.hurn@alaska.gov' <tucker.hurn@alaska.gov>; 'melanie.nichols@alaska.gov' <melanie.nichols@alaska.gov>; 'kyler.hylton@alaska.gov' <kyler.hylton@alaska.gov>; 'sarah.wilber@alaska.gov' <sarah.wilber@alaska.gov>; 'mearow@matanuska.com' <mearow@matanuska.com>; 'rglenn@mta-telco.com' <rglenn@mta-telco.com>; 'jthompson@mta-telco.com' <jthompson@mta-telco.com>; 'row@enstarnaturalgas.com' <row@enstarnaturalgas.com>; 'ospdesign@gci.com' <ospdesign@gci.com>; Eric Phillips <Eric.Phillips@matsugov.us>; Jude Bilafer <Jude.Bilafer@matsugov.us>; Cindy Corey <Cindy.Corey@matsugov.us>; Terry Dolan <Terry.Dolan@matsugov.us>; Jim Jenson <James.Jenson@matsugov.us>; Jamie Taylor <Jamie.Taylor@matsugov.us>; Nicole Wilkins <Nicole.Wilkins@matsugov.us>; Karol Riese <Karol.Riese@matsugov.us>; Taunnie Boothby <Taunnie.Boothby@matsugov.us>; Theresa Taranto <Theresa.Taranto@matsugov.us>; John Aschenbrenner <John.Aschenbrenner@matsugov.us>; John Aschenbrenner <John.Aschenbrenner@matsugov.us>; Jill Irsik <Jill.Irsik@matsugov.us>; Michelle Wagner <Michelle.Wagner@matsugov.us>; Cheryl Scott <Cheryl.Scott@matsugov.us>; Brad Sworts <Brad.Sworts@matsugov.us>; George McKee <George.McKee@matsugov.us>; billydoc56@hotmail.com; pcook@alaskan.com; uprise@mtaonline.net
Subject: RFC-Green Degree (KGB) - Due December 2

MEMORANDUM

Date: November 6, 2020

To: Various Governmental Agencies

From: Joe Metzger, MSB Planner

Subject: Request for Review and Comments Governmental Agencies

MATANUSKA-SUSITNA BOROUGH

Real Property Detail for Account: 1005000L00W-1

Site Information

Account Number	1005000L00W-1	Subdivision	BLISSARD SRVY
Parcel ID	40087	City	None
TRS	S17N01W17	Map	WA12 Tax Map
Abbreviated Description (Not for Conveyance)	BLISSARD SRVY LOT W-1		
Site Address	2301 S KNIK GOOSE BAY RD		

Ownership

Owners	KRETSCHEK ANDREA E	Buyers	
Primary Owner's Address	%SIGNATURE - CAROLYN 1174 N LEATHERLEAF LOOP S WASILLA AK 99654	Primary Buyer's Address	

Appraisal Information

Year	Land Appraised	Bldg. Appraised	Total Appraised
2020	$144,300.00	$550,900.00	$695,200.00
2019	$144,300.00	$728,000.00	$872,300.00
2018	$144,300.00	$256,100.00	$400,400.00

Assessment

Year	Land Assessed	Bldg. Assessed	Total Assessed[1]
2020	$144,300.00	$550,900.00	$695,200.00
2019	$144,300.00	$728,000.00	$872,300.00
2018	$144,300.00	$256,100.00	$400,400.00

Building Information

Structure 0 of 3

Residential Units	0	Use	Agriculture
Condition	Standard	Design	Commercial
Basement	None	Construction Type	Metal
Year Built		2018 Grade	None
Foundation	Poured Concrete	Building Appraisal	$281100
Well		Septic	

Structure 1 of 3

Residential Units	0	Use	Other Misc Services
Condition	Standard	Design	Commercial
Basement	None	Construction Type	Frame
Year Built		1984 Grade	None
Foundation	Poured Concrete	Building Appraisal	$226800
Well	Well 1 - Drilled Well	Septic	Septic - 1 - Septic Tank

Structure 2 of 3

Residential Units	1	Use	Residential Building
Condition	Standard	Design	Cabin
Basement	None	Construction Type	Frame
Year Built		2003 Grade	1225 - Cabin
Foundation	Other	Building Appraisal	$43000
Well		Septic	

Building Item Details

Building Number	Description	Area	Percent Complete
2	Gas Heat	1 Sq. Ft.	100%
2	First Story	672 Sq. Ft.	100%

Tax/Billing Information

Year	Certified	Zone	Mill	Tax Billed
2020	Yes	0008	14.833	$10311.90
2019	Yes	0008	14.959	$13048.75
2018	Yes	0008	14.879	$5957.55

Recorded Documents

Date	Type	Recording Info (offsite link to DNR)
3/24/2014	QUITCLAIM DEED (ALL TYPE)	Palmer 2014-005075-0
6/22/2011	WARRANTY DEED (ALL TYPES)	Palmer 2011-011865-0
4/24/2009	QUITCLAIM DEED (ALL TYPE)	Palmer 2009-008722-0

Tax Account Status[2]

Status	Tax Balance	Farm	Disabled Veteran	Senior	Total	LID Exists
Current	$5,155.94		$0.00	$0.00	$0.00	$0.00 No

Land and Miscellaneous

Gross Acreage	Taxable Acreage	Assembly District	Precinct	Fire Service Area	Road Service Area
2.76	2.76	Assembly District 003	12-210	130 Central Mat-Su	014 Fairview RSA

[1] Total Assessed is net of exemptions and deferments.rest, penalties, and other charges posted after Last Update Date are not reflected in balances.

[2] If account is in foreclosure, payment must be in certified funds.

Last Updated: 10/26/2020 12:00:12 AM

COMMENTS

Agency Comments

From: Fire Code
To: Joseph Metzger
Subject: RE: RFC-Green Degree (KGB) - Due December 2
Date: Tuesday, November 10, 2020 11:54:42 AM

Joe,

Fire and Life Safety has met with Mr. Coman and discussed this modification. He has satisfied the requirements from the building code perspective. Fire and Life Safety has no issue with this modification.

From: Joseph Metzger <Joseph.Metzger@matsugov.us>
Sent: Friday, November 6, 2020 1:19 PM
To: 'allen.kemplen@alaska.gov' <allen.kemplen@alaska.gov>; 'tucker.hurn@alaska.gov' <tucker.hurn@alaska.gov>; 'melanie.nichols@alaska.gov' <melanie.nichols@alaska.gov>; 'kyler.hylton@alaska.gov' <kyler.hylton@alaska.gov>; 'sarah.wilber@alaska.gov' <sarah.wilber@alaska.gov>; 'mearow@matanuska.com' <mearow@matanuska.com>; 'rglenn@mta-telco.com' <rglenn@mta-telco.com>; 'jthompson@mta-telco.com' <jthompson@mta-telco.com>; 'row@enstarnaturalgas.com' <row@enstarnaturalgas.com>; 'ospdesign@gci.com' <ospdesign@gci.com>; Eric Phillips <Eric.Phillips@matsugov.us>; Jude Bilafer <Jude.Bilafer@matsugov.us>; Cindy Corey <Cindy.Corey@matsugov.us>; Terry Dolan <Terry.Dolan@matsugov.us>; Jim Jenson <James.Jenson@matsugov.us>; Jamie Taylor <Jamie.Taylor@matsugov.us>; Nicole Wilkins <Nicole.Wilkins@matsugov.us>; Karol Riese <Karol.Riese@matsugov.us>; Taunnie Boothby <Taunnie.Boothby@matsugov.us>; Theresa Taranto <Theresa.Taranto@matsugov.us>; John Aschenbrenner <John.Aschenbrenner@matsugov.us>; John Aschenbrenner <John.Aschenbrenner@matsugov.us>; Jill Irsik <Jill.Irsik@matsugov.us>; Michelle Wagner <Michelle.Wagner@matsugov.us>; Cheryl Scott <Cheryl.Scott@matsugov.us>; Brad Sworts <Brad.Sworts@matsugov.us>; George McKee <George.McKee@matsugov.us>; billydoc56@hotmail.com; pcook@alaskan.com; uprise@mtaonline.net
Subject: RFC-Green Degree (KGB) - Due December 2

MEMORANDUM

Date: November 6, 2020

To: Various Governmental Agencies

From: Joe Metzger, MSB Planner

Subject: Request for Review and Comments Governmental Agencies

From: Taunnie Boothby
To: Karol Riese; Kim Sollien; Joseph Metzger
Subject: RE: RFC Green Degree (KGB) 17N01W17
Date: Tuesday, November 17, 2020 5:10:07 PM

Special Flood Hazard Area identified on Cottonwood creek. Flood Hazard Development application must be submitted and a permit issued prior to any work beginning in the flood zone per MSB 17.29

Taunnie L. Boothby, CFM, Planner II
Matanuska-Susitna Borough
Planning Department
907-861-8526
taunnie.boothby@matsugov.us

-----Original Appointment-----
From: Karol Riese <Karol.Riese@matsugov.us>
Sent: Friday, November 6, 2020 3:03 PM
To: Karol Riese; Kim Sollien; Taunnie Boothby
Subject: RFC Green Degree (KGB) 17N01W17
When: Monday, November 30, 2020 12:00 AM to Tuesday, December 1, 2020 12:00 AM (UTC-09:00) Alaska.
Where:

Joseph Metzger

From: Theresa Taranto
Sent: Monday, November 9, 2020 11:44 AM
To: Joseph Metzger
Subject: RE: RFC-Green Degree (KGB) - Due December 2

FIRM 8090, X and A Zone (A Zone is a small portion on the SE corner of this lot)

Case 10591 opened in 2019, Kendra Johnson CCO.

Theresa Taranto
Mat-Su Borough
Development Services
Administrative Specialist

350 E Dahlia Ave.
Palmer, Alaska 99645
907-861-8574
www.matsugov.us

From: Joseph Metzger <Joseph.Metzger@matsugov.us>
Sent: Friday, November 6, 2020 1:19 PM
To: 'allen.kemplen@alaska.gov' <allen.kemplen@alaska.gov>; 'tucker.hurn@alaska.gov' <tucker.hurn@alaska.gov>; 'melanie.nichols@alaska.gov' <melanie.nichols@alaska.gov>; 'kyler.hylton@alaska.gov' <kyler.hylton@alaska.gov>; 'sarah.wilber@alaska.gov' <sarah.wilber@alaska.gov>; 'mearow@matanuska.com' <mearow@matanuska.com>; 'rglenn@mta-telco.com' <rglenn@mta-telco.com>; 'jthompson@mta-telco.com' <jthompson@mta-telco.com>; 'row@enstarnaturalgas.com' <row@enstarnaturalgas.com>; 'ospdesign@gci.com' <ospdesign@gci.com>; Eric Phillips <Eric.Phillips@matsugov.us>; Jude Bilafer <Jude.Bilafer@matsugov.us>; Cindy Corey <Cindy.Corey@matsugov.us>; Terry Dolan <Terry.Dolan@matsugov.us>; Jim Jenson <James.Jenson@matsugov.us>; Jamie Taylor <Jamie.Taylor@matsugov.us>; Nicole Wilkins <Nicole.Wilkins@matsugov.us>; Karol Riese <Karol.Riese@matsugov.us>; Taunnie Boothby <Taunnie.Boothby@matsugov.us>; Theresa Taranto <Theresa.Taranto@matsugov.us>; John Aschenbrenner <John.Aschenbrenner@matsugov.us>; John Aschenbrenner <John.Aschenbrenner@matsugov.us>; Jill Irsik <Jill.Irsik@matsugov.us>; Michelle Wagner <Michelle.Wagner@matsugov.us>; Cheryl Scott <Cheryl.Scott@matsugov.us>; Brad Sworts <Brad.Sworts@matsugov.us>; George McKee <George.McKee@matsugov.us>; billydoc56@hotmail.com; pcook@alaskan.com; uprise@mtaonline.net
Subject: RFC-Green Degree (KGB) - Due December 2

MEMORANDUM

Date:	November 6, 2020
To:	Various Governmental Agencies
From:	Joe Metzger, MSB Planner
Subject:	Request for Review and Comments Governmental Agencies
Project:	Modification of an existing Conditional Use Permit for a marijuana retail facility

Joseph Metzger

From: Kendra Johnson
Sent: Monday, November 9, 2020 1:51 PM
To: Joseph Metzger
Subject: RE: RFC-Green Degree (KGB) - Due December 2

It was a complaint of odor coming from this location (multiple complaints); however when we inspected – it was observed the odor was coming out of the grow operation in the same building as the retail sales; but was not Green Degree. the owner of the grow operation has taken action to prevent the odor from emitting out of the structure – and AMCO was on site inspecting as well. This is a case that has been resolved and needs closed out – I need to pull the file from the office later this week but it is in a box for my move.

Kendra Johnson, CFM
Code Compliance Officer
(907)861-7861

From: Joseph Metzger <Joseph.Metzger@matsugov.us>
Sent: Monday, November 9, 2020 1:44 PM
To: Kendra Johnson <Kendra.Johnson@matsugov.us>
Subject: FW: RFC-Green Degree (KGB) - Due December 2

Hey Kendra,

Could you give me some information on the case Theresa is referring to here involving Green Degree (KGB). Thank you!

Joe

From: Theresa Taranto <Theresa.Taranto@matsugov.us>
Sent: Monday, November 9, 2020 11:44 AM
To: Joseph Metzger <Joseph.Metzger@matsugov.us>
Subject: RE: RFC-Green Degree (KGB) - Due December 2

FIRM 8090, X and A Zone (A Zone is a small portion on the SE corner of this lot)

Case 10591 opened in 2019, Kendra Johnson CCO.

Theresa Taranto
Mat-Su Borough
Development Services
Administrative Specialist

Public Comments

Matanuska-Susitna Borough
Development Services Division
350 E. Dahlia Avenue
Palmer, Alaska 99645

Matanuska-Susitna Borough
Development Services
NOV 23 2020
Received

54822000L010 8
IMPERIAL ASSOCIATES LTD
3737 MANOA RD
HONOLULU, HI 96822

The Planning Commission of the Matanuska-Susitna Borough will consider the following:

Application:	Modification to an existing Conditional Use Permit for a marijuana retail facility
MSB Code Section:	MSB 17.60 – Conditional Uses
Applicant:	Kerby Coman, on behalf of Green Degree
Location:	2301 S. Knik Goose Bay Road (Tax ID# 1005000L00W-1); within Township 17 North, Range 1 West, Section 17, Seward Meridian
Request:	An application for a modification to an existing conditional use permit under MSB 17.60 – Conditional Uses, has been submitted for the operation of a marijuana retail facility. The request is asking to expand the size of the marijuana retail facility.

The Planning Commission will conduct a public hearing concerning the following application for a conditional use permit on Monday, ***December 21, 2020*** **at 6:00 p.m.** in the Borough Assembly Chambers, 350 E. Dahlia Avenue, in Palmer. This may be the only presentation of this item before the Planning Commission and you are invited to attend. ****Please Note: Due to the ongoing Coronavirus/COVID-19 Pandemic, the method in which this meeting is being conducted may change. If a change to the meeting is necessary, it will be posted on the Borough Website. The public is encouraged to check the Borough Website prior to attending the public hearing for any changes to the meeting schedule or method.*** The Planning Commission members may submit questions to the Planning Commission Clerk concerning the matter or request for more information from the applicant at the time of introduction. All questions and requests submitted by the Commission shall be in writing and copies will be provided to the applicant and made available to all interested parties and the public upon request. Answers to questions and additional material requests will be addressed in the staff report for the public hearing. Commission members may not receive or engage in ex-parte contact with the applicant, other interested parties in the application, or members of the public concerning the application or issues presented in the application.

Application material may be viewed online at www.matsugov.us by clicking on "All Public Notices & Announcements." Application material may also be viewed at the Borough Permit Center. For additional information, you may contact Joe Metzger, Planner II, at 861-7862. ***The public may provide verbal testimony in person at the meeting or telephonically by calling 1-855-290-3803.*** You will hear "Joining conference" when you are admitted to the meeting. You will be automatically muted and able to listen to the meeting. When the Chair announces audience participation or a public hearing you would like to speak to, press *3; you will hear, "Your hand has been raised." When it is your turn to testify, you will hear, "Your line has been unmuted." State your name for the record, spell your last name, and provide your testimony. You have 3 minutes to state your concerns & comments. Written comments can be mailed to: MSB Development Services Division, 350 E. Dahlia Avenue, Palmer, AK 99645. You may e-mail comments to joseph.metzger@matsugov.us. In order to be eligible to file an appeal from a decision of the Planning Commission, a person must be designated an "interested party." See MSB 15.39.010 for the definition of "interested party." The procedures governing appeals to the Board of Adjustment and Appeals are contained in MSB 15.39.010-250, which is available on the Borough home page: www.matsugov.us, in the Borough Clerk's office, and at various libraries within the borough.

Written comments are due on or before ***December 2, 2020*** and will be included in the Planning Commission packet for the Commissioner's review and information. Please be advised that comments received from the public after that date will not be included in the staff report, but will be provided to the Commission at the meeting.

Windward Town & Country Plaza, Inc
Name: Imperial Associates Ltd. ***Mailing Address:*** 3737 Manoa Rd, Honolulu, Hi

Location/Legal Description of your property: Suburban Country Estate Tract C & North Country Estate Lots 10, 11, 12

Comments: We are not in favor of allowing expansion of the retail facility.

Duane Fong – President

Note: Vicinity Map Located on Reverse Side

Matanuska-Susitna Borough
Development Services Division
350 E. Dahlia Avenue
Palmer, Alaska 99645

Matanuska-Susitna Borough
Development Services

NOV 12 2020

Received

54822000L009 7
HANSEN RODNEY A & ANDREA J
1590 W MINNETONKA DR
WASILLA, AK 99654

The Planning Commission of the Matanuska-Susitna Borough will consider the following:

Application:	Modification to an existing Conditional Use Permit for a marijuana retail facility
MSB Code Section:	MSB 17.60 – Conditional Uses
Applicant:	Kerby Coman, on behalf of Green Degree
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Name: RODNEY & ANDREA HANSEN ***Mailing Address:*** 1590 W MINNETONKA DR WASILLA AK 99654

Location/Legal Description of your property: HODGERT CORNER LOT 9

Comments: CONSIDERING WE ARE NOT HAPPY THIS BUSINESS IS ACROSS FROM OUR PROPERTY TO START WITH, WE ARE DEFINITELY AGAINST EXPANSION OF THE SAME!

Note: Vicinity Map Located on Reverse Side

Joseph Metzger

From: ANDREA HANSEN <ahansen@mtaonline.net>
Sent: Friday, January 1, 2021 12:02 PM
To: Joseph Metzger
Cc: Rodney Hansen
Subject: Modification to an existing Conditional Use Permit for marijuana retail facility

Follow Up Flag: Follow up
Flag Status: Flagged

[**EXTERNAL EMAIL** - CAUTION: Do not open unexpected attachments or links.]
To Whom It May Concern:
Although I have replied to this or a similar application once or twice before, again I am objecting to expansion of the marijuana retail facility beside of the church on Knik-Goose Bay across from Minnetonka Drive.
As I have previously stated, this facility lowers the property values of our home and should never have been allowed to open beside of a church. The expansion of such a facility will only encourage more traffic in
an area which is already difficult to navigate, especially as certain times of the day, but will be a temptation for children and teenagers who are nearby. One would hope that cooler heads would prevail and that facilities which sale and possibly grow marijuana would be in areas that are not such a temptation or beside of a church.

Our home is directly across the road with only the highway and a grove of trees separating us. It is my desire to maintain a safe environment for my family and any friends who may visit. Although I have objected to
the very existence of the facility, my concerns have gone unheeded. If the borough is more concerned about revenues than about the safety of families, then those in charge of such decisions need to be replaced.

Again, I object to the expansion of the facility run by Kerby Coman, on behalf of Green Degree.

Sincerely,
Andrea Hansen

PLANNING COMMISSION RESOLUTION

By: Joe Metzger
Introduced: December 7, 2020
Public Hearing: January 18, 2021
Action:

MATANUSKA-SUSITNA BOROUGH
PLANNING COMMISSION RESOLUTION NO. PC 20-48

A RESOLUTION OF THE MATANUSKA-SUSITNA BOROUGH PLANNING COMMISSION APPROVING THE MODIFICATION OF AN EXISTING CONDITIONAL USE PERMIT FOR THE OPERATION OF A MARIJUANA RETAIL FACILITY AT 2301 SOUTH KNIK-GOOSE BAY ROAD, SUITE 1B, TAX ID# 1005000L00W-1; LOCATED WITHIN TOWNSHIP 17 NORTH, RANGE 1 WEST, SECTION 17, SEWARD MERIDIAN.

WHEREAS, an application has been received from Kerby Coman on behalf of Green Degree to modify an existing conditional use permit for the operation of a marijuana retail facility at 2301 South Knik-Goose Bay Road, Suite 1B, (Tax ID#1005000L00W-1); within Township 17 North, Range 1 West, Section 17, Seward Meridian; and

WHEREAS, the applicant is specifically requesting to expand the size of the operation and the hours of operation as specified in Planning Commission Resolution 17-10; and

WHEREAS, MSB 17.60.040 allows a property owner to apply for a modification of a conditional use permit; and

WHEREAS, on March 20, 2017 Green Degree obtained approval from the MSB Planning Commission to operate a marijuana retail facility at the subject property, through the adoption of Planning Commission Resolution 17-10; and

WHEREAS, Green Degree is currently operating in accordance with Conditional Use Permit #176020170003; and

WHEREAS, the use is contained within Suite 1B of the commercial structure; and

WHEREAS, the current size of the use is approximately 619 square feet; and

WHEREAS, the proposed use will be approximately 1,290 square feet in size; and

WHEREAS, there is no industrial equipment or processes that generate noise associated with the use; and

WHEREAS, lots W-1 & W-2 share a common access onto South Knik-Goose Bay Road. There are no other roads associated with this parcel; and

WHEREAS, South Knik-Goose Bay Road is classified as a major collector and is capable of accommodating traffic associated with commercial uses; and

WHEREAS, South Knik-Goose Bay Road has many different uses on its frontage, including residential, commercial, and industrial; and

WHEREAS, the current hours of operation are 11:00 a.m. to 11:00 p.m., Monday thru Saturday; and

WHEREAS, the proposed hours of operation are 8:00 a.m. to 5:00 a.m., daily; and

WHEREAS, the use is located approximately 90 feet from the Knik-Goose Bay Road right-of-way, approximately 206 feet to the

south side lot line, approximately 105 feet to the east side lot line and approximately 175 feet to the west side lot line; and

WHEREAS, the closest residential structure is located across South Knik-Goose Bay Road to the north and is approximately 540 feet from the use; and

WHEREAS, there are three licensed and operating limited marijuana cultivation facilities and one licensed and operating marijuana manufacturing facility located on the subject parcel; and

WHEREAS, persons under the age of 21 are prohibited from entering the facility; and

WHEREAS, according to the application material, loitering will not be allowed; and

WHEREAS, consumption of marijuana is prohibited at the site; and

WHEREAS, the closest school (Snowshoe Elementary) is approximately 8,500 feet away from the use; and

WHEREAS, the application material indicates two signs with the business name and logo will be used. One sign hangs above the door of the facility and the other is proposed to be to the north of the parking area; and

WHEREAS, the Central Mat-Su Fire Department has issued a Non-Structural Fire and Life Safety Certificate of Occupancy; and

WHEREAS, the commercial structure is in full compliance with the applicable State of Alaska fire code; and

WHEREAS, the use has been in operation for over three years and has incurred no violations; and

WHEREAS, the commercial structure meets all applicable setback requirements of MSB 17.55 - Setbacks and Screening Easements; and

WHEREAS, all of the required site plans and operational information have been provided by the applicant; and

WHEREAS, Green Degree has obtained a State of Alaska Retail Marijuana Store License #11031; and

WHEREAS, documentation of the applicant's marijuana retail facility license has been provided to the MSB Development Services Division; and

WHEREAS, the applicant has provided a copy of the approved Certificate of Occupancy; and

WHEREAS, the subject lot was developed for and has been used as commercial since 1984; and

WHEREAS, to the east and northeast there is a religious service building and a mix of residential, vacant, and commercial uses; and

WHEREAS, to the west and southwest are commercial uses; and

WHEREAS, a marijuana retail facility 1,290 square feet in size is required to provide four parking spaces with one ADA compliant space; and

WHEREAS, six customer parking spaces are being provided; and

WHEREAS, each space is at least 20 feet in length and ten feet wide; and

WHEREAS, there are no vertical clearance limitations on site; and

WHEREAS, ADA guidelines require one van accessible parking space, 11 feet wide with a five-foot wide parking aisle, for every 1 to 25 spaces; and

WHEREAS, according to the site plan, one van accessible parking space, at least 11 feet wide with a five-foot wide parking aisle is being provided; and

WHEREAS, the Planning Commission has reviewed this application with respect to standards set forth in MSB 17.60.100, 17.60.150 and 17.60.170; and

WHEREAS, the Planning Commission conducted a public hearing on January 18, 2021 on this matter.

NOW, THEREFORE, BE IT RESOLVED, that the Matanuska-Susitna Borough Planning Commission hereby adopts the aforementioned findings of fact and makes the following conclusions of law supporting approval of Planning Commission Resolution 20-48:

1. The modification to the use will not detract from the value, character, and integrity of the surrounding area (MSB 17.60.100(B)(1)).
2. The modification to the use will not be harmful to the public health, safety, convenience, and welfare (MSB 17.60.100(B)(2)).
3. Sufficient setbacks, lot area, buffers or other safeguards are being provided (MSB 17.60.100(B)(3)).
4. The application material meets all of the requirements of this chapter (MSB 17.60.100(B)(4)).
5. The modification to the use will not negatively affect other properties due to factors such as noise and odor (MSB 17.60.150(A)(1)).
6. Measures are in place to reduce negative affects upon adjacent properties (MSB 17.60.150(A)(2)(a-c)).
7. The modification to the use is compatible with the character of the surrounding area (MSB 17.60.150(A)(3)).
8. The use is more than 1,000 feet away from any school grounds (MSB 17.60.150(B)(1)).
9. The applicant has provided documentation demonstrating all applicable licenses pertaining to 3 AAC 306.005 have been obtained (MSB 17.60.150(D)(1)).

10. The applicant has provided documentation demonstrating the use is in full compliance with all applicable fire code (MSB 17.60.150(D)(2)).

11. The use is located on a parcel that is appropriate for commercial use (MSB 17.60.170(A)(1-3)).

12. The modification to the use meets the minimum number of parking space for retail facilities (MSB 17.60.170(B)).

13. The modification to the use complies with current ADA parking space guidelines (MSB 17.60.170(C).

BE IT FURTHER RESOLVED, the Planning Commission finds this application does meet the standards of MSB 17.60 and hereby modifies the conditional use permit approved on March 20, 2017 for the operation of a marijuana retail facility, by increasing the the retail facility by approximately 671 square feet as indicated in the application material and approving the following condition to supersede condition four of Planning Commission Resolution 17-10:

4. The hours of operation shall not exceed 8:00 a.m. – 5:00 a.m., daily.

ADOPTED by the Matanuska-Susitna Borough Planning Commission this ___ day of _____, 2021.

COLLEEN VAGUE, Chair

ATTEST

KAROL RIESE, Planning Clerk

(SEAL)

YES:

NO:

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PUBLIC HEARING

LEGISLATIVE

Resolution No. PC 21-01

MSB Five Year Timber Harvest Schedule 2021-2025

(Page s 247-293)

PUBLIC HEARING

MATANUSKA-SUSITNA BOROUGH
Community Development Department
350 East Dahlia Avenue • Palmer, AK 99645
Phone (907) 861-7869 • Fax (907) 861-8635
E-mail: lmb@matsugov.us

MEMORANDUM

DATE: November 30, 2020

TO: Matanuska-Susitna Borough Planning Commission

THRU: Eric Phillips, Community Development Manager EP

FROM: Emerson Krueger, Natural Resource Manager EK

FOR: Five-Year Timber Harvest Schedule, Agenda of January 18, 2021

REQUEST:
The Community Development Department seeks review and support from the MSB Planning Commission on the Five-Year Timber Harvest Schedule.

SUMMARY:
This is the first Five Year Timber Harvest Schedule (Schedule)presented to the Assembly for consideration since the adoption of the 2019 update of the Natural Resource Management Units Plan (Plan). This Schedule is consistent with the Plan and Borough code. This Schedule is the first step in the process of offering competitive timber sales from borough-owned property. This Schedule proposes several timber sales over a five-year period divided into annual sale offerings. The Schedule contains an introduction, written harvest unit descriptions, harvest unit area maps, and personal use area descriptions and maps.

The Schedule establishes five years of potential timber harvest offerings within six Natural Resource Management Units totaling approximately 947 acres of land. All sale areas are on land classified resource management within commercial forestland in accordance with Borough code.

Per MSB 23.20.030, the Borough must manage forestland on a sustained yield basis within a decadal period. This Schedule uses an 80-year rotation based on the decadal period between 2011 and 2020 and the dominant tree species. Utilizing the 80-year rotation, the annual allowable cut (AAC) is calculated to be 959 acres per year for the period between 2011 and 2020. The dominant species in the borough is birch, which typically has an 80-year rotation period. The 80-year rotation period is utilized to meet sustainable timber harvest guidelines and to increase the health and productivity of the forests.

SUMMARY OF PUBLIC COMMENTS:

Seven (7) written public comments were received.

One comment was agency related, general in nature without opposition to the timber harvest schedule.

Six (6) written comments were opposed to the increased traffic access and adverse effects of a timber harvest in the Rogers Creek Unit.

All written public comments are attached.

Assembly adoption of a five-year timber schedule is required by MSB 23.20.090 (K).

Upon adoption of this Schedule, the Borough will proceed with updating the Periodic Implementation Schedule. The Periodic Implementation Schedule includes detailed site descriptions for each of the timber harvest areas. The Implementation Schedule will include the location, estimated timber volume, harvest methods, reforestation plan, access, other potential uses of the sale area, and timber sale contract and performance standards. The Implementation Schedule will be posted on the Borough website for 30 days for public review.

After the public review period, timber sale contracts may be offered by a competitive process. Timber offered for competitive sale that is not purchased may be available for over-the-counter sale at a later date.

The Community Development Director shall ensure that local resident timber needs for personal use are made available for personal use firewood before and during any other timber harvest activities.

Forest resource harvests in excess of 64,000 cubic feet or 500 cords of wood per transaction shall be approved by the Assembly prior to contract execution.

RECOMMENDATION:
Community Development respectfully recommends that the Planning Commission adopt a resolution of support recommending Assembly adoption of the Five Year Timber Harvest Schedule.

Attachments:
Five Year Timber Harvest Schedule (28 pp)
Public Comments (9 pp)
Draft Assembly Ordinance (2 pp)
Planning Commission Resolution Serial No. 2021-01 (3 pp)

MATANUSKA-SUSITNA BOROUGH

FIVE-YEAR TIMBER HARVEST SCHEDULE
MSB 007621

February 15, 2021 – December 31, 2025

Prepared by

Community Development Department

Land and Resource Management Division

Adopted_____

BACKGROUND: In 1990 the Matanuska-Susitna Borough (Borough) received approximately 365,000 acres of land as part of the Municipal Land Entitlement Act and various associated land exchanges. Management of these lands was critical; therefore, the Borough adopted a Forest Management Plan in August 1990. The adopted Plan was found to be inadequate for use in managing broad-based resource areas with varying purposes. Public concerns emerged with regard to the need for better public notice, the need to establish "Best Management Practices" (BMP) for timber harvests on Borough land, the manner in how some timber harvests were being conducted in existing Borough management units, and the lack of a field verified forest inventory on Borough land. In response to these concerns, the Borough Assembly placed a moratorium on commercial timber harvests on Borough land in 2005.

In 2006 the Borough received a Timber Inventory[1] identifying eleven Forest Management Units. In 2009, the Borough received an updated Timber Inventory[2] identifying twenty-two Natural Resource Management Units (NRMU's), although only sixteen units were inventoried. The Assembly subsequently adopted a Natural Resource Unit Management Plan (NRMU Plan) in 2010 that replaced the 1990 Forest Management Plan and included removal of the timber sale moratorium.

Pursuant to the Plan and Title 23 of Borough code (MSB 23.20.100); developing a Five Year Timber Harvest Schedule (Schedule) was required prior to the Borough offering commercial timber sales. The Assembly adopted the first Schedule in 2011. An updated Schedule was adopted by the Assembly in June of 2013, offering 960 acres of timber resources for commercial timber harvest. There was one commercial timber sale in 2014. An updated Schedule was adopted by the Assembly in August 2017. There have been no commercial timber sales since 2014 that have resulted in timber harvests. The Assembly adopted an update to the NRMU Plan in October 2019.

MANAGEMENT INTENT OF THE BOROUGH TIMBER SALE PROGRAM: The short- and long-term management of the borough-owned forest resources shall be based on the principles of multiple-use and sustained yield to promote a healthy forest, provide forest products, create economic opportunities, and enhance multiple-use opportunities.

PURPOSE OF THE SCHEDULE: The Schedule is meant to inform the public, timber industry, state government, and other agencies of proposed Borough timber sales. The Schedule provides a basis for public comment and identification of issues. **It is not developed as a decision for any particular timber sale.** Timber harvest contracts will contain additional terms and conditions of the sale. It is important to note that upon adoption of this Schedule, with or without amendments, the LMD will follow the process to create, finalize, and notice an Implementation Schedule on the Borough website prior to implementing future timber sales not previously offered.

2021-2025 SCHEDULE: Borough code requires the Schedule be updated every three years. This is the fourth update to the Schedule since 2011. This Schedule proposes an eighty-year rotation and annual allowable cut (AAC) in accordance with the standard rotation in the Susitna Forestry Guidelines. A shorter rotation may be necessary to manage Borough forests, which are predominantly over-mature and have a high defect rate and/or are experiencing severe insect-related mortality. Given the relatively small acreage included in each harvest area, a majority of the NRMU will retain the old growth timber stands. Borough timber harvests are managed on a ten-year cycle. This Schedule begins the second decadal period (2020-

[1] *Matanuska-Susitna Borough: Forest Inventory Report-Sanders Forestry Consulting December 2006*
[2] *Forest Inventory Report Phase II, Sanders Forestry Consulting and Alaska Map Company, June 2009*

2030) as outlined in the NRMU plan. It is important to note that the NRMU plan recognizes and allows harvests in excess of the AAC during one or more years, provided the AAC is not exceeded for the ten-year period.

This Schedule reflects the management intent of the Borough timber sale program by providing a sustained yield to promote a healthy forest, provide forest products, enhance multiple-use opportunities, to recognize the needs and interests of timber resource requests, create economic development opportunities, and provide public access for public recreation. This Schedule meets the legislative requirements of MSB Code 23.20.070, 23.20.090 and 23.20.100, and acts as a basis for allocating Borough resources in considering, designing and conducting timber sales. Yearly proposed harvest units and schedules are at the end of this section. The Borough develops the Schedule for commercial timber sales based on management intent of land within a Natural Resource Management Unit.

TIMBER BASE: Timber resource estimates are based on the Matanuska-Susitna Borough Forest Inventory Report Phase II, Sanders Forestry Consulting, June 2009 (Inventory). The AAC standing timber volume on Commercial Forestland is based on the Inventory. The Inventory is an average of the Borough Commercial Forestland within the natural resource management units (NRMUs) inventoried at the time. However, additional timber cruises specific to each harvest unit may be used to adjust the volume of timber resources prior to small timber sale contracts being offered. Large scale timber sales will require an independent third party scaling company hired by the timber purchaser to account for all timber removed for purchase, processing and/or export.

TIMBER SPECIES, VOLUME, TREES PER ACRE, AND SIZE CATEGORY: Of the 16 NRMU commercial forestland acres, approximately 80% is mixed forest sawtimber (spruce > 9", birch >11"); approximately 10% is hardwood sawtimber (Cottonwood >11"); and approximately 10% is pole timber (spruce 5-9", birch 5-11"). The 2009 timber inventory indicates an average net volume of 1,653 cubic feet of wood per acre or 190 logs per acre. The poletimber and sawtimber size categories (both mixed and hardwood) are proposed for the harvests.

SUSTAINED YIELD: All commercial and non-commercial borough-owned forestland is managed on a sustained yield basis to provide forest timber products based on the rotation period for the dominant timber type. The dominant timber type in the proposed units is birch.

AUTHORIZATION FOR THE SALE, LEASE OR PERMIT OF FOREST PRODUCTS: Forest product sales from the approved Implementation Schedule may be offered by competitive bid or competitive request for proposals (RFP). Forest product sales in excess of 500 cords of wood per transaction must be approved by the Assembly prior to contract execution. Forest product sales less than 500 cords of wood may be approved by the Manager. Firewood sales, timber sales, salvage sales, and non-timber product sales, leases, or permits for less than five years in duration, and for less than 100 cords of wood and salvage sales, or less than $25,000 for non-timber product sales may, after public notice (MSB Code 23.05.025) be offered by the manager over the counter without competitive bid.

Salvage and personal use permit sales are exempt from the Schedule requirements, except that personal use harvest areas shall be included in the Schedule for informational purposes. Timber harvest volumes sold, leased or permitted, and harvested for personal use shall not count against the annual allowable cut limitations established in MSB Code 23.20.040.

All Borough timber harvest sales must comply with the Alaska Forest Resources and Practices Act and MSB Code. Timber harvest contracts include requirements to limit or avoid negative effects on public health, safety, and welfare concerns. Timber harvesting requires an approved detailed plan of operations.

PROPOSED UNIT DESCRIPTIONS: The Borough is proposing commercial timber harvests within the **Kashwitna, Point MacKenzie, Rabideux Creek, Sheep Creek, and Susitna River NRMU's** for inclusion in the 2021-2025 Schedule.

PROPOSED HARVEST UNIT LOCATIONS: Following are written descriptions and maps for each of the proposed harvest units. Each description and map indicates the Township, Range, and Section, nearest road name and approximate road milepost. Community Councils are noted where applicable. All units will be located within areas identified in the NRMU plan as Commercial Forest Land; and are identified by dark grey shading with black outlines on unit maps.

Items required for the Five-Year Timber Harvest Schedule in accordance with Borough Code, MSB 23.20.100(C) (1-14), are included in the attached unit descriptions. The unit descriptions include acreage of the harvest area, timber species, volume, development patterns, surrounding land use, water bodies, buffers, and estimated minimum price based on current market value.

ACRES: The Inventory indicates that there are 79,363 acres of commercial forestland within the 16 NRMU units that have been inventoried. This acreage has been reduced by the timber volume harvested in 2014 and 2016 as well as the estimated timber volume burned during the McKinley Fire in 2019. The estimated volume of wood on the commercial forestland is 122,626,957 cubic feet of wood.

EXISTING LAND USE PLANS: Included below are plans that may apply to most if not all proposed units. See individual proposed harvest units for additional applicable local land use plans.

- MSB Borough Wide *Comprehensive Plan* (2005 update)
- MSB Point MacKenzie Community Comprehensive Plan (2011)
- MSB Willow Community Comprehensive Plan (2013)
- MSB *Natural Resource Management Unit Plan* (2019)
- MSB *Recreational Trails Plan* (2016)
- MSB *Parks Recreation and Open Space Plan* (2001)

Borough staff will consult adopted Alaska Department of Natural Resources Area Plans as part of the review of regional management goals and guidelines. State Area Plans do not apply to Borough land.

- *Susitna Matanuska Area Plan* (2011)
- *Southeast Susitna Area Plan* (2009)

PUBLIC HEALTH, SAFETY, and WELFARE CONCERNS: The Borough has not identified any public health, safety, or welfare concerns at this time. To the extent they are identified later, the Borough will attempt to address them through the individual timber sale contract provisions for the harvest area, or the permits that address the operation. Timber harvest contracts exceeding 40 acres in size require a Borough approved plan of operations that must address noise, lighting, truck traffic, and road maintenance; and may require a Timber Harvest/Transportation Permit, Borough Code MSB 28.60.080.

WATER BODIES AND BUFFERS: Borough Code MSB 23.20.070 and the NRMU Plan provide guidelines for buffers to reduce the visibility and off-site effects on roads, private property, scenic highways, trails and water bodies during timber harvests. Riparian buffers are required by the Alaska Forest Resources and Practices Act and Regulations for Region II. Additional agency requirements will be implemented as necessary. See individual proposed harvest units for specific buffer information. All-season access and harvest (OA) is allowed in some timber sale areas. However, additional access restrictions such as winter access required (OWA) is required for some of the units, or portions thereof. The Schedule and vicinity maps reflect the access requirements for each harvest area.

SOILS AND TERRAIN: The United States Department of Agriculture, Natural Resource Conservation Service, Soil Survey, Matanuska-Susitna Valley and Yentna Area were used to provide soil descriptions for each NRMU. See individual proposed harvest units for specific soil information.

COST REVENUE ANALYSIS: The Borough's current fees are; $25 per cord for **personal use** firewood and $1.75 per lineal foot saw-timber and/or house-logs. The FMV for Borough **commercial value** timber varies significantly between NRMU's due to type, size, access, and other mitigating factors. Personal use harvest areas will require additional administration by staff (office and field), additional site preparation (access, parking), and additional contracting for site remediation (mechanical scarification) after harvest. These additional requirements will create additional costs to the Borough because personal use sales may not cover costs that are normally born by the purchaser in commercial sales. Both commercial and personal use timber harvests on forestland require seven years of follow up for compliance with the Alaska Forest Resources Practices Act requirements for regeneration.

PERIODIC IMPLEMENTATION SCHEDULE: The Borough will conduct more detailed fieldwork to assess site conditions and design the proposed timber harvest areas. For those areas covered under an approved Schedule, the Borough will prepare a Periodic Timber Harvest Implementation Schedule (Implementation Schedule). Each proposed timber harvest area will be evaluated prior to preparing the Implementation Schedule. This fieldwork will allow a thorough review of the conditions on the ground and provide site-specific information for each sale offering describing the location, estimated timber volume, harvest methods, reforestation plan, access and other potential uses of the sale area. Much of this fieldwork has already been completed for the areas identified in the Schedule. Harvest units included in previous implementation schedules are included in this Schedule. The Periodic Implementation Schedule will ensure that local resident timber needs for personal use are made available for personal use firewood before and during any other timber harvest activities.

ANNUAL ALLOWABLE CUT: The AAC for the decadal period at the 80-year rotation length is 959 acres. For this Schedule, average cubic feet per acre was applied to existing data to arrive at an estimate of AAC. The rotation is based on the dominant timber type and condition of the forest health. The units contain over mature birch and spruce. Defect and disease (beetle kill and birch leafminer) are present in both birch and spruce, respectively. Due to the age and declining value of the predominant timber type on commercial forestland, an 80-year rotation could help reverse some of the degenerating forest conditions and provide for more early succession wildlife habitat and forage. The 80-year rotation length is the standard rotation length for birch in the Susitna Forestry Guidelines. The NRMU Plan allows for flexibility in management of the Units. Management will be in compliance with guidelines and intent of the NRMU and Borough code. The goal is to provide for diverse forestland by utilizing multiple tools and resource management techniques to foster diverse and productive forestland. Some portions of the

over mature stands will be allowed to regenerate naturally, to provide wildlife habitat for animals that require more open areas, tree cavity nesting, and other benefits of a climax stand.

The proposed five-year harvest schedule represents ***788 acres*** of Commercial Forest Land. Harvest volumes in an individual management unit may be above or below the AAC to allow for efficient management, and responsiveness to market fluctuations. The proposed Schedule is within the ten-year AAC estimated acres. However, most of these areas have not had a commercial timber harvest since the 2006 inventory. Although the proposed Schedule may exceed the AAC; actual timber harvests have not. This Schedule is designed to bring portions of these NRMU's into a new rotation period, reduce forest fuels and improve forest health. This five-year harvest schedule includes ***788*** acres of land and approximately **1,345,083** cubic feet of wood. The proposed five-year harvest schedule for 2021-2025 is only about 82% of one year's volume of annual allowable cut utilizing the 80-year rotation and substantially less than the five years AAC of 7,926,780 cubic feet of wood.

MARKET TRENDS: This Schedule was drafted in response to recent changes in the local timber industry and the overwhelming volume of timber available from state and privately owned land. Local timber businesses are often paid to clear the over-mature trees and insect damaged spruce and birch. Discussions with local businesses suggest there is little demand for timber from Borough forestland. This Schedule was prepared in response to the lack of any commercial timber sales on borough forestland since 2014. Previous commercial timber harvest schedules were geared towards larger harvest units. This Schedule includes smaller harvest units located throughout accessible borough commercial forestland.

It is important to note that commercial salvage sale opportunities became abundant in the Point MacKenzie, Big Lake, Wasilla, Knik, Houston, Talkeetna and Butte area beginning in 2012 and lasting into 2016; as a result of clearing for the PMRE project, the port project, conversions of land use for material extraction included support for road realignments, fuel reduction projects, new school and library sites, airports and other public facilities construction. In conjunction with State timber sales and conversion projects, the timber market is inundated. Since that time, timber sales (both State and Borough) have been dramatically reduced. Although large Borough timber sales were offered in 2017, 2018, and 2019, there have been no sales.

This schedule reflects the Borough's objective to offer timber for the small local market, salvage dead timber, and reduce the wildfire hazard by harvesting spruce beetle killed trees. Sales are broken up into numerous units. Small to medium size sales will be offered to meet current demand for sawlogs, house logs and fuel wood. Where possible, sales within the wildland-urban interface will be designed to reduce the risk of wildfire to the communities. The minimum bids are proposed to be based on the net cubic feet of merchantable timber subtracting the cubic feet of defective timber from the price. The harvests would be required to cull the defective and over-mature trees to promote regeneration and improve forest health.

The Borough plans to offer a variety of timber products providing for commercial and personal use opportunities simultaneously during this Schedule. This schedule will be subject to public review and comment.

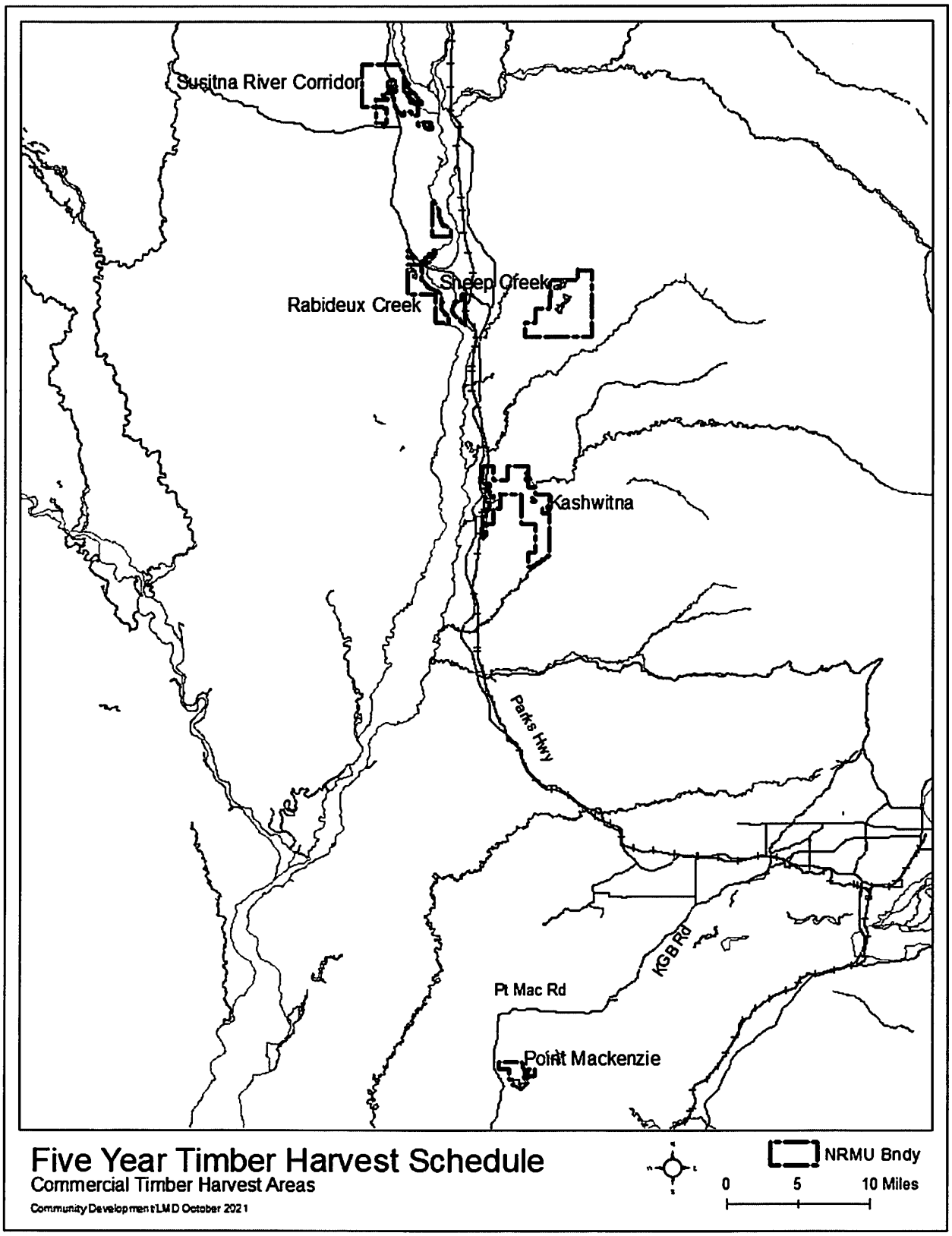
PROPOSED FIVE YEAR TIMBER HARVEST SCHEDULE TABLES

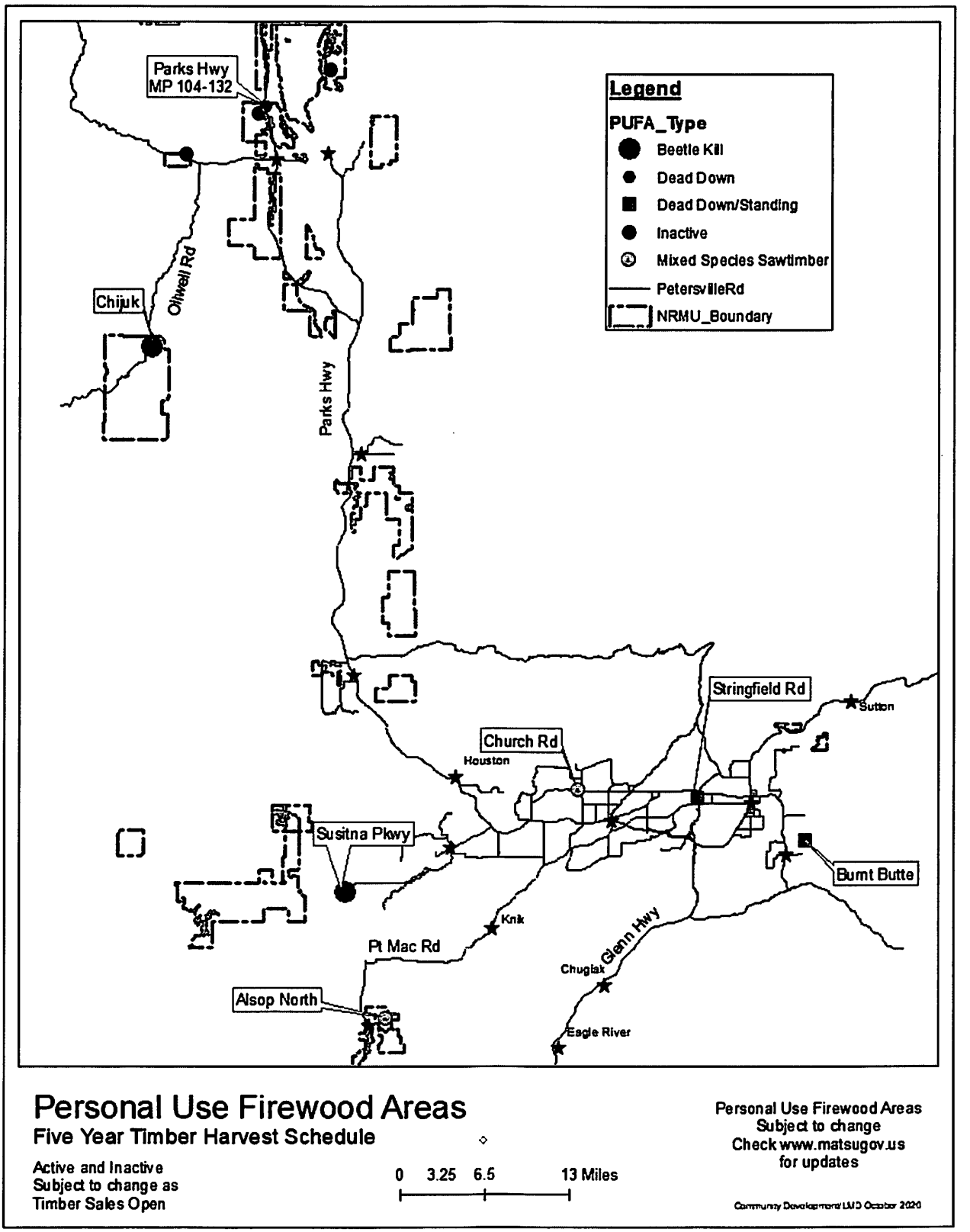
HARVEST SCHEDULE YEARS 2021-2025 (ESTIMATES ONLY)

Year	HARVEST UNIT	SALE NUMBER	ACRES	NET CUNITS	NET MBF	GREEN TONS	ACCESS
2021	Kashwitna C	MSB007676	40	688	179	2,069	OWA
	Alsop – A	MSB006569 A	119	2,020	524	6,297	OA
	Sheep Creek B	MSB006790 B	60	1,046	261	3,281	OWA
	Susitna River	MSB006573	54	800	205	2,497	OA/OWA
		Subtotal	**272**	**4,562**	**1,169**	**14,145**	
2022	Rabideux Cr A	MSB006743	39	659	170	2,034	OWA
	Alsop B	MSB006569 B	75	1,278	330	3,969	OA
		Subtotal	**114**	**1,937**	**500**	**6,003**	
2023	Sheep Creek C	MSB006790 C	100	1,744	436	5,469	OWA
		Subtotal	**100**	**1,744**	**436**	**5,469**	
2024	Sheep Creek – E	MSB006790 E	79	1,378	344	4,320	OWA
		Subtotal	**79**	**1,378**	**344**	**4,320**	
2025	Rabideux Cr – B	MSB006743 B	80	1,353	348	4,173	OWA
	Sheep Creek – G	MSB006790 G	117	2,040	510	6,399	OWA
	Sheep Creek – F	MSB006790 F	25	436	109	1,367	OWA
		Subtotal	**222**	**3,829**	**967**	**11,393**	
		Total	**788**	**13,451**	**3,416**	**41,877**	

ACTIVE PERSONAL USE FIREWOOD AREAS	ACRES	Description	TIMBER TYPE
Burnt Butte UNITS 1, 2, 3 (MSB006803)	100	Dead down / standing	ALL
Chijuk Creek (MSB007484)	6	Dead down / standing	Beetle Kill Spruce
Church Road (MSB007182)	19	Mixed Sawtimber	All
Parks Highway MP 104-137 (MSB006582)	24	Dead down / standing	Beetle Kill
Alsop North (MSB006578)	37	SEE PUFA PERMIT	Mixed Sawtimber
Stringfield Road (MSB007682)	26	Dead down / standing	Mixed Sawtimber
West Susitna Parkway (MSB007683)			
INACTIVE PERSONAL USE FIREWOOD AREAS	**ACRES**	**Description**	**TIMBER TYPE**
Chase Remote (MSB003092)	225	Dead Down / Standing	All
Moose Creek (MSB006806)	10	Mixed Sawtimber	All
Susitna River Corridor (MSB006580) A-C	25	Dead Down/Standing, or Sawtimber	All

Items required for the Schedule contents per Borough Code, MSB 23.20.100(C) (1-14), are found in the following unit descriptions. The required information includes the acreage of the harvest area, timber species, volume, development patterns and surrounding land use, water bodies and buffers, and estimated minimum price based on current market value and inventory volumes.


Susitna River Corridor
Sheep Creek
Rabideux Creek
Kashwitna
Parks Hwy
KGB Rd
Pt Mac Rd
Point Mackenzie
Five Year Timber Harvest Schedule
Commercial Timber Harvest Areas
Community Development LMD October 2021
NRMU Bndy
0 5 10 Miles


Parks Hwy
MP 104-132
Legend
PUFA_Type
Beetle Kill
Dead Down
Dead Down/Standing
Inactive
Mixed Species Sawtimber
PetersvilleRd
NRMU_Boundary
Chijuk
Olnwell Rd
Parks Hwy
Stringfield Rd
Sutton
Church Rd
Houston
Susitna Pkwy
Burnt Butte
Knik
Pt Mac Rd
Glenn Hwy
Chuglak
Alsop North
Eagle River
Personal Use Firewood Areas
Five Year Timber Harvest Schedule
Active and Inactive
Subject to change as
Timber Sales Open
0 3.25 6.5 13 Miles
Personal Use Firewood Areas
Subject to change
Check www.matsugov.us
for updates
Community Development/LMD October 2020

FIVE-YEAR TIMBER HARVEST SCHEDULE
UNIT DESCRIPTION
Kashwitna NRMU

One timber harvest is being proposed in the Kashwitna River Natural Resource Management Unit (NRMU) for inclusion in the Five Year Timber Harvest Schedule. The purpose of this sale is to provide an opportunity for the harvest of timber products.

PROPOSED HARVEST UNIT LOCATION AND ACCESS: Section 5, Township 21 North, Range 04 West, S.M. Alaska, and lying east of the Parks Highway at milepost 83. The proposed harvest is within the Willow Area Community Organization area. Access to this timber harvest area would be from the Parks Highway and via existing timber roads. Kashwitna C harvest unit includes 40 acres of commercial forest land on MSB Parcel Tax ID 21N04W05A004.

ACRES, VOLUME AND SPECIES: The NRMU contains 9,360 acres including approximately 5,038 acres of commercial forestland. The commercial forestland is comprised of (39%) of mixed forest sawtimber (spruce > 9", birch >11"), 4% hardwood sawtimber, and 57% poletimber (spruce 5-9", birch 5-11"). One timber harvest is proposed in the Unit for inclusion in the Five Year Timber Harvest Schedule and includes approximately 5% of the proposed Schedule acreage.

The proposed timber harvest would be for all dead or live birch, spruce, aspen and cottonwood timber greater than 7" at breast height (dbh) (See Table pg.6 volumes). Timber resources are comprised of (84%) of mixed forest sawtimber (spruce > 9", birch >11"), 11% hardwood sawtimber (Cottonwood > 11"), and 5% pole timber (spruce 5-9", birch 5-11") diameter at breast height dbh.

INFRASTRUCTURE: The Kashwitna NRMU has access from the Alaska Railroad and the Parks Highway. The Talkeetna Mail (Herning) Trail meanders through the unit, generally in a north/south direction through the portion of the center of the unit mainly in wetlands and low areas. The Kashwitna Trespass Trail runs from southwest to northeast through the unit, generally paralleling the Kashwitna River to the north. This trail is the primary access to the harvest area.

SURROUNDING LAND USE: The adjoining land is owned by the State of Alaska. Timber harvests have taken place on these lands and general dispersed recreational uses also occur. Privately owned land exists outside of the unit to the west along the highway corridor and some to the north of the unit and north of the Kashwitna River. Two large active gravel pits are nearby along the highway.

EXISTING LAND USE PLANS: The harvest unit location is addressed in the following land use plans:

- MSB *Natural Resource Management Unit Plan* (2019)
- MSB Willow Community Comprehensive Plan (2013)
- MSB Comprehensive Plan (2005)
- Alaska Department of Natural Resources, *Southeast Susitna Area Plan* (2009), the State land adjoining the unit has been designated as forestry. This plan does not apply to Borough land.

OPERABLE WINTER ONLY (OWA): The management intent for the Kashwitna East Natural Resource Management subunit is for general resource management, primarily to protect water resources

and encourage continued recreational uses of the area, while meeting some wood product and earth material needs. Seasonal operations restrictions occur in some areas in the subunit, including in the Kashwitna C Harvest Unit. Seasonal timber operations may be opened, closed, limited and/or suspended by the Borough at any time determined necessary by the Borough to protect and/or preserve Borough property, resources, soils, water quality, fish, wildlife, fish & wildlife habitat, wetlands and waterbodies.

COMMUNITY COUNCIL: The proposed Kashwitna harvest unit is within the Willow Area Community Organization area.

PUBLIC HEALTH, SAFETY, and WELFARE: The Borough has not identified any public health, safety, or welfare concerns at this time. To the extent they are identified later, the Borough will attempt to address them through the individual timber sale contract provisions for the harvest area, or the permits that address the operation. Timber harvest contracts include requirements to limit or avoid negative effects on public health, safety and welfare. Timber harvesting requires an approved detailed plan of operations that addresses noise, lighting, truck traffic, scarification and road maintenance. The Mat-Su Borough Natural Resource Management Unit Plan (2019) outlines buffer distances required to protect water bodies, wetlands, trails and wildlife habitat during and after timber harvest. Appropriate buffers will be required. The sites will be thoroughly evaluated prior to preparing an Implementation Schedule.

SOILS and TERRAIN: The United States Department of Agriculture lists the soils as Nancy silt loam, 0-3 percent. The profile is 0-3 inches grayish brown silt loam; 3-24 inches dark reddish brown and dark grayish brown silt loam, and 24-60 inches of variegated very gravelly sand. General management considerations; the soil is well suited for forestry. When the canopy is removed and the ground surface disturbed, bluejoint reedgrass could potentially dominate this soil and inhibit successful tree regeneration. Some soil related factors are wind erosion, water erosion, frost action, low fertility, depth to gravel and cobbles, cutbank instability, excess surface fines, and excessive permeability.

COST REVENUE ANALYSIS: 40 acres of land in the Kashwitna NRMU are available for commercial timber harvest through this offering. The Borough proposes one offering for the harvest unit scheduled for one year.

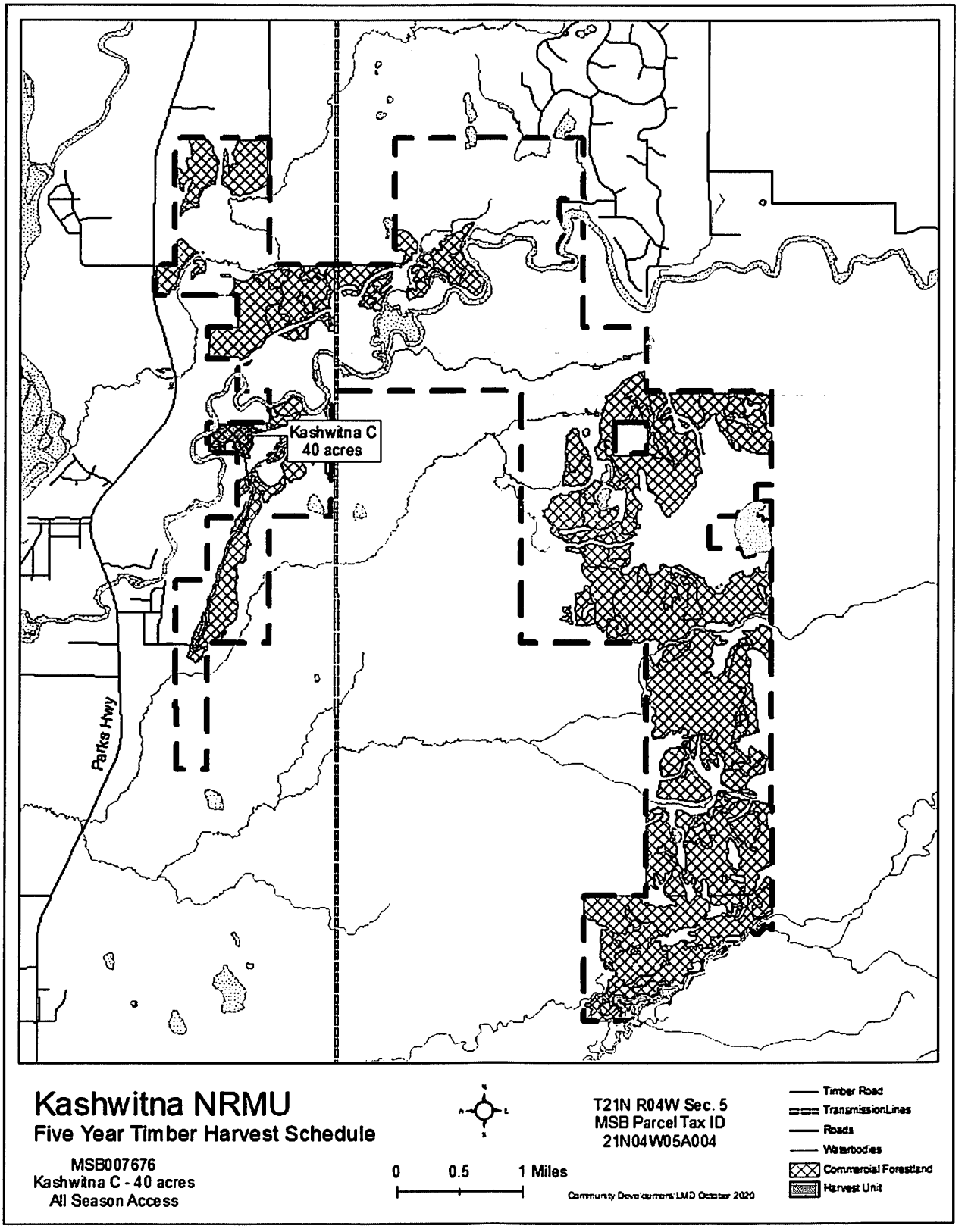
The commercial value of Borough timber varies greatly dependent on location, access, road building costs, type, size, strata and seasonal access restrictions. Some of the recent State and Borough timber harvest offerings located with much easier access did not receive any bids. The Borough had offered minimum bids as low as $5.00 per cunit for birch and $50 per MBF for Spruce sawtimber. However, the Borough did not receive any bids on ten Over-the-Counter timber sales at those prices. Recent State timber sales were offered for virtually the cost of building logging roads into the areas offered. Actual minimum bids will be addressed prior to competitive offering.

Borough code requires timber be sold by volume (cubic feet, cunit, green tons, board feet or a combination) not acreage. The Borough may use a competitive Request for Proposal (RFP) or competitive sealed bid sale process to solicit offers. The RFP process requires certain measureable criteria that provide sufficient information to make an informed decision to select a proposal in the best interest of the Borough. All timber sale contracts in this Schedule must be approved by the Assembly prior to execution.

ESTIMATED MINIMUM BIDS:
Beetle-kill spruce saw logs (greater than 9" dbh) to be sold at no cost. Removal of the dead trees from the forest is considered to be in the best interest of the Borough and a public service.

All birch, cottonwood, and aspen greater than 7" will be sold by the green ton ($2.00 green ton), and all live spruce 7"-9" dbh will be sold by the green ton ($2.00 green ton).

PERSONAL USE FIREWOOD AREAS (PUFA's): PUFA's may be available either in or adjacent to the Kashwitna Unit after a timber harvest (MSB 23.20.110).


Kashwitna C
40 acres
Parks Hwy
Kashwitna NRMU
Five Year Timber Harvest Schedule
MSB007676
Kashwitna C - 40 acres
All Season Access
0 0.5 1 Miles
T21N R04W Sec. 5
MSB Parcel Tax ID
21N04W05A004
Timber Road
TransmissionLines
Roads
Waterbodies
Commercial Forestland
Harvest Unit

FIVE-YEAR TIMBER HARVEST SCHEDULE
UNIT DESCRIPTION
Point MacKenzie NRMU

PROPOSED HARVEST UNIT LOCATION AND ACCESS: The Point MacKenzie NRMU is located east of and along West Point MacKenzie Road beginning just north of Alsop Road and ending at the Port MacKenzie Port District near the southern terminus of Point MacKenzie Road. The NRMU is divided into three subunits. There are several potential transportation routes to access and/or remove the timber resources for processing and/or export, including Point MacKenzie Road, Knik Goose Bay Road, and Port MacKenzie. Primary access to the Alsop Road subunit harvest area is from Alsop Road. Alsop Road subunit is classified Resource Management with a primary designation of Habitat, Resource Management, and Water Resources. The subunit is available for forest management and commercial timber harvest. The two harvest units within the Alsop subunit are located in T15N R04W Sections 27 and 34, Seward Meridian. Both harvest units occur on MSB Parcel Tax IDs 6822000T00A and 6313000T00A-2.

ACRES, VOLUME AND SPECIES: The Point MacKenzie NRMU contains 3,174 acres of commercial forestland. The Alsop subunit contains 1,774 acres of commercial forestland, comprised of 63% of mixed forest sawtimber (spruce > 9", birch >11"), 15% hardwood sawtimber, and 22% poletimber (spruce 5-9", birch 5-11"). The timber inventory of the Point MacKenzie NRMU indicates a net volume of 1,704 cubic feet of wood per acre. The proposed timber harvest would be for all dead or live birch, spruce, aspen, and cottonwood timber greater than 7" dbh and comprises 25% of the Schedule acreage.

INFRASTRUCTURE: The Point MacKenzie Road runs north/south along the west boundary of the Alsop subunit. Alsop Road runs east/west through the middle of the subunit.

SURROUNDING LAND USE: There are numerous trails and undedicated pioneer type roads intersecting Point MacKenzie Road. These are used for winter and summer recreation and hunting, or for access to private property. Most of these trails, except for the Figure 8 Loop Trail, are not dedicated and are not in the *Recreational Trails Plan.* The Figure 8 Loop Trail is identified in the *Recreational Trails Plan,* but is not dedicated. Numerous privately owned parcels exist around the East Lake, Lost Lake, Twin Island Lakes and other various lakes in the vicinity. Other private land, mostly undeveloped, also exists along Alsop Road. There are some dispersed residential and recreational cabins on the adjacent state land. The area is currently used for a variety of dispersed recreational uses.

The Alsop/Point MacKenzie Road intersection has seen large scale development. The Alsop Interim Material District occupies 40 acres west of the intersection and has provided nearly one million tons of gravel for road and port projects. The Goose Creek Correctional Facility is built on the northeast corner of the intersection. A water/wastewater facility that services the Facility is built on the southeast corner of the intersection. A commercial sawmill operates on a parcel just north of the proposed sale area at the intersection of Alsop and Rex Bell Road. Except for the developed sites, dispersed recreation occurs in this area.

EXISTING LAND USE PLANS: The harvest unit boundaries are within the following land use plans:

- Mat-Su Borough *Natural Resource Management Unit Plan* (2019)
- Mat-Su Borough, *Recreation Trails Plan* (2016)

- Point MacKenzie Comprehensive Plan, (2011)
- Alaska Department of Natural Resources, *Southeast Susitna Area Plan* (2009) with designated uses for Forestry, Public Recreation and Water Resources. This plan does not apply to Borough land.

OPERABLE ALL SEASON: The Alsop Road subunit is managed to support development activities while protecting important habitat and watershed land. Development activities include, but are not limited to, such things as sewer and water facilities, public safety buildings and other public facilities, and any related commercial and residential development. Any land that the Assembly approves for commercial, industrial, residential or public facilities shall be reclassified and removed from the management subunit.

Rock, sand, and gravel extraction, and timber harvest are permitted in areas outside of the wildlife corridor and watershed areas. Timber harvests are allowed on commercial forestland. Salvage of timber resources shall occur prior to any public facility, settlement, road, utility or similar construction. Seasonal timber operations may be opened, closed, limited and/or suspended by the Borough at any time determined necessary by the Borough to protect and/or preserve Borough property, resources, soils, water quality, fish, wildlife, fish & wildlife habitat, wetlands and waterbodies.

PUBLIC HEALTH, SAFETY, and WELFARE: The Borough has not identified any public health, safety, or welfare concerns at this time. To the extent they are identified later, the Borough will attempt to address them through the individual timber sale contract provisions for the harvest area, or the permits that address the operation. Timber harvest contracts include requirements to limit or avoid negative effects on public health, safety, and welfare. Timber harvests require an approved detailed plan of operations that address noise, lighting, truck traffic, scarification and road maintenance. A Timber Transport Permit may be required for timber harvests greater than 40 acres in size. The MSB Natural Resource Management Unit Plan (2019) outlines buffer distances required to protect water bodies, wetlands, trails and wildlife habitat during and after timber harvest. Appropriate buffers are required. The sites will be thoroughly evaluated prior to preparing an Implementation Schedule.

COMMUNITY COUNCIL: The proposed Point MacKenzie harvest units are within the Point MacKenzie Community Council area.

SOILS and TERRAIN: The United States Department of Agriculture (USDA) has classified soils nationwide to evaluate agricultural potential. These classifications are based on soil characteristics including depth, composition and drainage. The Point Mackenzie NRMU has areas identified as having Class III and Class IV soils dispersed throughout each subunit. The United States Department of Agriculture lists the soils as Estelle silt loam, sloping and Yohn silt loam, rolling. Both soils have 0-60 inches of silts, loams, and sandy loams before encountering cobble and gravelly soils.

Both soils are well suited for forestry and agriculture. Some soil related concerns are wind erosion, water erosion, frost action, low fertility, depth to gravel and cobbles, cutbank instability, excess surface fines, and excessive permeability. Agricultural activity takes place throughout the unit.

COST REVENUE ANALYSIS: Approximately 194 acres of timber resources are available in the Point MacKenzie NRMU in this Schedule that include 330,576 cubic feet of wood. The Borough proposes two offerings encompassing two harvest units scheduled over one or more years.

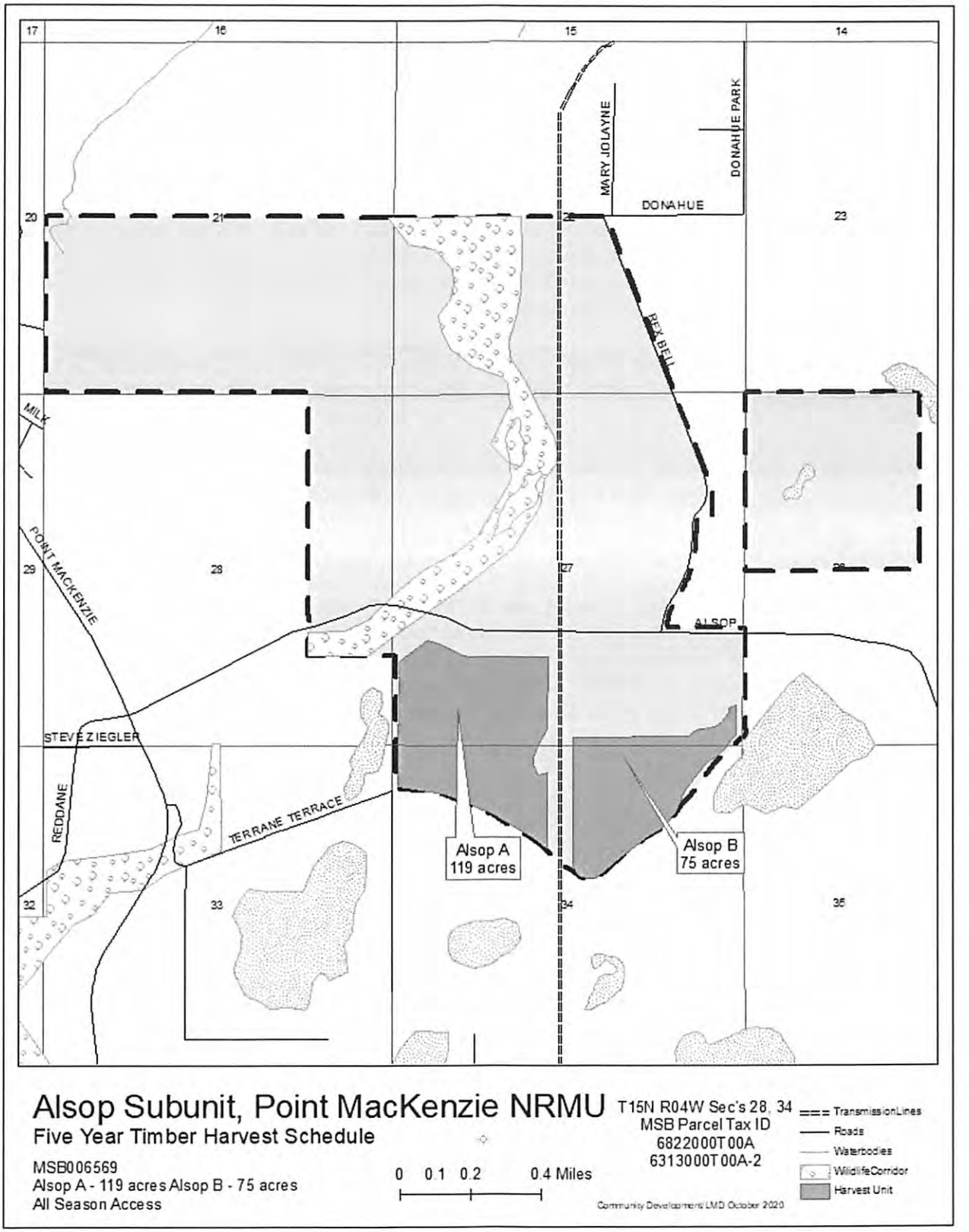
The commercial value of Borough timber varies greatly dependent on location, access, road building costs, type, size, strata and seasonal access restrictions. The Borough just completed a salvage sale of standing timber (all species greater than 6" dbh) in the same area of the Alsop subunit. The 58 acre parcel salvage sale was offered with a minimum bid of $14,790 (about $15 per cunit). The highest bid received was $16,000 (about $16 per cunit).

Borough code requires timber be sold by volume (cubic feet, cunit, green tons, board feet or a combination) not acreage. The Borough may use a competitive Request for Proposal (RFP) or competitive sealed bid sale process to solicit offers. The RFP process requires certain measureable criterion that provides sufficient information to make an informed decision to select a proposal in the best interest of the Borough. All timber sale contracts in this Schedule must be approved by the Assembly prior to execution.

ESTIMATED MINIMUM BIDS:
Beetle kill spruce saw logs (greater than 9" dbh) to be sold at no cost. Removal of the dead trees from the forest is considered to be in the best interest of the borough and a public service.

All birch, cottonwood, and aspen greater than 7" will be sold by the green ton (2.00 green ton).
All live spruce 7"-9" dbh will be sold by the green ton (2.00 green ton)

PERSONAL USE FIREWOOD AREAS (PUFA's): PUFA's will be available either in or adjacent to the Point MacKenzie NRMU before and during any timber harvest (MSB 23.20.110).


17
16
15
14
MARY JO LAYNE
DONAHUE PARK
DONAHUE
20
21
22
23
REX BELL
MILK
POINT MACKENZIE
29
28
27
ALSOP
STEVE ZIEGLER
REDDANE
TERRANE TERRACE
Alsop A
119 acres
Alsop B
75 acres
32
33
34
35
Alsop Subunit, Point MacKenzie NRMU
Five Year Timber Harvest Schedule
MSB006569
Alsop A - 119 acres Alsop B - 75 acres
All Season Access
0 0.1 0.2 0.4 Miles
T15N R04W Sec's 28, 34
MSB Parcel Tax ID
6822000T00A
6313000T00A-2
Community Development LMD October 2020
TransmissionLines
Roads
Waterbodies
WildlifeCorridor
Harvest Unit

FIVE-YEAR TIMBER HARVEST SCHEDULE
UNIT DESCRIPTION
Sheep Creek NRMU

PROPOSED HARVEST UNIT LOCATION AND ACCESS: The Sheep Creek NRMU is located within Sections 19, 20, 29, 30 & 31, Township 24 North, Range 03 West, SM Alaska, lying east of the Talkeetna Spur Road at approximately milepost 3. The proposed harvest units are within the Susitna Community Council Area. Access to this proposed harvest areas is from South Southfork Road. This unit is located approximately four miles east of the Susitna River, and between Sheep Creek to the south and the North Fork of Montana Creek to the north.

The Borough is proposing five timber harvest units in the Sheep Creek NRMU for inclusion in the Five Year Timber Harvest Schedule. The purpose of these sales is to provide opportunities for the harvest of timber products.

The harvest units lie within Sections 19, 20, 29, 30 & 31, Township 24 North, Range 03 West, SM Alaska, lying east of the Talkeetna Spur Road at approximately milepost 1. The harvest units are within MSB Parcel Tax IDs 24N03W19A001, 24N03W20A001, 24N03W29A001, 24N03W30A001, and 24N03W31A001.

ACRES, VOLUME AND SPECIES: Sheep Creek NRMU contains 9,700 acres, of which 4,924 acres is commercial forestland. The commercial forestland is comprised of (88%) of mixed forest sawtimber (spruce > 9", birch >11"), 8% hardwood sawtimber, and 4% poletimber (spruce 5-9", birch 5-11"). The timber inventory of the Sheep Creek NRMU indicates a volume of 1,744 cubic feet of wood per acre. The proposed timber harvests would be for all dead or live birch, spruce, aspen, and cottonwood timber greater than 7" dbh and comprise 48% of the Schedule acreage. The five timber harvest areas include a total of 381 acres anticipated to produce a net 2,372 cunits of merchantable timber.

INFRASTRUCTURE: The Montana Creek Road and South Southfork Road provide access to the edge of the unit on the west side. The Sunshine Creek and Montana Creek Dog Mushers 50-Mile Trails are located within the unit. The South Fork Montana Creek Trail is adjacent to the northern boundary of the unit.

SURROUNDING LAND USE: Both state and private land surrounds the unit. On the state land general dispersed recreational use occurs. The private land is a mix of native land where logging has occurred and other private land that has residential, cabins, and agricultural uses. Sheep Creek Harvest Unit A was logged several years ago with a total of 141,295 cubic feet of wood removed from the NRMU.

EXISTING LAND USE PLANS: The harvest unit boundaries are within the following land use plans:

- MSB Natural Resource Management Unit Plan (2019)
- MSB Recreational Trails Plan (2016)
- MSB Parks, Recreation and Open Space Plan (2001)
- Susitna Comprehensive Plan (2007)

- Alaska Department of Natural Resources, Susitna Matanuska Area Plan (2011) designated uses for Forestry, Public Recreation and Water Resources. This plan does not apply to Borough land.

OPERABLE WINTER ONLY: The harvest units primary borough classification is for resource management and watershed lands. It is important to note that the harvests units are restricted to winter access. Winter timber operations may be opened, closed, limited and/or suspended by the Borough at any time determined necessary by the Borough to protect and/or preserve Borough property, resources, soils, water quality, fish, wildlife, fish & wildlife habitat, wetlands and waterbodies. Typical winter operations require a certain depth of frozen ground/ice and sufficient snow depth to protect wetland vegetation.

Timber harvesting is an authorized use. Timber harvests, harvest units and cutting areas shall protect the water resource values and not significantly reduce the areas recreational opportunities.

Timber harvests shall only be held after consultation with the Alaska Department of Fish and Game. Harvest units should be laid out to improve wildlife habitat, especially winter habitat for moose to reduce transportation related fatalities in the area and improve public safety.

These harvest units could be designated as a Special Management Area and designated as a suitable as a Forest Education and Improvement Study Area

PUBLIC HEALTH, SAFETY, and WELFARE: The Borough has not identified any public health, safety, or welfare concerns at this time. To the extent they are identified later, the Borough will attempt to address them through the individual timber sale contract provisions for the harvest area, or the permits that address the operation. Timber harvest contracts include requirements to limit or avoid negative effects on public health, safety, and welfare. Timber harvests require an approved detailed plan of operations that address noise, lighting, truck traffic, scarification and road maintenance. A Timber Transport Permit may be required for timber harvests greater than 40 acres in size. The MSB Natural Resource Management Unit Plan (2019) outlines buffer distances required to protect water bodies, wetlands, trails and wildlife habitat during and after timber harvest. Appropriate buffers are required. The sites will be thoroughly evaluated prior to preparing an Implementation Schedule.

COMMUNITY COUNCILS: The harvest units are within the Susitna Community Council.

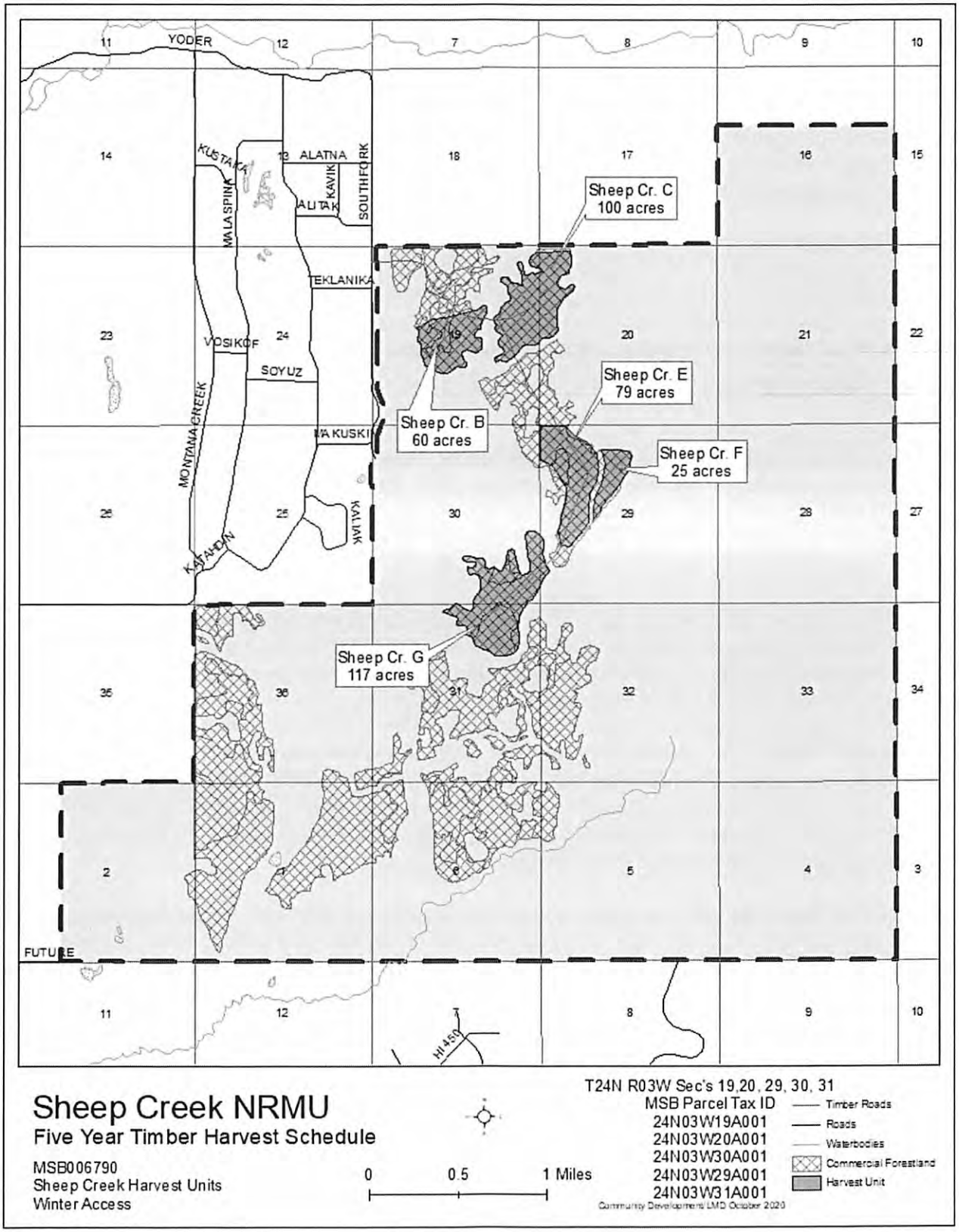
SOILS and TERRAIN: The United States Department of Agriculture lists the soils as Tokositna, hilly and undulating Chuninla complex. The profile is 0-2 inches grayish brown silt loam; 2-28 inches dark reddish brown, strong brown and brown silt loam, and 28-60 inches of very dark grayish brown and dark grayish brown very cobbly loam and sandy loam. The soil is well suited for forestry. Some soil related factors are wind throw hazard, which is moderate, plant competition is severe, and that with removal of the canopy coupled with ground disturbance, Bluejoint reedgrass tends to dominate and inhibits seedling growth. The Chuninla soil is not well suited for forestry.

COST REVENUE ANALYSIS: Approximately 664,464 cubic feet of wood are available on 381 acres of land. The Borough proposes to offer five commercial timber sales in this unit during this Schedule. The 2014 commercial timber sale was for $0.12/cubic foot ($12/cunit) based on the minimum bid and the 2009 Inventory data. The volume estimate of timber per acre is about 1,744 cubic feet, dependent on location, type size and strata.

ESTIMATED MINIMUM BIDS:
Beetle kill spruce saw logs (greater than 9" dbh) to be sold at no cost. Removal of the dead trees from the forest is considered to be in the best interest of the borough and a public service.

All birch, cottonwood, and aspen greater than 7" will be sold by the green ton (2.00 green ton).
All live spruce 7"-9" dbh will be sold by the green ton (2.00 green ton)

PERSONAL USE FIREWOOD AREAS (PUFA's): PUFA's will be available either in or adjacent to the Sheep Creek NRMU before and during any timber harvest (MSB 23.20.110).


YODER
KUSTATAN
ALATNA
MALASPINA
ALITAK
KAVIK
SOUTHFORK
TEKLANIKA
VOSIKOF
SOYUZ
MONTANA CREEK
KUSKI
KASHWITNA
KVIAK
FUTURE
HI 450
Sheep Cr. C
100 acres
Sheep Cr. E
79 acres
Sheep Cr. B
60 acres
Sheep Cr. F
25 acres
Sheep Cr. G
117 acres
Sheep Creek NRMU
Five Year Timber Harvest Schedule
MSB006790
Sheep Creek Harvest Units
Winter Access
0
0.5
1 Miles
T24N R03W Sec's 19,20, 29, 30, 31
MSB Parcel Tax ID
24N03W19A001
24N03W20A001
24N03W30A001
24N03W29A001
24N03W31A001
Timber Roads
Roads
Waterbodies
Commercial Forestland
Harvest Unit
Community Development/ LMD October 2020

FIVE-YEAR TIMBER HARVEST SCHEDULE
UNIT DESCRIPTION
Susitna River Corridor NRMU

The Borough is proposing a timber harvest in the Trapper Creek area and within the Susitna River Corridor Natural Resource Management Unit (NRMU) for inclusion in the Five Year Timber Harvest Schedule. The purpose of this sale is to provide an opportunity for the harvest of timber products.

PROPOSED HARVEST UNIT LOCATION AND ACCESS: The Susitna River Corridor NRMU is located within Sections 5, 6, 7, 8, 9, 10, 16, 17, 18, 19, 20, 21, 27, & 30 Township 26 North, Range 05 West, and Sections 1, 12 & 13 Township 26 North, Range 6 West, SM Alaska, lying east of the Parks Highway approximately between milepost 115 and 119. Access to the proposed timber harvest area would be from the Parks Highway. The best access to the harvest area may be through State land at milepost 118. Authorization for access across State land would need to be obtained if alternate access is not easily accessible.

The harvest unit is within Section 8, Township 26 North, Range 05 West, SM Alaska, lying east of the Parks Highway near milepost 18. The harvest units are within MSB Parcel Tax IDs 26N05W08B001 and 26N05W08A001.

ACRES, VOLUME AND SPECIES: The NRMU contains 4,690 acres of commercial forestland comprised of (80%) of mixed forest sawtimber (spruce>9", birch >11"), 7% hardwood sawtimber, and 13% poletimber (spruce 5-9", birch 5-11"). The proposed 54-acre timber harvest would be for all dead or live birch, spruce, aspen, and cottonwood timber greater than 7" dbh and accounts for about 7% of the proposed Schedule. Harvest volumes will be more closely estimated after a site inspection and prior to submitting a Periodic Timber Harvest Implementation Schedule.

INFRASTRUCTURE: The majority of the unit has direct access from the Parks Highway that runs in a north/south direction, generally through the center of the unit. The Petersville Road and East Susitna River Road run east/west and provide road access to the southern portion of the unit. The Chulitna Bluff Trail is located east of and generally parallels the Parks Highway. This trail lies east of the proposed harvest unit. Some trails exist to and through the timber harvest area.

SURROUNDING LAND USE: Both state and private land surround the unit. On the state land general dispersed recreational use occurs. The state land between the harvest unit and the Parks Highway was used as a material site for highway construction and maintenance. The private land has residential and recreation cabins and some agricultural uses. The NRMU has had some timber harvest for birch and spruce in the last 11 years. Both the Parks Highway and Petersville Road provide year round access to the area. The Chulitna Bluff Trail is a winter-only trail used primarily by snowmobilers. Because of the easy access, the area receives a significant amount of general dispersed recreational use.

EXISTING LAND USE PLANS: The harvest unit boundaries are within the following land use plans:

- MSB Natural Resource Management Unit Plan (2019)
- MSB Recreational Trails Plan (2016)
- MSB Parks, Recreation and Open Space Plan (2001)

- Alaska Department of Natural Resources, Susitna Matanuska Area Plan (2011) designated uses for Forestry, Public Recreation and Water Resources. This plan does not apply to Borough land.

OPERABLE SUMMER AND WINTER: The primary borough classification is for resource management and watershed lands. It is important to note that a portion of the harvest unit may be restricted to winter access. Winter timber operations may be opened, closed, limited and/or suspended by the Borough at any time determined necessary by the Borough to protect and/or preserve Borough property, resources, soils, water quality, fish, wildlife, fish & wildlife habitat, wetlands and waterbodies. Typical winter operations require a certain depth of frozen ground/ice and sufficient snow depth to protect wetland vegetation.

Timber harvesting is an authorized use. Small to medium timber harvests are allowed in those areas determined to be commercial forestland and where it does not significantly reduce the areas recreational activities. The proposed harvest unit meets this requirement.

PUBLIC HEALTH, SAFETY, and WELFARE: The Borough has not identified any public health, safety, or welfare concerns at this time. To the extent they are identified later, the Borough will attempt to address them through the individual timber sale contract provisions for the harvest area, or the permits that address the operation. Timber harvest contracts include requirements to limit or avoid negative effects on public health, safety, and welfare. Timber harvests require an approved detailed plan of operations that address noise, lighting, truck traffic, scarification and road maintenance. A Timber Transport Permit may be required for timber harvests greater than 40 acres in size. The MSB Natural Resource Management Unit Plan (2019) outlines buffer distances required to protect water bodies, wetlands, trails and wildlife habitat during and after timber harvest. Appropriate buffers are required. The sites will be thoroughly evaluated prior to preparing an Implementation Schedule.

COMMUNITY COUNCILS: The harvest unit is within the Trapper Creek Community Council.

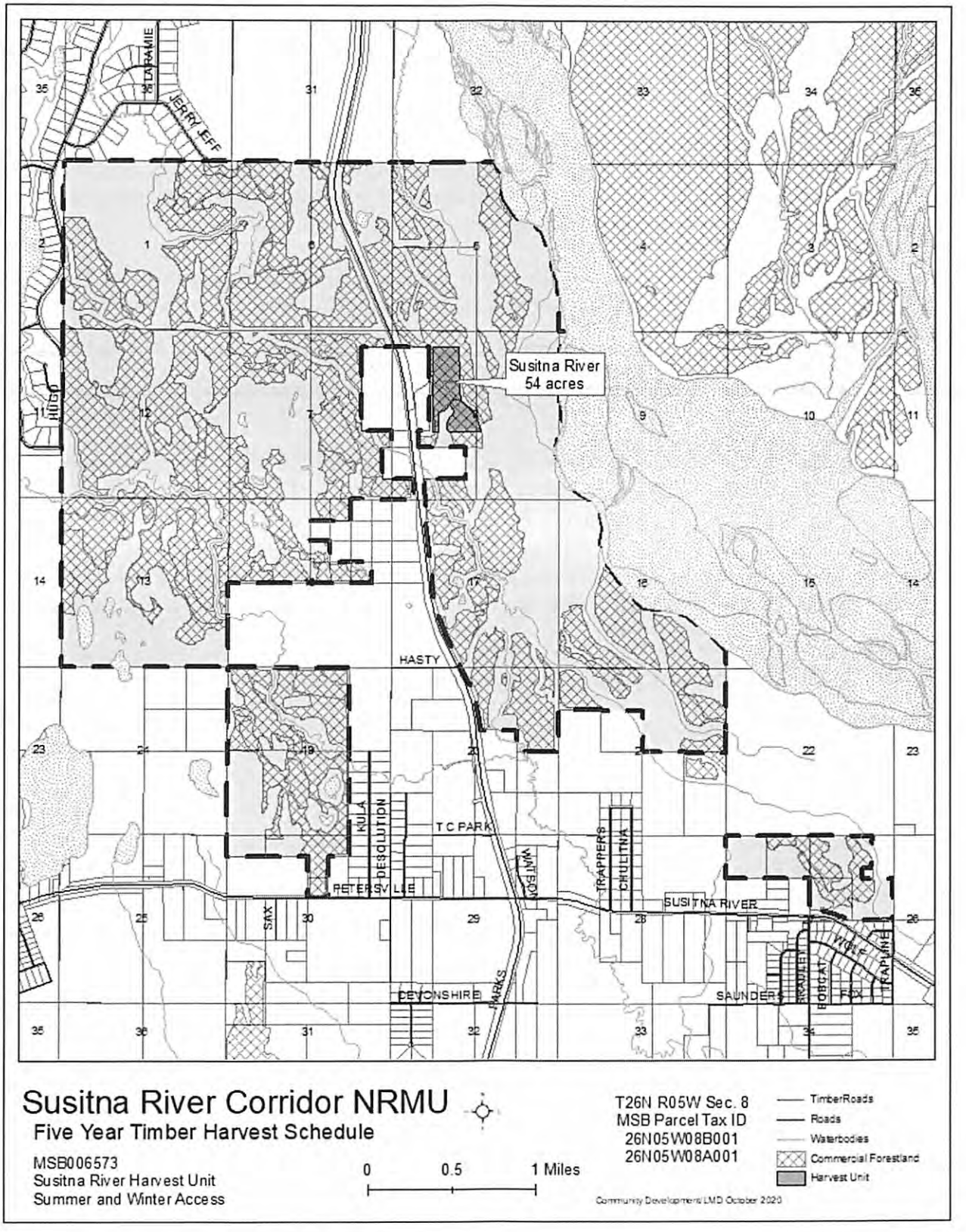
SOILS and TERRAIN: The United States Department of Agriculture lists the soils as Nancy silt loam, 0-3 percent. The profile is 0-3 inches grayish brown silt loam; 3-24 inches dark reddish brown and dark grayish brown silt loam, and 24-60 inches of variegated very gravelly sand. General management considerations; the soil is well suited for forestry. Some soil related factors are wind erosion, water erosion, frost action, low fertility, depth to gravel and cobbles, cutback instability, excess surface fines, and excessive permeability.

COST REVENUE ANALYSIS: Approximately 79,974 cubic feet of wood are available on 54 acres of land. The Borough proposes to offer one commercial timber sale in this unit during this Schedule. Access is anticipated to be feasible to a portion of the unit in the summer, which could facilitate a partial harvest during the summer with the remainder of the harvest occurring the following winter.

ESTIMATED MINIMUM BIDS:
Beetle kill spruce saw logs (greater than 9" dbh) to be sold at no cost. Removal of the dead trees from the forest is considered to be in the best interest of the borough and a public service.

All birch, cottonwood, and aspen greater than 11" will be sold by the green ton (2.00 green ton).
All live spruce >9" dbh will be sold by the green ton (2.00 green ton)

PERSONAL USE FIREWOOD AREAS (PUFA's): PUFA's may be available either in or adjacent to the Susitna River Corridor NRMU before and during any timber harvest (MSB 23.20.110).


Susitna River
54 acres
HASTY
T C PARK
PETERSVILLE
DEVONSHIRE
SUSITNA RIVER
SAUNDERS
LARAMIE
JERRY JEFF
HUGO
KULA
DESOLUTION
SAX
WATSON
PARKS
TRAPPERS
CHULITNA
TRAPLINE
Susitna River Corridor NRMU
Five Year Timber Harvest Schedule
MSB006573
Susitna River Harvest Unit
Summer and Winter Access
0 0.5 1 Miles
T26N R05W Sec. 8
MSB Parcel Tax ID
26N05W08B001
26N05W08A001
TimberRoads
Roads
Waterbodies
Commercial Forestland
Harvest Unit
Community Development LMD October 2020

FIVE-YEAR TIMBER HARVEST SCHEDULE
UNIT DESCRIPTION
Rabideux Creek NRMU

PROPOSED HARVEST UNIT LOCATION AND ACCESS: The Rabideux Creek NRMU is located within Section 1, Township 23 North, Range 05 West; Sections 9, 10, 16, 21-23, 25-26, 35-36 Township 24 North, Range 05 West; Sections 23, 26, 35-36 Township 25 North, Range 05 West; all lying within the Seward Meridian. The Unit contains 4,500 total acres, of that, 2,692 are commercial forestland.

The Borough is proposing two timber harvest units in the Rabideux NRMU for inclusion in the Five Year Timber Harvest Schedule. The purpose of these sales is to provide opportunities for the harvest of timber products.

The harvest units lie within Section 16, Township 24 North, Range 05 West, SM Alaska, lying west of the Parks Highway at approximately milepost 104. The harvest units are within MSB Parcel Tax ID 24N05W16A001.

ACRES, VOLUME AND SPECIES: Rabideux Creek NRMU contains 4,447 acres, of which 2,692 acres is commercial forestland. The commercial forestland is comprised of (60%) of mixed birch and spruce sawtimber (spruce>9", birch >11") with ages ranging from 60 years to greater than 100 years. The proposed timber harvest would be for the mixed forest sawtimber (spruce > 9", birch >11") and accounts for about 13% of the proposed Schedule.

INFRASTRUCTURE: The Parks Highway and Alaska Railroad provide general access to the unit. The Rabideux Trail runs north/south and passes to the east of the harvest units.

SURROUNDING LAND USE: Land ownership adjacent to the unit is primarily state land. There are some areas that are privately owned in the general area. The primary use of these lands is dispersed recreation. State timber and firewood sales have occurred in the vicinity.

EXISTING LAND USE PLANS: The harvest unit boundaries are within the following land use plans:

- MSB Natural Resource Management Unit Plan (2019)
- MSB Recreational Trails Plan (2016)
- MSB Parks, Recreation and Open Space Plan (2001)
- Alaska Department of Natural Resources, Susitna Matanuska Area Plan (2011) designated uses for Forestry, Public Recreation and Water Resources. This plan does not apply to Borough land.

OPERABLE WINTER ONLY: The harvest units primary borough classification is for resource management and watershed lands. It is important to note that the harvests units are restricted to winter access. Winter timber operations may be opened, closed, limited and/or suspended by the Borough at any time determined necessary by the Borough to protect and/or preserve Borough property, resources, soils, water quality, fish, wildlife, fish & wildlife habitat, wetlands and waterbodies. Typical winter operations require a certain depth of frozen ground/ice and sufficient snow depth to protect wetland vegetation.

Timber harvesting is an authorized use. Timber harvests, harvest units and cutting areas shall protect the water resource values and not significantly reduce the areas recreational opportunities.

These harvest units could be designated as a Special Management Area and designated as a suitable as a Forest Education and Improvement Study Area

PUBLIC HEALTH, SAFETY, and WELFARE: The Borough has not identified any public health, safety, or welfare concerns at this time. To the extent they are identified later, the Borough will attempt to address them through the individual timber sale contract provisions for the harvest area, or the permits that address the operation. Timber harvest contracts include requirements to limit or avoid negative effects on public health, safety, and welfare. Timber harvests require an approved detailed plan of operations that address noise, lighting, truck traffic, scarification and road maintenance. The MSB Natural Resource Management Unit Plan (2019) outlines buffer distances required to protect water bodies, wetlands, trails and wildlife habitat during and after timber harvest. Appropriate buffers are required. The sites will be thoroughly evaluated prior to preparing an Implementation Schedule.

COMMUNITY COUNCILS: The harvest units are not within a Community Council.

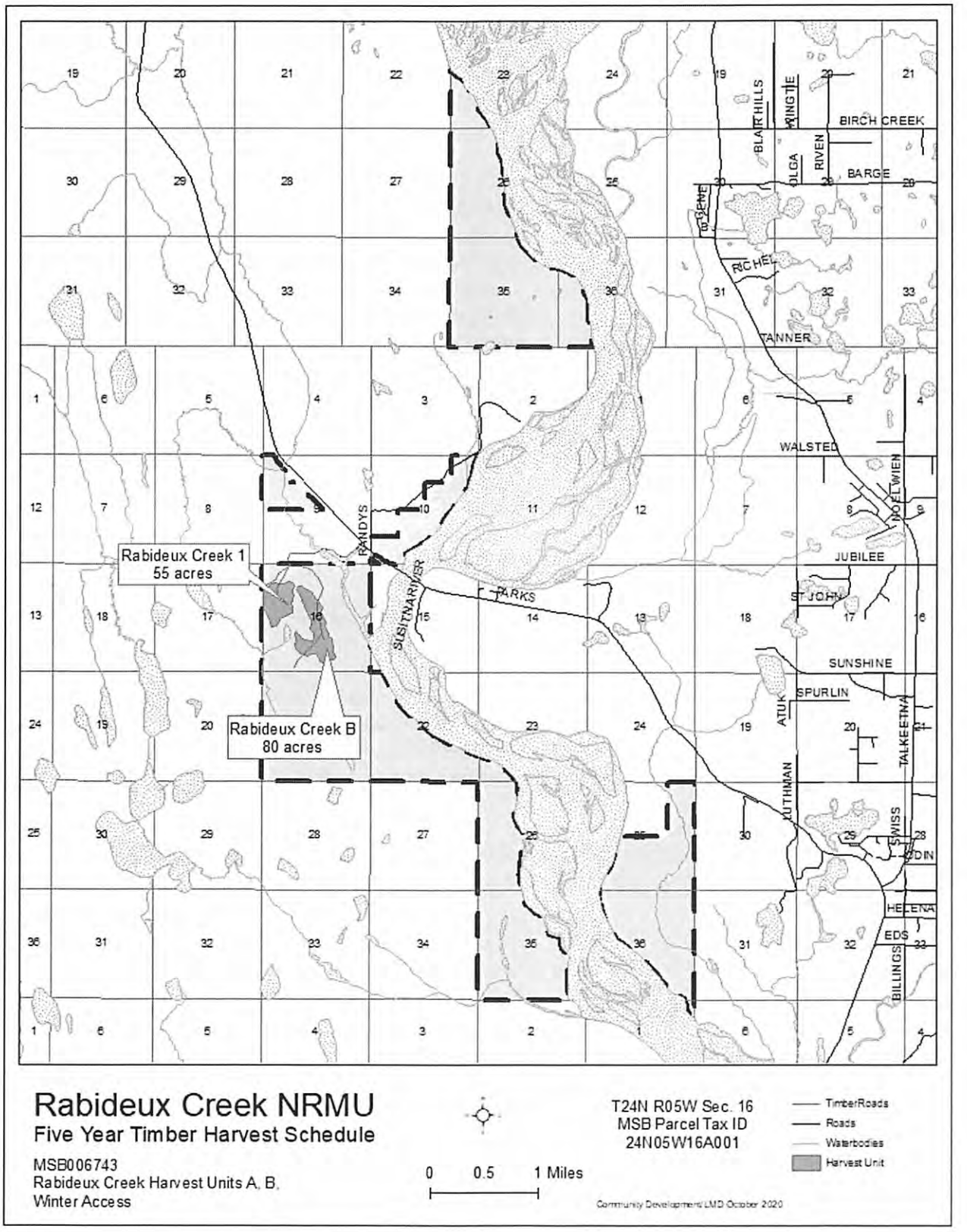
SOILS and TERRAIN: The United States Department of Agriculture lists the soils as Whitsol silt loam, till substratum and similar soils. The profile is 0-2 inches gray silt loam; 2-26 inches dark reddish brown silt loam, and 26 to 55 inches dark brown stratified silt loam, fine sandy loam, and fine sand; 55 to 60 inches dark grayish brown very gravelly sandy loam. The soil is well suited for forestry. Windthrow hazard is considered moderate for shallow rotted trees. Plant competition may be severe with high available moisture, and competitive species.

COST REVENUE ANALYSIS: Approximately 201,229 cubic feet of wood are available on 119 acres of land. The Borough proposes to offer two commercial timber sales in this unit during this Schedule. The volume estimate of timber per acre is about 1,691 cubic feet, dependent on location, type size and strata. The Inventory estimate of cubic feet in the harvest areas is 283,974.

ESTIMATED MINIMUM BIDS:
Beetle kill spruce saw logs (greater than 9" dbh) to be sold at no cost. Removal of the dead trees from the forest is considered to be in the best interest of the borough and a public service.

All birch, cottonwood, and aspen greater than 11" will be sold by the green ton (2.00 green ton).
All live spruce 7"-9" dbh will be sold by the green ton (2.00 green ton)

PERSONAL USE FIREWOOD AREAS (PUFA's): Personal use harvest of firewood is **not** proposed to be offered in the Rabideux Creek NRMU. Access would be sufficiently challenging for public firewood gathering.


Rabideux Creek 1
55 acres
Rabideux Creek B
80 acres
BIRCH CREEK
BARGE
TANNER
WALSTED
JUBILEE
ST JOHN
SUNSHINE
SPURLIN
HELENA
EDS
BILLINGS
SWISS
ODIN
TALKEETNA
ATUK
RUTHMAN
PARKS
SUSITNA RIVER
RANDYS
BLACKHILLS
KINGTIE
OLGA
RIVEN
RICHEL
NOELWIEN
Rabideux Creek NRMU
Five Year Timber Harvest Schedule
MSB006743
Rabideux Creek Harvest Units A, B,
Winter Access
T24N R05W Sec. 16
MSB Parcel Tax ID
24N05W16A001
0 0.5 1 Miles
Community Development/LMD October 2020
TimberRoads
Roads
Waterbodies
Harvest Unit

From: Simpson, Danika L (DOT) <danika.simpson@alaska.gov>
Sent: Monday, November 9, 2020 1:50 PM
To: Land Management <Land.Management@matsugov.us>
Subject: Fw: MSB Public Notice MSB007621

Thank you for the opportunity to review and comment. While generally in support of your proposed project, we request there be: No tree clearing, loading or cutting of timber within DOT&PF managed right of way.
Additionally we request, any parking for these harvesting sites be outside the highway right of way corridor.

Respectfully,

Danika

Danika Simpson
Right of Way Agent
Property Mgmnt. Supervisor
(907) 269-0687

I am currently telecommuting.
Email contact preferred.

From: Vanderwood, Randy D (DOT) <randy.vanderwood@alaska.gov>
Sent: Monday, November 9, 2020 12:27 PM
To: Sowerwine, James E (DOT) <james.sowerwine@alaska.gov>; Simpson, Danika L (DOT) <danika.simpson@alaska.gov>; Hooyer, Patricia (DOT) <louise.hooyer@alaska.gov>
Subject: FW: MSB Public Notice

For your review/comments?

Randy Vanderwood
Right of Way Chief
Central Region
(907) 269-0686

From: EDDIE TRIMMER
Sent: Tuesday, November 24, 2020 2:13 PM
To: Land Management <Land.Management@matsugov.us>
Subject: Rogers Creek Timber Harvest MSB007621

I am against the proposed Rogers Creek timber harvest as a waste of financial resources and an infringement on the occupants living in the area.

M E Trimmer

-----Original Message-----
From: Keith Mathis
Sent: Friday, November 27, 2020 6:19 PM
To: Land Management <Land.Management@matsugov.us>
Subject: concerning MSB007621 (Rogers Creek Timber Sale)

[EXTERNAL EMAIL - CAUTION: Do not open unexpected attachments or links.]

My name is Keith Mathis. In the 1980's I obtain, proved up on, and now have patent to 144 acres north of the Ken and Hilary McDonald's property on Jim Carter Road. (Township 20N, Range 3W, SW ¼ of Section 19.)

Along with Jim Carter, who had the homestead directly south of me on section 30, we constructed Jim Carter Road and the original Willer-Kash Road. Willer-Kash Road was upgraded by the state later with 80-acre homesteads released in the 90's. However, Jim Carter road is original as I made it with corduroy log base in wet areas. I do not feel Jim Carter Road in section 31 will stand up to logging truck and heavy traffic utilization this timber sale would entertain. To my knowledge Jim Carter Road in section 30 is not Borough maintain, but privately by Ken McDonald. On north of McDonalds house on to my property in section 19, the road is considered a natural trail which will not sustain vehicle traffic at all! In Section 30 of this road/trail it is located on Ken McDonald's property, not the section line bordering the two of the Rogers Creek parcels. The section line of section 30 is 90% over marsh or wetlands, therefor access would be over private property!

The reason the road on section 30 and 19 were designated as public access trail by the state was for hunting and recreational purposes documented by local residents dated back to the 1950's. Hunters and trappers had been and were currently using this trail access to the upper Kashwitna area. I agreed with the state to allow access for personal, not commercial use !

Donald Keith Mathis Jr

P.O. Box 298534
Wasilla AK 99629

From: ken macdonald
Sent: Thursday, November 26, 2020 7:03 PM
To: Land Management <Land.Management@matsugov.us>
Subject: Timber Harvest (Rogers Creek) - MSB007621

To:
MATANUSKA-SUSITNA BOROUGH

Community Development
Land Management Division
350 East Dahlia Avenue
Palmer, Alaska 99645
c/o Emerson Krueger

From: Hilary MacDonald.
Physical: 17251 North Jim Carter Road, Willow, AK 99688
Mailing: HC 89 Box 100, Willow, AK 99688
To the Land Management Division,
11-25-2020

My husband, myself and my two children live in Willow and have been residence for 15 years. We are private land owners. We purchased our home and land in 2005. We love our property and our home. We spend much of our energy improving our property, maintaining our hay fields and renovating our home. We live at 17251 Jim Carter Road, Willow, AK. and we are very concerned about the proposed Timber Harvest in the Rogers Creek Natural Resource Management Unit. MSB007621

These are our concerns:

- Serious impact on our roads. (Deneki, Jim Carter) Roads are not adequate
- for logging trucks. Increased traffic, noise and safety on our roads. These roads are not wide enough, they are winding and steep. Concerns about road maintenance.
- Deneki bridge is the only bridge to cross Willow Creek. From Willow-Fishhook
- Road many 90° degree turns plus travel through a community of residence.

- Multiple Daily use of these roads by the dog mushing community to train
- their dog teams. Teams are from as far away as Kaswell and Big Lake come to train their dogs here.
-
-
-
- 90% of all pole timber is dead due to Spruce Bark Beetle Kills. These trees
- have been dead since 2019. Will soon be rotten and unusable.
-
-
-
- Concerns for wildlife, wetland and waterbodies habitat.
-
-
-
- Negative effect of noise pollution on surrounding neighbors and our home.
-
-
-
- Serious concerns of scarification and long term effects of the forest.
-
-
-
- The cost revenue does not make sense
-

I am a local school teacher and travel these roads daily. I have to clear trees that have fallen and crossed the road to make it to work on time. Often for me to get access my husband has to plow parts of Kenny Blvd just so I can get to Willow-Fishhook Road. I can't imagine commercial use on this road.

Sincerely,

Hilary MacDonald
17251 Jim Carter Road,
Willow, AK 99688

From: Peter Pupator
Sent: Thursday, November 26, 2020 7:20 PM
To: Land Management <Land.Management@matsugov.us>
Subject: MSB007621 - COMMENTS - Five Year TImber Harvest Schedule

[**EXTERNAL EMAIL** - CAUTION: Do not open unexpected attachments or links.]
TO: Matanuska -Susitna Borough
Community Development Land Management Division
350 East Dahlia Avenue
Palmer, Alaska 99645

FROM: Peter T Pupator

(Physical) 18101 N Jim Carter Rd, Willow AK 99688
(Mailing) PO BOx 1191, Willow AK 99688

The following comments are in response to the subject Five-Year Timber Harvest Schedule MSB 007621, April 19, 2021 - December 31, 2025.

I welcome the opportunity to respond to the plan and appreciate allowing time for the public process and my voice. I will be as concise as possible given the breadth of this plan. As a full time, year round resident of privately held Ag land that borders the Rogers Creek Unit this plan directly affects my property value, way of life, privacy and security- unfortunately from my perspective, all in a negative manner
I have agricultural land with ongoing potential for crop and herd development. This harvest is not in line with the agricultural parcel needs of the community.

General:
Forestry estimates for most Unit Descriptions grossly underestimate the Volumes and Species of viable wood products. The Spruce Bark Beetle Infestation, in the past two years, has completely devastated these Units. In 2024 there will be no standing wood left to harvest.
The acreage for sawtimber (spruce>9") and poletimber (spruce 5-9") that is viable for harvest should be reduced by at least 50-75%, Presently, I have not seen white (and black) spruce alive greater than 4" diameter, during my hikes into the woods. It is not clear to what species you refer, it just says spruce.
This means that the dead spruce no longer acts as windbreaks, sheltering the birch. The windblown and fallen birch is not suitable for firewood, sawwood nor poletimer. Estimates should be revised to reflect the real situation in each Unit.

The forestry management science, or best practices, that indicates removing fallen or dead standing wood, emasse from the forest floor, is **non-existent**. No removal of organic Carbon from the forest is good for the forest. Natural decay is paramount for good soil content and nature flora that drive the habitat to thrive in with

woody decay, deadfall and the lack of disturbed ground. Allow the forest to regenerate and come back after this beetle kill cycle.

Specific for the Rogers Creek NRMU:
Access:
The plan, as written, does not address the proper access that is now a reality. As you may be aware, last December (2019) the Deneki Road, and Getts Bridge access was denied due to overflow. This is the ONLY access to the Rogers creek Unit. The proposal does not address how large logging equipment will make the multiple 90 deg corners, cross the bridge and move through a developed neighborhood of 20 homes. Certainly if this Unit is developed in 2024 the Shirley Town Bridge should be considered for upgrade to support this access. Presently, Dec 2020 it would NOT be possible to access these Units via Deneki.
Additionally all roads, Kenney to Willer Cash to JimCarter would need to be widened to MSB standards. Presently all roads are single lane, especially in winter after plowing.
The boreal forest biome we occupy is extremely vulnerable to vehicle passage. To think that winter operations would reduce scarification is wrong. Bulldozer compression, chain flailing machines, skid loaders, and large trucks would make a mark on this virgin land. Something that would take 20-40 yrs to recover.
Sound pollution to the home owners within 2-3 miles would remove the reason for private property ownership in the area. Logging operations should be focused on Units that are not adjacent to homes and active agriculture or land usage.
Developments of access roads on the three parcels A,B,C would attract persons who have no activity to be in the area. This access will drive up the threat of crime (theft), trespassing and general interactions with people and land owners.
Presently the pullout at Willer Cash / Jim Carter is a focus point of large scale unconstrained parties with open pit fires, gun fire, and wanton vehicle use. More roads, giving additional access, would exacerbate this issue. Leaving the remains of these cuts to firewood seekers can be better addressed in other areas, away from homeowners.

The local community, residents and users have developed an extensive trail system in this area. These trails are most used in the WINTER. Users include; mushers, snowmachine, eco-tourism (tours), and general intra-community transit. Shared usage with logging trucks and equipment is not safe for established community usage and not harmonious with community values.

During the dark months of winter, unencumbered access in and out for our families is imperative. We commute in and out on a daily basis -to work, to school, for healthcare, and emergency action. Sharing these roads with logging trucks is not safe, could lead to tragedy and may induce accidents and access blockage, for not only individuals but for large chunks of the homes affected.

Cost estimates show that economic sustainability is not forthcoming. The estimated general revenue is far lower than the benefit, directly from the timber sales. When qualities, such as life, health and happiness are considered this Unit should not be harvested.

Thank you for this opportunity to share my concerns for the timber harvest plan. Please feel free to contact me should you have any questions regarding my comments.

Sincerely,

Peter Pupator, November 26, 2020, Willow Alaska

-----Original Message-----
From: ken macdonald
Sent: Thursday, November 26, 2020 8:32 PM
To: Land Management <Land.Management@matsugov.us>
Subject: Timber Harvest MSB007621

[EXTERNAL EMAIL - CAUTION: Do not open unexpected attachments or links.]

To whom it may concern.

Being a resident on Kenny blvd, for the last 10 years, I know as a fact that the current local roads that are proposed in the Rodgers Creek harvest can not support commercial truck traffic. The winter use of these roads is all one lane traffic with many near 90 degree turns. Many families live on these roads with school adged kids and working school teachers, early AM and predictable use of the roads are a must. I pull about 10-20 people a winter out of the ditch as it is.

Furthermore 90% of the White Spruce all died in the 2018-2019 beetle kill season and are now in 2020 - 2022 going to be rotting standing or falling over in wind events.

In my opinion the BLM should be focused on our dead standing problem and not trying to create make work programs that provide little to no state income destroying live forests when huge tracts of land are already dead. Proposed access to the Rodgers Creek timber sale is rate alongside many residential homes and would greatly negatively effect these households. Please take all this into consideration. Thanks Ken MacDonald

-----Original Message-----
From: Todd Dyson
Sent: Thursday, November 26, 2020 9:08 PM
To: Land Management <Land.Management@matsugov.us>
Subject: Rogers Creek Logging

[EXTERNAL EMAIL - CAUTION: Do not open unexpected attachments or links.]

To the Land Management Division

My name is Gregory Dyson and I live on Kenny Blvd in Willow. I'm very concerned about the possible future timber harvest at Rogers Creek.

1. The roads in and around this area are not sufficient for large logging trucks. Narrow areas, curved areas, and hilly areas make for difficult passage of personal vehicles when meeting said logging trucks.

2. At this time we only have one bridge, on Deneki, to access the north side of Willow creek. If this bridge gets damaged by large logging trucks we will have no access.

3. The area above Jim Cater road is a heavily used recreation area in the summer and winter. Atv's and snow machines use the old logging road to access trails in the area. A lot of these riders come from outside of the Willow area and will have no knowledge of Logging trucks using the same road. Talking about a accident waiting to happen. Not to mention the scores of people who camp up and down the logging road.

4. Kenny Blvd all the way up the logging road is used by dog mushers. Logging trucks will present a huge danger to these teams.

5. The impact on the neighborhood as a whole by the noise will be greatly increased by these logging trucks passing thru.

6. Impact to the road base will be severe. Just last year we finally got a new topping put on Kenny Blvd. Will the Burrough provide extra maintenance to the road each time it's damaged by the logging trucks? Probably not.

In closing, please reconsider use of this area for logging. I'm not against logging, just when it makes such a impact on a neighborhood. As huge as the State of Alaska is, I'm sure a more suitable area can be found to log.

Thanks,
Gregory Dyson

NON-CODE ORDINANCE

Sponsored By:
Introduced:
Public Hearing:
Adopted:

MATANUSKA-SUSITNA BOROUGH
ORDINANCE SERIAL NO. 21-___

AN ORDINANCE OF THE MATANUSKA-SUSITNA BOROUGH ASSEMBLY ADOPTING THE FIVE YEAR TIMBER HARVEST SCHEDULE (MSB007621 2021-2025) PER MSB 23.20.090.

WHEREAS, Ordinance Serial No. 19-097 was adopted for the Asset Management Plan Update: Natural Resource Management Units in October 2019; and

Whereas, in order to offer sales of timber products, and identify personal use harvest areas, the Matanuska-Susitna Borough Assembly must adopt the Five-Year Timber Harvest Schedule (Schedule); and

WHEREAS, this Schedule provides information to the public concerning development and use of Borough forest resources for the period of the adoption date, February 15, 2021 to December 31, 2025; and

WHEREAS, the Schedule identifies 11 potential timber harvest areas located in five Natural Resource Management Units that will be offered for competitive sale over the next five (5) years; and

WHEREAS, the Schedule identifies seven personal use firewood harvest areas each containing more than five acres; and

WHEREAS, the Schedule is based on the principles of multiple-use and sustained yield to promote a healthy forest, provide forest products, create economic opportunities, and enhance multiple-use opportunities; and

WHEREAS, the Schedule is based on an Annual Allowable Cut based on an eighty-year rotation primarily because the dominant species in the borough is birch; and

WHEREAS, utilizing an eighty-year rotation is in compliance with sustainable forestry practices and will increase the health and productivity of the forests; and

WHEREAS, seven written public comments were received and the Schedule was amended accordingly; and

WHEREAS, the Five Year Timber Harvest Schedule (2021-2025) meets the conditions of and is in compliance with MSB 23.20; and

WHEREAS, the Planning Commission adopted Resolution Serial No. 21-01 recommending Assembly adoption of the Schedule.

BE IT ENACTED:

Classification. This Ordinance is a non-code ordinance.

Section 1. Effective Date. This ordinance shall take effect upon adoption.

ADOPTED by the Matanuska-Susitna Borough Assembly this __ day of _____, 2021.

_____
VERN HALTER, Borough Mayor

ATTEST:

_____
LONNIE R. McKECHNIE, CMC, Borough Clerk

(SEAL)

By: Emerson Krueger
Introduced:
Public Hearing:
Action:

MATANUSKA-SUSITNA BOROUGH
PLANNING COMMISSION RESOLUTION NO. PC 21-01

A RESOLUTION OF THE MATANUSKA-SUSITNA BOROUGH PLANNING COMMISSION RECOMMENDING ASSEMBLY ADOPTION OF THE FIVE-YEAR TIMBER HARVEST SCHEDULE.

WHEREAS, Ordinance Serial No. 19-097 was adopted for the Asset Management Plan Update: Natural Resource Management Units in October 2019; and

Whereas, in order to offer sales of timber products, and identify personal use harvest areas, the Matanuska-Susitna Borough Assembly must adopt the Five-Year Timber Harvest Schedule (Schedule); and

WHEREAS, this Schedule provides information to the public concerning development and use of Borough forest resources for the period of the adoption date, February 15, 2021 to December 31, 2025; and

WHEREAS, the Schedule identifies 11 potential timber harvest areas located in five Natural Resource Management Units that will be offered for competitive sale over the next five years; and

WHEREAS, the Schedule identifies seven personal use firewood harvest areas each containing more than five acres; and

WHEREAS, the Schedule is based on the principles of multiple-use and sustained yield to promote a healthy forest, provide forest

products, create economic opportunities, and enhance multiple-use opportunities; and

WHEREAS, the Schedule is based on an Annual Allowable Cut based on an eighty-year rotation primarily because the dominant species in the borough is birch; and

WHEREAS, utilizing an eighty-year rotation is in compliance with sustainable forestry practices and will increase the health and productivity of the forests; and

WHEREAS, seven written public comments were received; and

WHEREAS, the schedule was amended in response to the public comments; and

WHEREAS, the Five Year Timber Harvest Schedule (2021-2025) meets the conditions of and is in compliance with MSB 23.20.

NOW, THEREFORE, BE IT RESOLVED, that the Matanuska-Susitna Borough Planning Commission supports the adoption of the Five-Year Timber Harvest Schedule.

ADOPTED by the Matanuska-Susitna Borough Planning Commission this ___ day of ___, 2021.

_____
COLLEEN VAGUE, Chair

ATTEST

_____
Karol Riese, Planning Clerk

(SEAL)

YES:

NO:

UNFINISHED BUSINESS

Resolution No. 20-42

2020 Mat-Su Borough Hazard Mitigation Plan

(Pages 294-616)

UNFINISHED BUSINESS

MATANUSKA-SUSITNA BOROUGH

Planning and Land Use Department
Development Services Division
350 East Dahlia Avenue • Palmer, AK 99645
Phone (907) 861-7822
www.matsugov.us

STAFF MEMORANDUM

Date: November 5, 2020

Public Hearing Date: December 07, 2020

To: Planning Commission

Thru: Alex Strawn, Planning Director
Kim Sollien, Planning Services Manager
Mark Whisenhunt, Acting Development Services Manager

Alex Strawn Digitally signed by Alex Strawn Date: 2020.11.06 12:41:13 -09'00'

Kim Sollien Digitally signed by Kim Sollien Date: 2020.11.06 12:30:53 -09'00'

Digitally signed by Mark Whisenhunt Date: 2020.11.06 11:33:52 -09'00'

From: Taunnie L. Boothby, Planner II Taunnie L Boothby Digitally signed by Taunnie L Boothby Date: 2020.11.06 08:15:14 -09'00'

Subject: **Resolution 20-42** A resolution of the Matanuska-Susitna Borough Planning Commission Recommending Assembly Adoption of the Matanuska-Susitna Borough Hazard Mitigation Plan 2020 update.

Background

The Matanuska-Susitna Borough Hazard Mitigation Plan was adopted by the Assembly in 2004. There were subsequent updates done in 2008 and 2013. Additionally, the plan was amended by the adoption of the City of Wasilla and the City of Houston Mitigation Plans. The regular cycle for updating the Matanuska-Susitna Borough Hazard Mitigation Plan is every five years in accordance with Federal Emergency Management Agency (FEMA) regulations. Adopting this plan will keep the Matanuska-Susitna Borough eligible to apply for mitigation grants from FEMA and the State of Alaska. In the past, the Matanuska-Susitna Borough has received nearly $4.5 million dollars of funding to mitigate flood risk. Once this plan is adopted, the Matanuska-Susitna Borough is on target to receive over $8.7 million dollars in earthquake mitigation funding.

In 2015, FEMA updated their planning guidance for the mitigation plans. In 2018, the State of Alaska, Division of Homeland Security & Emergency Management (DHS&EM) updated the State's mitigation plan. The State also hired a consulting firm, LeMay Engineering and Consulting, Inc., to assist the Matanuska-Susitna Borough with updating the hazard mitigation plan.

Plan Update Specifications

The Matanuska-Susitna Borough Hazard Mitigation Plan 2020 update process began on December 20, 2017. The planning team involved with this update includes stakeholders inside and outside of the Matanuska-Susitna Borough government. A complete list of stakeholders is on page 17 of the Matanuska-Susitna Borough Hazard Mitigation Plan 2020 Update.

In section 4.0 Planning Process of the Matanuska-Susitna Borough Hazard Mitigation Plan 2020 Update, is a full description of the planning activities related to this update.

An excerpt from the plan on page 17 states:

> *The following five-step process occurred from December 2017 through May 2020.*
>
> 1. *Organize resources: Members of the Project Team identified resources, including staff, agencies, and local community members, who could provide technical expertise and historical information needed in updating the 2013 FEMA-approved HMP.*
> 2. *Assess risks: The Project Team confirmed hazards specific to the Borough remained applicable and updated the 2013 risk assessment for the identified hazards, including the vulnerability analysis, prior to and during the development of the updated mitigation strategy.*
> 3. *Assess capabilities: The Project Team reviewed current administrative and technical, legal and regulatory, and fiscal capabilities to determine whether existing provisions and requirements adequately address relevant hazards.*
> 4. *Develop a mitigation strategy: After reviewing the risks posed by each hazard, the Project Team reviewed status updates from mitigation actions that were implemented as a result of the 2013 HMP and updated a comprehensive range of potential mitigation goals and actions based on hazard events that had occurred since 2013 and mitigation actions' statuses. New mitigation actions were then integrated into the remaining mitigation actions to be completed and were then prioritized based on community concerns with fire, earthquake, flood/erosion, and severe weather identified as the top priorities.*
> 5. *Monitor, evaluate, and update the HMP: The Project Team developed a process to monitor the HMP to ensure it will be used as intended while fulfilling community needs. The Project Team then developed a process to evaluate the HMP on a yearly basis to compare how their decisions affect hazard impacts. They then outlined a method to share their successes with the Borough community members to encourage support for mitigation activities and to provide data for incorporating mitigation actions into existing planning mechanisms and providing data for the HMP's five-year update. Opportunities are described in the Continued Public Involvement Section of this HMP (Section 8).*

The planning department posted the plan on the website, developed and conducted an online public survey in June and July 2019. 721 people viewed the survey and 584 people responded. The survey revealed some interesting data. The top three communities that responded were Meadow Lakes, Knik-Fairview, and City of Wasilla residents. The majority of respondents ranked e-mail, internet, and social media as their preferred method of obtaining information followed by television/radio and mail. In addition, 60% of respondents thought they were somewhat knowledgeable about natural hazards.

During the planning process, our community experienced a magnitude 7.1 earthquake on November 30, 2018. Information regarding this major event, along with the survey responses and data have been compiled and included in the draft plan.

The MSB Local Emergency Planning Committee (LEPC) reviewed the draft plan and provided comments in January and February of 2020. The planning team held an online open house as a part of the outreach strategy based on the responses to the survey. The planning department posted the draft plan with a story map on the Borough's website from March 16 to May 15, 2020. Several in-person open houses were scheduled to occur at the end of March and early April to solicit public comment. However, due to the shutdown related to the Covid-19 pandemic, all in-person open houses were canceled. In response, the Planning Department increased their online outreach effort. There were over 5,000 interactions on Matanuska-Susitna Borough and Matanuska-Susitna Borough Planning Department Facebook pages. These pages directed people to the online open house. This resulted in over 2,250 visits to the webpage. The online open house was advertised in the Frontiersman on March 13, March 27, and April 1, 2020. Notices requesting review and comments were sent to all the community councils, boards, and commissions in the borough.

The Matanuska-Susitna Hazard Mitigation Plan 2020 Update was sent to the State of Alaska, DHS&EM and FEMA for their review. On August 20, 2020, the Matanuska-Susitna Borough received a joint agency letter from FEMA through the State of Alaska, DHS&EM which gave their preliminary approval of the plan.

We expect to present this draft plan to the Borough Assembly in January 2021. If the plan is adopted by the assembly, staff expects final approval from FEMA in March of 2021.

Website Location www.matsugov.us/plans/msb-hazard-mitigation-plan-2013

This website location includes the following documents:

- Approved 2013 Matanuska-Susitna All-Hazard Mitigation Plan Natural Hazards.
- Matanuska-Susitna Hazard Mitigation Plan 2020 Update.
- Letter from State of Alaska and FEMA stating preliminary approval following the review of the elements in 44 Code of Federal Regulations 44, Part 201.6.

Recommendation

Staff recommends approval of resolution 20-42; A resolution of the Matanuska-Susitna Borough Planning Commission Recommending Assembly Adoption of the Matanuska-Susitna Borough Hazard Mitigation Plan 2020 Update.

Matanuska-Susitna Borough
Hazard Mitigation Plan Update



Farmland in the Borough, as seen from Lazy Mountain. Photo by Emily Russell/Alaska Public Media.

Prepared for:
State of Alaska
DMVA/DHS&EM
P.O. Box 5800
JBER, Alaska 99505

Prepared by:

LeMay Engineering & Consulting, Inc.

August 2020

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I	City of Wasilla Hazard Mitigation Plan Update

Acronyms/Abbreviations

°F	Degrees Fahrenheit
% g	Percent of the Acceleration of Gravity
ACS	American Community Survey
AFS	Alaska Fire Service
AICC	Alaska Interagency Coordination Center
APA	American Planning Association
ARC	American Red Cross
AVO	Alaska Volcano Observatory
BLM	Bureau of Land Management
Borough	Matanuska-Susitna Borough
CC	Changes in the Cryosphere
CDBG	Community Development Block Grant
CHEMS	Community Health and Emergency Medical Services
CFR	Code of Federal Regulations
CIP	Capital Improvement Projects
CWPP	Community Wildfire Protection Plan
DCCED	Department of Commerce, Community, and Economic Development
DCRA	Division of Community and Regional Affairs
DF&G	Department of Fish and Game
DGGS	Division of Geological and Geophysical Survey
DEC	Department of Environmental Conservation
DES	Department of Emergency Services
DHSS	Department of Health and Social Services
DHS&EM	Division of Homeland Security and Emergency Management
DMA 2000	Disaster Mitigation Act of 2000
DMVA	Department of Military and Veterans Affairs
DNR	Department of Natural Resources
DOE	Department of Energy
DOF	Division of Forestry
DOI	Division of Insurance
DOL	Department of Labor
DOT&PF	Department of Transportation and Public Facilities
EMS	Emergency Medical Services
EQ	Earthquake
ER	Erosion

F	Fire
FEMA	Federal Emergency Management Agency
FIRMs	Flood Insurance Rate Maps
FL	Flood
FMA	Flood Mitigation Assistance
FY	Fiscal Year
g	gravity as a measure of peak ground acceleration
GI	Geophysical Institute
GIS	Geospatial Information System
HAZUS	Multi-Hazard Software
HMA	Hazard Mitigation Assistance
HMGP	Hazard Mitigation Grant Program
HMP	Hazard Mitigation Plan
HUD	Housing and Urban Development
HVAC	Heating, Ventilation, and Air Conditioning
IRS	Internal Revenue Service
LEPC	Local Emergency Planning Committee
LiDAR	Light Detection and Ranging Software
M	Magnitude
Mb	Millibars
MAP	Mitigation Action Plan
MH	Multi-Hazard
MMI	Modified Mercalli Intensity
mph	miles per hour
NOAA	National Oceanic and Atmospheric Administration
NFIP	National Flood Insurance Program
NRCS	National Resources Conservation Sources
NWS	National Weather Service
PDM	Pre-Disaster Mitigation
PGA	peak ground acceleration
PIO	Public Information Officer
PSHAs	Probabilistic Seismic Hazard Analyses
PWs	Project Worksheets
RAWS	Remote Automated Warning Systems
REAA	Rural Education Attendance Area
SBA	U.S. Small Business Administration

SpUDs	Special Use Districts
Sq.	Square
Stafford Act	Robert T. Stafford Disaster Relief and Emergency Assistance Act
STAPLEE	Social, Technical, Administrative, Political, Legal, Economic, and Environmental
SW	Severe Weather
TF	Technical Feasibility
UAF	University of Alaska Fairbanks
UHMA	United Hazard Mitigation Assistance
UKN	Unknown
USDA	U.S. Department of Agriculture
USFS	U.S. Forest Service
U.S.	United States
USC	United States Code
USGS	United States Geological Survey
V	Volcanic Ash
VA	Veterans Assistance
WUI	Wildland Urban Interface

1.0 Introduction

This section provides a brief introduction to hazard mitigation planning, associated grants, and a description of this 2020 Hazard Mitigation Plan (HMP) Update for the Matanuska-Susitna Borough (Borough).

1.1 Hazard Mitigation Planning

Hazard mitigation, as defined in Title 44 of the Code of Federal Regulations (CFR), Section §201, is "any sustained action taken to reduce or eliminate the long-term risk to people and property from natural hazards and their effects. Hazard mitigation is the only phase of emergency management specifically dedicated to breaking the cycle of damage reconstruction and repeated damage. As such, States and Local governments are encouraged to take advantage of funding provided by Hazard Mitigation Assistance (HMA) grant programs" (FEMA, 2015c). Hazard mitigation is any work done to minimize the impacts of any type of hazard event before it occurs and aims to reduce losses from future disasters. Hazard mitigation is a process in which hazards are identified and profiled, people and facilities at risk are analyzed, and mitigation actions are developed. Implementation of mitigation actions, which include long-term strategies such as planning, policy changes, programs, projects, and other activities, is the end result of this process.

1.2 Planning Requirements

1.2.1 Local Mitigation Plans

On October 30, 2000, Congress passed the Disaster Mitigation Act of 2000 (DMA 2000) (P.L. 106-390) which amended the Robert T. Stafford Disaster Relief and Emergency Assistance Act (Stafford Act) (Title 42 of the United States (U.S. Code [USC] 5121 et seq.) by repealing the act's previous mitigation planning section (409) and replacing it with a new mitigation planning section (322). Section 322 directs State and Local entities to closely coordinate mitigation planning and implementation efforts. Additionally, it establishes the HMP requirement for the Federal Emergency Management Agency's (FEMA) HMA.

On October 2, 2015, FEMA published the Mitigation Planning Final Rule in the Federal Register, [Docket ID: FEMA-2015-0012], 44 CFR Part 201, effective November 2, 2015. Planning requirements for Local entities are described in detail in Section §201.6. Locally-adopted and FEMA-approved HMPs qualify jurisdictions for several HMA grant programs. This 2019 HMP Update for the Borough complies with Title 44 CFR Section §201.6 and applicable FEMA guidance documents as well as the 2018 State of Alaska HMP developed by the Department of Military and Veterans Affairs (DMVA) Division of Homeland Security and Emergency Management (DHS&EM).

Section 322 of the Stafford Act (42 USC 5165) as amended by P.L. 106-390 provides for State and Local governments to undertake a risk-based approach to reducing risks to natural hazards through mitigation planning. The National Flood Insurance Act of 1968 (42 USC 4001 et seq.) as amended, further reinforces the need and requirement for HMPs, linking Flood Mitigation Assistance (FMA) programs to State and Local HMPs. This change also requires participating National Flood Insurance Program (NFIP) communities' risk assessments and mitigation strategies to identify and address repetitively flood-damaged properties.

1.3 Grant Programs with Mitigation Plan Requirements

FEMA HMA grant programs provide funding to Local entities that have a FEMA-approved HMP. Two of the grants are authorized under the Stafford Act and DMA 2000, while the remaining three are authorized under the National Flood Insurance Act and the Bunning-Bereuter-Blumenauer Flood Insurance Reform Act. As of June 19, 2008, the grant programs were segregated. The Hazard Mitigation Grant Program (HMGP) is a competitive, disaster-funded grant program whereas the other Unified Mitigation Assistance Programs (Pre-Disaster Mitigation [PDM] and FMA, although competitive) rely on specific pre-disaster grant funding sources, sharing several common elements.

> *"The DHS&EM FEMA HMA grant programs present a critical opportunity to protect individuals and property from natural hazards while simultaneously* ***reducing reliance on Federal disaster funds****. The HMA programs provide PDM grants annually to States, Local, and Tribal communities. The statutory origins of the programs differ, but all share the common goal of reducing the loss of life and property due to natural hazards.*
>
> *The PDM program is authorized by the Stafford Act and focuses on mitigation project and planning activities that address multiple natural hazards, although these activities may also address hazards caused by manmade events. The FMA program is authorized by the National Flood Insurance Act and focuses on reducing claims against the NFIP"* (FEMA, 2019h).

1.3.1 Hazard Mitigation Assistance Unified Programs

The HMGP provides grants to Local entities to implement long-term hazard mitigation measures after a major disaster declaration. The purpose of the HMGP is to reduce the loss of life and property due to natural disasters and to enable mitigation measures to be implemented during the immediate recovery from a disaster. Projects must provide a long-term solution to a problem; for example, elevation of a home to reduce the risk of flood damages as opposed to buying sandbags and pumps to fight the flood. In addition, a project's potential savings must be more than the cost of implementing the project. Funds may be used to protect either public or private property or to purchase property that has been subjected to, or is in danger of, repetitive damage. The amount of funding available for the HMGP under a particular disaster declaration is limited. FEMA may provide a State or Local entity with up to 20% of the total aggregate disaster damage costs to fund HMGP project or planning grants. The cost-share for this grant is 75% Federal/25% non-Federal.

The PDM grant program provides funds to Local entities for hazard mitigation planning and mitigation project implementation prior to a disaster event. PDM grants are awarded on a nationally-competitive basis. Like HMGP funding, a PDM project's potential savings must be more than the cost of implementing the project. In addition, funds may be used to protect either public or private property or to purchase property that has been subjected to, or is in danger of, repetitive damage. The total amount of PDM funding available is appropriated by Congress on an annual basis. In Fiscal Years (FY) 2018 and 2019, PDM program funding totaled approximately $235 and $250 million each year. The cost-share for this grant is 75% Federal/25% non-Federal.

The Borough participates in the NFIP.

The goal of the FMA grant program is to reduce or eliminate flood insurance claims under the NFIP. Particular emphasis for this program is placed on mitigating repetitive loss properties. The primary source of funding for this program is the National Flood Insurance Fund. Grant funding is available for three types of grants, including Planning, Project, and Technical Assistance. Project grants, which use the majority of the program's total funding, are awarded to States and Local entities to apply mitigation measures to reduce flood losses to properties insured under the NFIP. In FY 2018, FMA funding totaled $160 million. In FY 2019, FMA funding totaled $210 million. The cost-share for this grant is 75% Federal/25% non-Federal.

1.4 HMP Description

The remainder of this HMP Update consists of the following sections and appendices:

Prerequisites

Section 2 addresses the prerequisites of plan adoption, which includes adoption by the Borough Assembly. The adoption resolution is included in Appendix C.

Community Description

Section 3 provides a general history and background of the Borough, including historical trends for population and the demographic and economic conditions that have shaped the area. A location figure of the area with its 26 Community Councils is included.

Planning Process

Section 4 describes the planning process and identifies the Project Team members, the meetings held as part of the planning process, and the key stakeholders within the Borough. In addition, this section documents public outreach activities (Appendix B) and the review and incorporation of relevant plans, reports, and other appropriate information.

Hazard Analysis

Section 5 describes the process through which the Project Team identified, screened, and selected the hazards to be profiled in this 2020 HMP Update. The hazard analysis includes the characteristics, history, location, extent, impact, and recurrence probability statements of future events for each hazard. In addition, historical and hazard location figures are included.

Vulnerability Analysis

Section 6 identifies potentially vulnerable assets—people, residential and nonresidential buildings, critical facilities, and critical infrastructure—in the Borough. The resulting information identifies the full range of hazards that the Borough could face and potential social impacts, damages, and economic losses. Trends in land use and development are also discussed.

Mitigation Strategy

Section 7 defines the mitigation action plan (MAP) strategy which provides a blueprint for reducing the potential losses identified in the vulnerability analysis. The Project Team developed an updated list of mitigation goals and potential actions to address the hazard risks facing the Borough. Mitigation actions include preventive actions, property protection techniques, natural resource protection strategies, structural projects, emergency services, and

public information and awareness activities. Updates of mitigation actions implemented from the 2013 HMP are also provided. Mitigation actions were then re-prioritized according to the Borough's 2020 priorities of fires, earthquakes, floods/erosion, and severe weather comprising the top four hazards.

Plan Maintenance

Section 8 describes the Project Team's formal plan maintenance process to ensure that the 2020 HMP Update remains an active and applicable document. The process includes monitoring, evaluating (Appendix F), and updating the HMP; implementation through existing planning mechanisms; and continued public involvement.

References

Section 9 lists the reference materials used to prepare this HMP Update.

Appendix A

Appendix A contains a glossary of terms that are used throughout this HMP Update.

Appendix B

Appendix B provides public outreach information, including public notices, newsletters, meeting sign-in sheets, public comments, community survey results, and presentations.

Appendix C

Appendix C provides the adoption resolution passed by the Borough Assembly.

Appendix D

Appendix D provides the FEMA Review Tool, which documents compliance of this HMP Update with FEMA criteria.

Appendix E

Appendix E contains the Benefit-Cost Analysis Fact Sheet used to prioritize mitigation actions.

Appendix F

Appendix F provides plan maintenance documents, such as an annual review sheet, the progress report form, and a community survey.

Appendix G

Appendix G provides the Horseshoe Lake Road Community Assessment and Wildfire Protection Plan.

Appendix H

Appendix H provides the FEMA-approved City of Houston Hazard Mitigation Plan.

Appendix I

Appendix I provides the FEMA-approved City of Wasilla Hazard Mitigation Plan Update.

2.0 Prerequisites

2.1 Adoption by Borough Assembly and Supporting Documentation

Requirements for the adoption of this 2020 HMP Update by the local governing body, as stipulated in the DMA 2000 and its implementing regulations, are described below.

DMA 2000 REQUIREMENTS: PREREQUISITES

Local Plan Adoption

Requirement §201.6(c)(5): The local hazard mitigation plan shall include documentation that the plan has been formally adopted by the governing body of the jurisdiction requesting approval of the plan (e.g., Borough Assembly).

Element

- Has the local governing body adopted the updated plan?
- Is supporting documentation, such as a resolution, included?

Source: FEMA, 2015.

The Borough is the local jurisdiction represented in this 2020 HMP Update and meets the requirements of Section 322 of DMA 2000.

On _____, 2020, the Borough Planning Commission held a public hearing on this HMP. The public was afforded an opportunity to provide comment and ask questions. The Planning Commission approved this HMP by Resolution __-__ (Appendix C). This action recommended this HMP Update to the Borough Assembly for adoption pending approval by the State of Alaska Hazard Mitigation Officer, FEMA, and a Public Hearing process. On _____, 2020, this HMP was introduced at a regular meeting of the Borough Assembly. At the following regular meeting of the Assembly, there was a public hearing followed by adoption of the 2020 HMP Update by Ordinance __-__ on _____, 2020 with unanimous approval (Appendix C). The Borough Assembly adoption resolution and the FEMA letter of approval are included in Appendix C.

2.2 Cities and Federally Recognized Entities within the Borough

The City of Houston has a FEMA-approved and community-adopted HMP dated April 23, 2018 (Appendix H). The City of Wasilla has a FEMA-approved and community-adopted HMP dated October 14, 2018 (Appendix I). Representatives of the City of Palmer chose not to develop an HMP for the City or adopt the 2019 Borough HMP Update.

Two federally recognized tribes are located within the boundaries of the Borough. The Borough Planner personally invited both tribes to participate in the HMP Update. No feedback was received.

The Knik Tribe is a federally recognized tribe providing state and federally-contracted social, educational, and economic development services to tribal members in the Upper Cook Inlet region of Alaska. Located in Southcentral Alaska, the tribe has the largest Alaska Native Village Service Area for a single tribal government covering over 25,000 square (sq.) miles. There are over 10,000 Alaska Native and Indian residents within the Knik Tribal service area. Knik Tribal

Council has an old village site with historical significance, but no people live there. Knikatnu, Inc. is the Native corporation landowner of Knik Tribal Council's lands within the Borough.

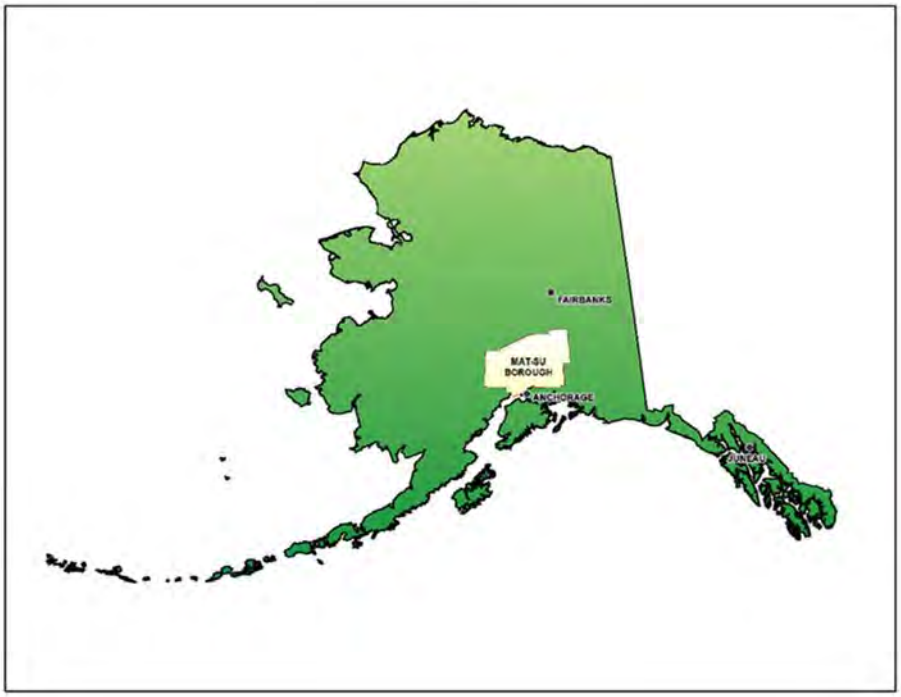
The Native Village of Chickaloon is a federally recognized tribe providing services to an estimated 2,373 Alaska Natives and Native American Peoples living in their Alaska Native Village Service Area, as well as the non-native community members living in Glacier View, Chickaloon, Sutton, Palmer, and Butte. The Native Village of Chickaloon has a FEMA-approved and community-adopted HMP.

Additionally, another federally recognized tribe located in the Municipality of Anchorage has significant land holdings in the Borough. The Native Village of Eklutna serves approximately 400,000 members in the Municipality of Anchorage and the Borough and is located within the Municipality of Anchorage. The Eklutna Native Corporation (Eklutna, Inc.) has significant land holdings in the Municipality of Anchorage and the Borough, with approximately 67,000 additional acres due to be conveyed from the Bureau of Land Management (BLM) to the Borough. The Borough Planner personally invited this tribe to participate in the HMP Update. No feedback was received.

3.0 Community Description

This section describes the location, government, geography, climate, history, demographics, economy, and transportation options of the Borough.

3.1 Location



The Borough lies in the heart of Southcentral Alaska, encompassing over 25,000 sq. miles of rolling lowlands, mountains, lakes, rivers, and streams. The Borough includes portions of the Alaska Range to the northwest, portions of the Chugach Mountains to the southeast, and essentially the entire Talkeetna and Clearwater Ranges in its interior (Figure 1). The Denali Borough delineates almost the entire northern boundary of the Borough with the exception of a small northeastern edge bordered by the Upper Tanana Basin Unorganized Borough. The Upper Tanana Basin Unorganized Borough and the Copper River Basin Unorganized Borough delineate the Borough's east border. The Iditarod Unorganized Borough delineates the Borough's west border. The Municipality of Anchorage, Upper Cook Inlet, Knik Arm, and the Kenai Peninsula Borough delineate the Borough's southern border.

The Borough lies at approximately 61.6811 North Latitude and -149.0913 West Longitude (Department of Community, Commerce, and Economic Development [DCCED], Division of Community and Regional Affairs [DCRA], 2020). The Borough covers approximately 24,682 sq. miles of land and 578 sq. miles of water.

3.2 Government

The Borough is a second class borough incorporated in 1964 within the state of Alaska. The Borough has an elected Mayor and Assembly. The Borough Manager acts as chief administrator. The Borough has an appointed Planning Commission, Platting Board, Transportation Advisory Board, Historic Preservation Commission, as well as several advisory committees. The Borough's area-wide powers include: assessment and collection of taxes; education; planning and zoning; parks and recreation; ports, harbors and wharves; ambulance

service, search and rescue; transportation systems; air pollution control; day care facilities; historic preservation; and transient accommodations taxation.

The Borough's non-area-wide powers include: fire suppression, regulation of fireworks, motor vehicles and operators, snow vehicles, solid waste, libraries, septic tank waste disposal, economic development, nudity, limited health and social services, natural gas, electric, road and trail improvement districts, animal control, housing rehabilitation, emergency services communication center, and water pollution control.

3.3 Geography

The Borough is located in Southcentral Alaska and takes its name from the Athabascan Indian names for the two great rivers whose drainages form its broad central valley (the Matanuska and the Susitna Rivers). The Borough is bordered on the north by the Alaska Range and by the Chugach Range to the east. The Borough encompasses five geographically distinct regions: the Alaska Range, Talkeetna Mountains, Chugach Mountains, Susitna River Basin, and the Matanuska River Valley. Figure 1 is a graphic of the Borough's borders.

Alaska Range Region: The Alaska Range is an extremely remote, mountainous, and partially glaciated region which forms the northern and western geographic borders of the Borough. The range's main resource values include fish and wildlife, mining, and recreation. Denali National Park and Preserve is located in the northern portion of this region. Mt. McKinley or Denali, the tallest mountain in North America with an elevation of 20,320 feet, is located just north of the Borough boundary. On clear days, this peak can be viewed from many points within the Borough. This region is a remote, largely unsettled portion of the Borough.

Talkeetna Mountains Region: The Talkeetna Mountains region is the largest geographic region in the Borough. The region is generally defined as the Upper Susitna River Drainage Basin, but also includes the Central Talkeetna Mountains and the Clearwater Mountains. The region is characteristically rugged and remote, generally offering little potential for settlement except in limited areas. The George Parks Highway on the western border, the Glenn Highway on the southern border, and the Denali Highway in the northeast portion of the region offer relatively easy access for settlement in these limited areas. The Talkeetna Mountains region offers several recreational opportunities including hunting, fishing, snowmachining, skiing, backpacking, berry picking, white water rafting and kayaking, and canoeing. The community of Lake Louise is located near the eastern border of this region.

Chugach Mountains Region: The Chugach Mountains region is located in the southeast portion of the Borough. This region is almost entirely rugged mountains with more than 90% of its area above the tree line. Even though the Chugach Mountain Range is not the tallest range in the Borough, it does contain substantial glaciation due to its position as a major geographic barrier to weather systems originating in Prince William Sound and the Gulf of Alaska. The Matanuska, Knik, and Nelchina Glaciers are the area's largest glaciers and the points of origin for the region's largest rivers. The Knik Glacier is located just south of the Borough boundary. The Matanuska and Nelchina Glaciers are located within Borough boundaries. Although this region is unsettled, it supports considerable recreational use including backpacking, skiing, climbing, and hunting.

Susitna River Basin: The Susitna River Basin is the most diverse of the five geographic regions. The northern portion of the region is the drainage basin of the upper Chulitna River and includes the north Parks Highway and Denali State Park areas. The Parks Highway and Alaska Railroad divide the region and provide easy access to the land east of the Chulitna River. Access also provide travelers with high scenic values of the Alaska Range. The recreational lowlands portion of the Susitna River Basin contains the majority of the Borough's surface resource wealth. Typically, the region consists of lowland muskeg interspersed with well-drained forests and numerous creeks and rivers. The region is accessible primarily by river boat, airplane, and dogsled. The Skwentna, Yenta, Kahiltna, and Susitna Rivers and their tributaries are all major anadromous fish waterways and provide migratory spawning and rearing habitat for five species of salmon. These rivers support one of the largest sport fisheries in the state. The area is also an important big game habitat and hunting area. The remote communities of Skwentna and Alexander Creek are located within this area. The remainder of the Susitna River Basin can be accessed by road and includes the communities west and north of the Cities of Houston and Wasilla. These areas also provide sport fishing opportunities including hunting, boating, hiking, skiing, and snow-machining.

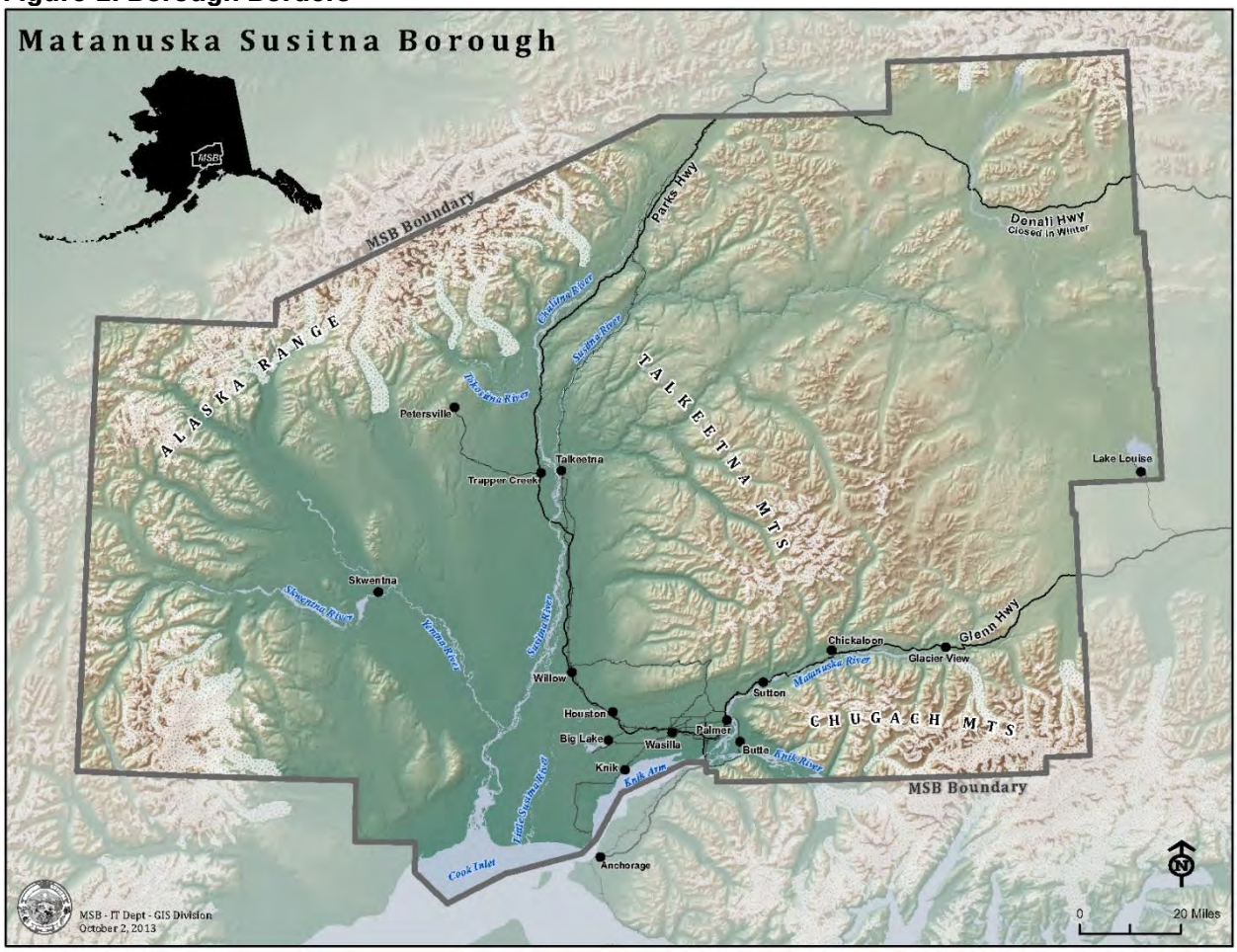
Matanuska River Valley: The Matanuska River Valley encompasses the drainage basin of the Matanuska River, as delineated by the Talkeetna Mountains to the north, the Chugach Mountains to the south, following the Glenn Highway to the Borough's eastern border. The region includes the most heavily developed portion of the Borough normally referred to as the "core area". This is the area encompassing Palmer, Wasilla, and Houston, and the developed areas around and between these communities. Most of the services provided by the Borough are located within this "core area".

Local topography greatly influences both wind speed and direction. Two locally recurring winds, the Matanuska and the Knik, are notable. The Matanuska wind occurs during winter months and blows southwesterly down the Matanuska River Valley. The Knik wind occurs predominantly during the summer months and blows westerly down the Knik River Valley. These winds often have velocities in excess of 60 miles per hour (mph) and occur from 16 to 25 days annually. Strong Chinook winds also occur along mountain range foothills during warm spells in the spring and winter.

3.4 History

The Athabascan Dena'ina (also known as Tanaina) Indians settled in Southcentral Alaska including the region now known as the Borough. In 1867, the U.S. purchased Alaska from Russia which had claimed it as its own during the 1700s. The Klondike Gold Rush brought thousands of prospectors and entrepreneurs to Alaska in the late 1800s and early 1900s. Gold was discovered in the Hatcher Pass area of the Borough in the early 1900s and it, along with coal mining and the construction of the Alaska Railroad, helped grow and sustain the local population. During the Depression, a U.S. government New Deal program brought a group of farmers to the Palmer area in an effort to establish an agricultural region in Southcentral Alaska. World War II brought the next population boom with millions of dollars spent on the Alaska-Canada Highway and the build-up of military bases and infrastructure in Alaska due to its close proximity to Japan. Construction of the regional

Figure 1. Borough Borders



road system and continued farming efforts spurred population growth in the Borough through the 1950s and 1960s. Alaska became the 49th State of the Union in 1959. The 1970s brought significant population growth and an economic boom to the entire state due to the construction of the 800-mile long Trans-Alaska pipeline. Today, the Borough is comprised of the lush farmlands of the Matanuska and Susitna Valleys, approximately 40 miles northeast of Anchorage. Low housing costs, the rural lifestyle, and a reasonable commute to Anchorage for employment and services has made the Borough one of the fastest growing areas of Alaska in recent years.

3.5 Demographics

The Borough is slightly larger in land area than the state of West Virginia. Most of the population is concentrated in the Borough's "core area", the approximately 100 sq. miles located between and around the cities of Palmer, Wasilla, and Houston, and several surrounding Community Council areas. Only about 1% of the Borough is populated, with the most densely-populated region located in the Southcentral portion of the Borough (the "core area"). In 2019, 86% of Borough residents live in subdivisions and neighborhoods outside the City Limits of Wasilla and Palmer (ADN, 2019b). The

remaining Borough population spreads out from this "core area" along two major corridors; the north-south Parks Highway and Alaska Railroad corridor and the east-west Glenn Highway corridor. A very small portion of the population is located along major river corridors.

The 2010 U.S. Census recorded 88,995 residents living in the Borough. The 2012 – 2016 American Community Survey (ACS) reported 98,679 residents living in the Borough, of which the median age was 34.8, indicating a relatively young population. The most recent 2018 DCCED certified population is 105,743 (DCRA, 2020). This population is expected to continue increasing as depicted on Figure 2.

Approximately 84% of Borough residents recognize themselves as White, and 5% of Borough residents recognize themselves as Alaska Native. The percentage of males is 52%, and the percentage of females is 48%. The 2016 ACS indicated that there are 30,839 households with the average household having approximately four individuals.

There are three incorporated cities within the Borough: Houston, Palmer, and Wasilla. There are two Alaska Native entities within the Borough: the Chickaloon Village Traditional Council and the Knik Tribal Council. Additionally, Eklutna, Inc. owns significant land holdings within the Borough.

City of Houston: The City of Houston encompasses 25.3 sq. miles of land and 1.2 sq. miles of water and was incorporated as a third class city in 1966 and reclassified as a second class city in 1973. Houston is located at the northern edge of the population center of the "core area", 57 miles from Anchorage at North Latitude: 61.6312, West Longitude: -149.8007. Its 2018 DCCED certified population is 2,100. The City of Houston has a FEMA-approved and community-adopted HMP dated April 23, 2018.

City of Palmer: The City of Palmer is a Home Rule City encompassing 3.8 sq. miles of land and was formed in 1951. Palmer is located 42 miles northeast of Anchorage at North Latitude: 61.5934, West Longitude: -149.1093. Its 2018 DCCED certified population is 6,223.

City of Wasilla: The City of Wasilla encompasses approximately 11.7 sq. miles of land and 0.7 sq. mile of water and is bisected by the Parks Highway, 43 miles north of Anchorage at North Latitude: 61.5848, West Longitude: -179.4339. The City of Wasilla was incorporated in 1974 as a second class city and reclassified as a first class city in 1984. Its 2018 DCCED certified population is 8,801. The City of Wasilla has a FEMA-approved and community-adopted HMP dated October 14, 2018.

Native Village of Chickaloon: The Native Village of Chickaloon is an unincorporated community of 79.4 sq. miles of land and 0.8 sq. mile of water and is primarily located along the Matanuska River east of the community of Sutton at North Latitude: 61.7765, West Longitude: -148.4933. Additional tribal lands are located in Sutton, the Butte area of Palmer, Wasilla, and outside of the Borough. Its 2018 DCCED certified population is 254 people.

The Knik Tribal Council is mostly a service provider and has an old village site that is uninhabited.

Additionally, there are several unincorporated communities within the Borough (Figure 3); most of these are represented by the following 26 Borough-recognized Community Councils:

- Big Lake
- Buffalo/Soapstone
- Butte
- Chase
- Chickaloon
- Fishhook
- Gateway
- Glacier View
- Greater Farm Loop
- Greater Palmer
- Knik-Fairview
- Lazy Mountain
- Louise, Susitna, Tyone
- Meadow Lakes
- North Lakes
- Petersville
- Point MacKenzie
- Skwentna
- South Knik River
- South Lakes
- Susitna
- Sutton
- Talkeetna
- Tanaina
- Trapper Creek
- Willow Area Community Organization

Figure 2. Borough's Historic Population

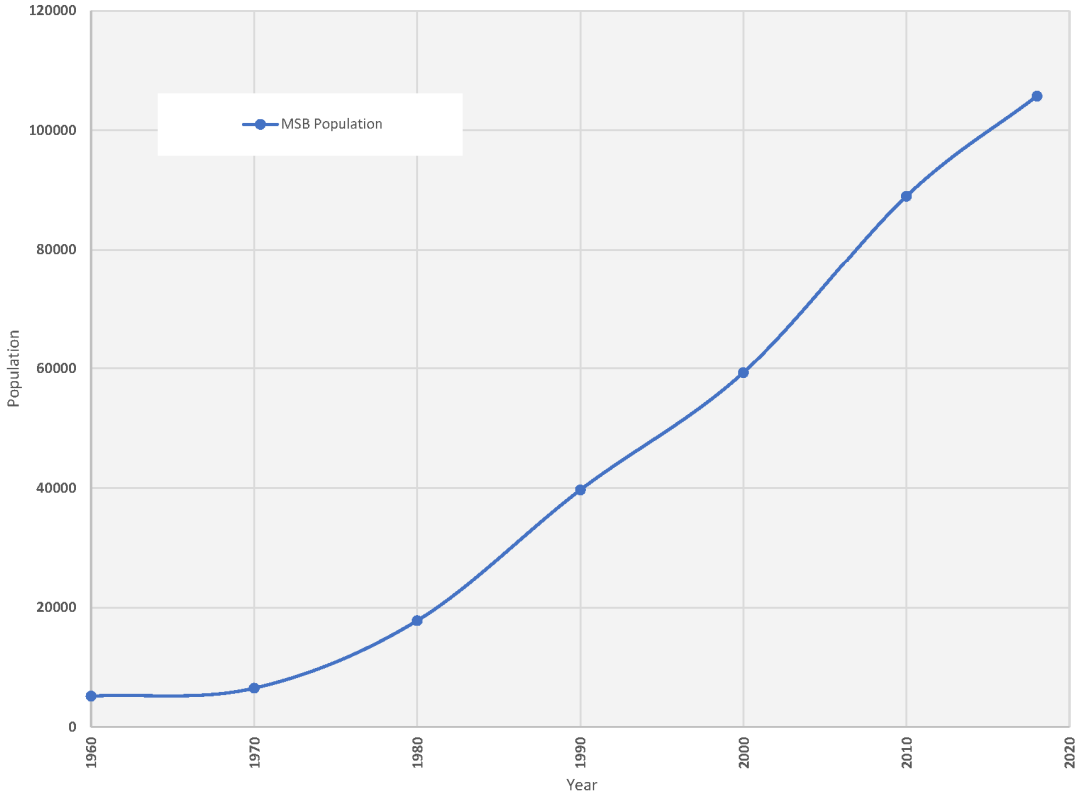
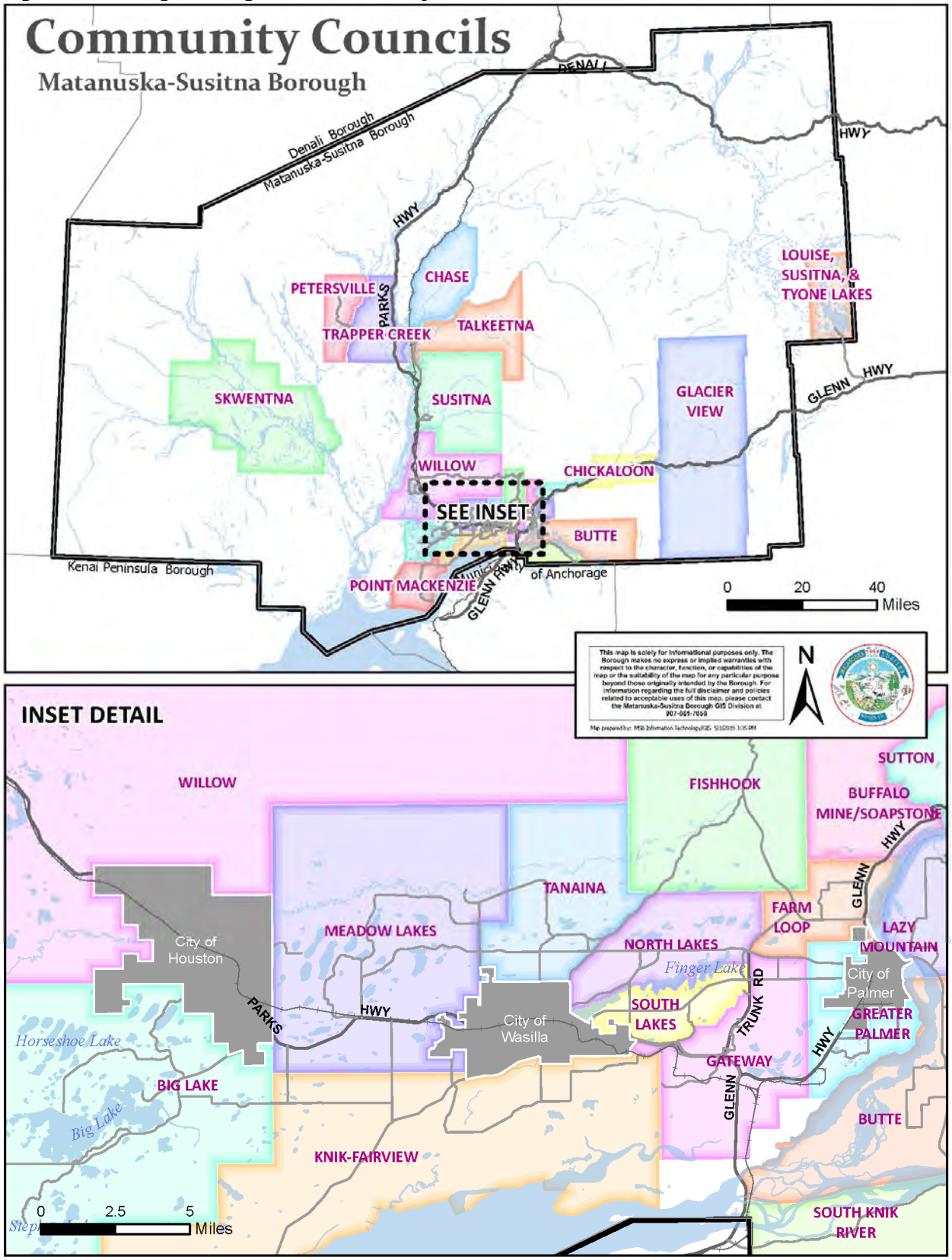


Figure 3. Borough-Recognized Community Councils



3.6 Economy

As of 2015, approximately 45% of all working Borough households have at least one family member who commutes to work outside the Borough, either in Anchorage, Eagle River, Joint-Base Elmendorf-Richardson, or to the oil pumping facilities on the North Slope of the Brooks Range. This means that on a typical workday, over 37,000 Borough residents are away from their homes at work, the overwhelming majority of them driving individual vehicles on the single road (Glenn Highway) leading south to Anchorage. Valley Transit uses two public buses and several 15 passenger vans to provide limited commuter transportation between the Borough and Anchorage.

The Borough's economy is primarily that of a bedroom community, with remnants of the Matanuska Valley's agricultural beginnings. There are a few family farms specializing in crops that do well in cold soils with a short yet intense growing season, as well as a small dairy industry. These farms are clustered around Palmer and the Point MacKenzie area. Tourism is the strongest local industry with good prospects for future sustained growth. Increasing population and tourist traffic have drawn large national retailers such as Wal-Mart, Lowes, and Home Depot to build in the "core area."

According to the 2016 ACS, the median household income in the Borough was $86,831. Approximately 9,350 individuals (9.67%) were reported to be living below the poverty level. The potential work force (those aged 16 years or older) in the Borough was estimated to be 74,564, of which 47,177 were actively employed (ACS, 2016).

3.7 Transportation Options

The Borough is traversed by two major federal highways, the Glenn Highway and the Parks Highway. The Glenn Highway traverses the eastern portion of the Borough and connects to the Richardson Highway at Glennallen. The Parks Highway traverses the Borough in a north/south direction parallel to the Susitna River. These two federal highways connect the Borough to the two major population centers of Alaska, Anchorage and Fairbanks, and are the major freight corridors linking Interior Alaska with the coast. Virtually all out-of-state highway traffic travels through the Borough via one of the two interstate highways.

The Alaska Railroad traverses the Borough in a north/south direction, and, for most of its length, parallels the Parks Highway. It is a single-track line, with daily passenger service in summer reducing to weekly in winter. Flag stop service is available for areas north of Talkeetna, an area dotted with homesteads and vacation cabins not accessible by road. Development of a commuter rail system providing regular service to Anchorage has long been studied but not implemented due to high costs. Once the population reaches a critical point, commuter rail service may become financially feasible.

Palmer and Wasilla each have a Municipal Airport; however, there are no scheduled flights. Private aircraft owners and small flightseeing operations utilize both airports as well as the many small unpaved airstrips scattered throughout the Borough. The State Division of Forestry (DOF) bases its wildland firefighting air operations out of the Palmer Municipal Airport. The Borough contains more private airstrips per capita than any community of similar size in the U.S.

Construction on a 32-mile rail link between the Alaska Railroad main line in Houston and Port MacKenzie began in 2012. This rail link would provide Port MacKenzie customers/shippers with efficient rail transportation between the Port and Interior Alaska. As of September 2017, 75% of the project was complete.

Other transportation routes have been investigated. The Knik Arm Crossing Project was halted in 2016 due to a limited state budget. The project was developed to meet the current and projected transportation needs of the Municipality of Anchorage and the Borough with the goal of constructing a cost-affordable, vehicular toll bridge of about 2.7 miles across Knik Arm to join the Port of Anchorage area and Port MacKenzie area, as well as 19 miles of road to support the bridge's accessibility. The bridge would provide an efficient link between the operations and infrastructures of the two ports and offer an alternate north-south emergency response and disaster evacuation route. Work on this project is not expected to continue in the foreseeable future.

4.0 Planning Process

This section provides an overview of the planning process; identifies the Project Team members and key stakeholders; documents public outreach efforts; and summarizes the review and incorporation of existing plans, studies, and reports used to update this HMP. Additional information regarding the Project Team and public outreach efforts is provided in Appendix B.

Requirements for the planning process, as stipulated in DMA 2000 and its implementing regulations, are described below.

DMA 2000 Requirements: Planning Process

Local Planning Process

Requirement §201.6(c)(1): [The plan shall document] the planning process used to develop the plan, including how it was prepared, who was involved in the process, and how the public was involved.

Element

- Does the plan provide a narrative description of the process followed to prepare the updated plan?
- Does the updated plan indicate who was involved in the planning process?
- Does the updated plan indicate how the public was involved?
- Does the updated plan discuss the opportunity for neighboring communities, agencies, businesses, academia, nonprofits, and other interested parties to be involved in the planning process?
- Does the planning process describe the review and incorporation, if appropriate, of existing plans, studies, reports, and technical information?
- Does the updated plan document how the planning team reviewed and analyzed each section of the plan and whether each section was revised as part of the update process?

Source: FEMA, 2015.

4.1 Overview of Planning Process

The DMVA DHS&EM provided funding and project oversight to LeMay Engineering & Consulting, Inc. Ms. Jennifer LeMay, PE, PMP guided development of the Hazard Mitigation Project Team to assist the Borough with the HMP Update.

The planning process began on December 20, 2017, when the Local Emergency Planning Committee (LEPC) was informed that the HMP would be updated. Copies of the 2013 HMP were provided to members. Casey Cook, the Borough Emergency Manager, sent out a flyer soliciting comments on the 2013 HMP. Comments received were incorporated into the HMP. On January 22, 2019, an introductory meeting with DHS&EM and the Borough Department Directors was held to discuss what a hazard mitigation plan is, what information is required, and State of Alaska/FEMA grants that can be applied for and received by communities with Community-adopted, and State and FEMA-Approved HMPs. The Borough then posted the 2013 HMP on its website asking for public comments.

The following five-step process occurred from December 2017 through May 2020.

1. Organize resources: Members of the Project Team identified resources, including staff, agencies, and local community members, who could provide technical expertise and historical information needed in updating the 2013 FEMA-approved HMP.

2. Assess risks: The Project Team confirmed hazards specific to the Borough remained applicable and updated the 2013 risk assessment for the identified hazards, including the vulnerability analysis, prior to and during the development of the updated mitigation strategy.
3. Assess capabilities: The Project Team reviewed current administrative and technical, legal and regulatory, and fiscal capabilities to determine whether existing provisions and requirements adequately address relevant hazards.
4. Develop a mitigation strategy: After reviewing the risks posed by each hazard, the Project Team reviewed status updates from mitigation actions that were implemented as a result of the 2013 HMP and updated a comprehensive range of potential mitigation goals and actions based on hazard events that had occurred since 2013 and mitigation actions' statuses. New mitigation actions were then integrated into the remaining mitigation actions to be completed and were then prioritized based on community concerns with fire, earthquake, flood/erosion, and severe weather identified as the top priorities.
5. Monitor, evaluate, and update the HMP: The Project Team developed a process to monitor the HMP to ensure it will be used as intended while fulfilling community needs. The Project Team then developed a process to evaluate the HMP on a yearly basis to compare how their decisions affect hazard impacts. They then outlined a method to share their successes with the Borough community members to encourage support for mitigation activities and to provide data for incorporating mitigation actions into existing planning mechanisms and providing data for the HMP's five-year update. Opportunities are described in the Continued Public Involvement Section of this HMP (Section 8).

4.2 Hazard Mitigation Project Team

Table 1 lists the Hazard Mitigation Project Team members and contact information.

Table 1. Hazard Mitigation Planning Team

NAME	TITLE	ORGANIZATION	PHONE
Taunnie Boothby, CFM	Borough Team Lead and Floodplain Manager	Borough	861.8526
Adam Bradway	Borough Planner	Borough	861.8608
Pam Graham	Borough Planner	Borough	861.8608
Casey Cook, Chair	Borough Emergency Manager, LEPC Advisory Board	Borough	861.8004
Casey Laughlin, Secretary	LEPC Advisory Board	LEPC	861.8005
Christian Hartley	Houston Fire Department Chief		892.9130

NAME	TITLE	ORGANIZATION	PHONE
Scott Bell	Menard Center Facility Supervisor		864.9105
Bea Adler	Resident		861.8005
William Morrow	Red Cross		357.6060
Ray Hollenbeck	MARA – HAM Radio		373.6771
Kevin Munson	Mat-Su Health Services		352.3210
Rene' Dillow	Public Health		352.6631
Bryen Bartgis	South Central Foundation		631.7333
Kathy Watkins	Willow CERT		495.1040
Kenneth Hudson	MARA – HAM Radio		354.0206
Norman Straub	Resident		861.8005
Cathi Kramer	West Lakes Fire Department		354.8734
Kara Cahill	Mat-Su Regional		861.6575
Gene Belden	Wasilla Police		352.5421
Michael Chmielewski	Radio Free Palmer		982.7149
Dawn Hicks	Public Health		352.6600
Micah Weinstein	MTA Telecommunications		761.2121
Colleen Vague, Chair	Members	Borough Planning Commission	861.7851
Mary Anderson, Vice Chair			
Jason Ortiz			
Patricia Chesbro			
Chris Elder			
Stafford Glashan			
Sassan Mossanem			
Vern Halter, Mayor	Members	Borough Assembly	861.8683
Tim Hale			
Stephanie Nowers			
George McKee			

NAME	TITLE	ORGANIZATION	PHONE
Ted Leonard			
Dan Mayfield			
Jesse Sumner			
Tam Boeve			
Jennifer LeMay, PE, PMP	Mitigation Planner	LeMay Engineering & Consulting, Inc.	350.6061
Rick Dembroski	State of Alaska PDM Project Manager	DHS&EM	428.7015
Brent Nichols, CFM	State of Alaska Hazard Mitigation Officer	DHS&EM	428.7085

4.3 Public Involvement & Opportunity for Interested Parties to Participate

Table 2 lists the community's public involvement initiatives focused to encourage participation and public insight for the HMP effort.

Table 2. Public Involvement Mechanisms

Mechanism	Description
LEPC Meeting	On December 20, 2017, one of the agenda items at the LEPC meeting was the HMP Update. LEPC comments were incorporated into the HMP Update.
Notification of HMP Update and Request for Public Input	The Borough's website was updated with a hazard mitigation plan tab. The summary, scope, and benefits of the upcoming planning project were posted. The public was invited to comment on the 2013 HMP which was also posted on the website.
Public Survey	June 5 to July 31, 2019: 721 people looked at the survey posted on the Borough's website, and 584 people answered at least one question. A brief summary is provided below this table, and the entire results are provided in Appendix B.
LEPC Meeting	On January 15, 2020, one of the agenda items at the LEPC meeting was the HMP Update. In particular, Tables 20 and 28 of the 2020 Draft HMP Update were discussed; comments are listed in a comment log in Appendix B and were incorporated accordingly into the HMP after the meeting.
Public Notices, dated March 27 and April 1, 2020	Notice of the 30-day public comment period was provided to the public on March 16, 2020. The Draft HMP Update was also posted on the Borough's web page and Facebook page. Open houses were scheduled for March 18 at the Borough Assembly Chambers from 3-8 pm, March 28 at the Sutton Library from 1-4 pm, and April 4 at the Talkeetna Library from 1-4 pm to discuss the Draft HMP Update. Emails informing the public about the open houses were first sent out on March 8 and 10. A public notice of the open houses was prepared, and invitations were issued via the Borough's website, Facebook page, and using the local newspaper, The Frontiersman. Due to COVID-19, the decision was made on March 11 to cancel the open houses. An online open house was held on the Borough's website from March 16 to May 15. See https://storymaps.arcgis.com/stories/329d5b9698524d9f9374b3dae1f16cca. The online open house was viewed 228 times, and the Draft HMP Update was viewed 144 times; but no one submitted any comments to the Planning Department or through the open house link.
Public Notice, dated ____, 2020	Planning Commission meeting. The meeting was announced via public notice, radio, newspaper, website, Facebook, and a posted newsletter.
Public Notice, dated ____, 2020	Borough Assembly meeting. The meeting was announced via public notice, radio, newspaper, website, Facebook, and a posted newsletter.

The Project Team typically held internal monthly meetings twice a month as the Draft 2020 HMP Update was prepared.

In Springs 2017 and 2019, the Borough posted the 2013 Plan on its website and offered the community the opportunity to participate in the updating process. Additionally, from June 5 to July 31, 2019, the Borough posted a public survey regarding hazard mitigation on its website. The survey was also shared multiple times on the Borough's Facebook page. The number of people that looked at the survey was 721, and the total number of people that answered one or more of the questions was 584. The public was advised of the survey via mailers sent to boards, Borough staff, and Community Councils. Survey results are briefly summarized below and are contained in their entirety in Appendix B.

- The top three communities that responded were Meadow Lakes, Knik-Fairview, and the City of Wasilla.
- The majority of respondents ranked email/internet/social media as their preferred method of obtaining information from the Borough followed by television/radio and mail.
- 60% of respondents thought they were somewhat knowledgeable about natural hazards facing the Borough, and 24% of respondents felt they were well-informed.
- Hazard mitigation prevention measures such as planning, building codes, open space preservation, and floodplain regulations were determined to be extremely important (46%) and very important (35%), respectively, to influence the way land is developed and buildings are built.
- Property protection actions such as removing homes from the floodplain and elevating homes to stay above water levels during flooding were determined to be extremely important (30%) and very important (44%), respectively, to lessen the risk of property damage to homes.
- Public education and awareness such as outreach programs, public service announcements, and notices to residents and property owners were determined to be extremely important (57%) and very important (33%), respectively, to inform the public about natural hazards and the actions necessary to avoid potential injury or damage.
- Natural resource protection actions such as floodplain protection, habitat preservation, slope stabilizations, riparian buffers, and forest management in addition to minimizing losses were determined to be extremely important (38%) and very important (44%), respectively, to preserve or restore the functions of natural systems.
- Critical facility protection such as placing generators in hospitals to ensure electrical power during a widespread power failure was determined to be extremely important (77%) and very important (19%), respectively.
- Emergency service actions such as warning systems, evacuation planning, emergency response training, and protection of critical emergency facilities or systems were determined to be extremely important (80%) and very important (17%), respectively, to protect people and property during and immediately after a hazard event.

- Of the 496 responses received to the following open-ended question (What information do you expect to receive from the Borough during a natural disaster?), most of the survey responders expected to receive the following:
    - Who, What, When, Where, and Why;
    - What the disaster is and where is it located – affected areas;
    - School status;
    - Is there an evacuation;
    - Location(s) of shelters;
    - Location(s) of clean water supplies;
    - Location(s) of medical care or triage locations;
    - Instructions for what should they do next;
    - Notification of road closures; and
    - Availability of services and utilities.
- Of the 496 responses received to open-ended questions, a number of responses indicated the Borough's response to the November 30, 2018 Earthquake was lacking and that the information needed was not shared by the Borough but instead by friends and neighbors via Facebook.
- Of the 120 responses received to the following open-ended question (Any other comments/suggestions?), the top comments included:
    - The Borough's communication with its citizens during the November 30, 2018 Earthquake was severely lacking;
    - The Borough needs to implement a Nixle Alert System;
    - The Borough needs to communicate more frequent updates to the public even if there is no news to report during a hazard event and recovery effort;
    - More public education is needed; and
    - The Borough needs to develop a plan to address the spruce-bark beetles and the standing dead spruce.

On January 15, 2020, the LEPC met for its regularly scheduled meeting. One of the agenda items was the HMP Update. LEPC members reviewed the Draft HMP Update, and their comments were incorporated. Comments are included in Appendix B.

On March 18 and 28 as well as April 4, 2020, the Borough planned to hold open houses at three locations to discuss Risk Map data which resulted in new flood and earthquake hazard data and Borough-developed maps, the 2020 Draft HMP Update, and resilience of the community. These open houses were cancelled due to COVID-19. An online open house was held during this time frame on the Borough's web page; the open house went live on March 16, 2020. No comments were received during the Open House. The Open House kicked off a 30-day public comment period which was extended to May 15. The Borough posted the Draft 2020 HMP Update on its website and asked the public to provide input and comment. Two public notices were printed in the *Frontiersman* on March 27 and April 1 asking the public to provide input and comment. No comments were received during the public comment period.

On May 18, 2020, the Draft HMP Update was submitted to DHS&EM and FEMA. Once Approval Pending Adoption was received, the Project Team reconvened and continued through the Borough Planning Process.

On ____ __, 2020, the HMP Update was introduced at the regularly-scheduled Borough Planning Commission meeting. The importance of the MSB having an updated HMP was presented.

On ____ __, 2020, Jennifer LeMay gave a presentation summarizing the HMP Update and proposed mitigation actions. A public hearing was conducted as an agenda item of the regularly-scheduled Borough Planning Commission meeting.

On ____ ___, 2020, the HMP Update was introduced at the regularly-scheduled Borough Assembly meeting. The importance of the MSB having an updated HMP was presented.

On ____ ___, 2020, Jennifer LeMay gave a presentation summarizing the HMP Update and proposed mitigation actions. A public hearing was conducted as an agenda item of the regularly-scheduled Borough Assembly meeting. The Borough Assembly adopted the HMP Update and passed a resolution. FEMA issued an Approval Letter on ____ ___, 2020.

4.4 Incorporation of Existing Plans and Other Relevant Information

During the planning process, the Project Team reviewed and incorporated information from existing plans, studies, and reports into the 2020 HMP Update. The following were reviewed and used as references for the jurisdiction information and hazard profiles in the risk assessment (see Section 6) of the HMP:

- *Borough Community Wildfire Protection Plan*, updated in 2008. Alaska Department of Natural Resources DOF.
- *Matanuska-Susitna Borough Comprehensive Development Plan*, updated in 2005.
- *Matanuska-Susitna Borough "Core Area" Comprehensive Plan,* updated in 2007.
- *Matanuska-Susitna Borough* Wide *Comprehensive Plan,* 2005.
- *Matanuska-Susitna Borough All-Hazards Mitigation Plan, Natural Hazards*, Final Update, 2013.
- *Big Lake Comprehensive Plan Update*, 2009.
- *Chase Comprehensive Plan Update*, 2017.
- *Chickaloon Comprehensive Plan Update*, 2008.
- *Fishhook Comprehensive Plan*, 2017.
- *Glacier View Comprehensive Plan Update*, 2008.
- *South Knik River Comprehensive Plan*, 2014.
- *Knik-Fairview Comprehensive Plan*, 1997.
- *Lazy Mountain Comprehensive Plan*, 2008.
- *Louise Susitna and Tyone Lakes Comprehensive Plan Update*, 2016.
- *Meadow Lakes Comprehensive Plan*, 2005.
- *Point MacKenzie Community Comprehensive Plan*, 2011.
- *Susitna (Formerly Y) Community Comprehensive Plan*, 2007.
- *Sutton Comprehensive Plan*, 2009.

- *Talkeetna Comprehensive Plan*, Amended 1999.
- *Willow Area Community Comprehensive Plan*, 2013.
- *Long Range Transportation Plan*, 2017.
- *Stormwater Management Plan*, 2017.
- *Wetlands Management Plan*, 2012.
- *Matanuska River Management Plan*, 2010.
- *Risk Map Data Package*, FEMA Region X-Matanuska-Susitna Borough, Alaska, 2019 by FEMA, DCCED, and the State of Alaska Division of Geological and Geophysical Survey (DGGS).
- State of Alaska DCCED Community Profile, provided historical and demographic information, 2020.
- State of Alaska DHS&EM *Hazard Mitigation Plan*, updated by DHS&EM, 2018a.
- State of Alaska DHS&EM *Disaster Cost Index*, 2018b.

5.0 Hazard Profiles

This section identifies and profiles the hazards that could potentially affect the Borough.

5.1 Overview of a Hazard Analysis

A hazard analysis includes the identification, screening, and profiling of each hazard. Hazard identification is the process of recognizing the natural events that threaten an area. Natural hazards result from unexpected or uncontrollable natural events of sufficient magnitude. Even though a particular hazard may not have occurred in recent history in the study area, all-natural hazards that may potentially affect the study area are considered; the hazards that are unlikely to occur or for which the risk of damage is accepted as being very low, are eliminated from consideration. Human and Technological, and Terrorism-related hazards are beyond the scope of this HMP Update.

Hazard profiling is accomplished by describing hazards in terms of their characteristics, history, location, extent, impact, and recurrence probability. Hazards are identified through the collection of historical and anecdotal information, review of existing plans and studies, and preparation of hazard maps of the study area. Hazard maps are used to determine the geographic extent of the hazards and define the approximate boundaries of the areas at risk.

5.2 Hazard Identification and Screening

Requirements for hazard identification, as stipulated in DMA 2000 and its implementing regulations, are described below.

DMA 2000 Requirements: Risk Assessment: Identifying Hazards

Identifying Hazards

Requirement §201.6(c)(2)(i): 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 recurrence probability of future hazard events.

Element

- Does the updated plan include a description of the types of all-natural hazards with the potential to affect the jurisdiction?
- Does the risk assessment identify the location (i.e., geographic area affected) of each natural hazard?
- Does the risk assessment identify the extent (i.e., breadth, magnitude, or severity) and impact of each hazard?
- Does the plan provide information on previous occurrences of each hazard?
- Does the plan include recurrence probability statements of future events (i.e., chance of occurrence) for each hazard?

Source: FEMA, 2015.

For the first step of the hazard analysis, the Project Team reviewed possible hazards that could affect the Borough according to the 2018 Alaska HMP (DHS&EM, 2018a). They then evaluated and screened the comprehensive list of potential hazards based on a range of factors, including prior knowledge or perception of the threat and the relative risk presented by each hazard, the ability to mitigate the hazard, and the known or expected availability of information on the hazard (see Table 3). The Project Team determined that the hazards that have the potential to impact the Borough include: changes in the cryosphere (new), earthquakes (high), flood/erosion (high), ground failure (removed from the 2020 HMP Update after discussion

amidst the Project Team), volcanoes (medium), severe weather (medium), and wildland/conflagration fires (high). The remaining hazards excluded through the screening process were considered to pose a lower threat to life and property in the Borough due to the low likelihood of occurrence or the low probability that life and property would be significantly affected.

Table 3. Identification and Screening of Hazards

Hazard Type	Should It Be Profiled?	Explanation
Changes in the Cryosphere	Yes	The Borough is experiencing an increase in fires and increased temperatures. Drought is a concern. The Borough is also susceptible to changes in the cryosphere as its geographical area includes glaciers and mountains where snow avalanches occur. The slopes throughout the Hatcher Pass area and the slope of Pioneer Peak between Goose Creek and the Knik River Bridge are well-known avalanche areas in the Borough.
Earthquakes	Yes	Alaska is an earthquake-prone state. The Castle Mountain Fault was responsible for a mid-1980s quake felt locally. The fault crosses the Parks Highway and the Alaska Railroad tracks just before the bridge over the Little Susitna River. Scientists looked at predicting peak ground acceleration within a 15-mile radius of the Wasilla city center at a depth of 15 miles. Their conclusions were that 50% of the area is highly earthquake-prone, and 40% of the area would be considered a deep subduction zone. There is a 10% deep thrust area 19 to 27 miles directly below Wasilla with a profile much like the fault that triggered the 1964 Great Alaska Earthquake (Borough, 2013).
Floods/Erosion	Yes	The National Weather Service (NWS) operates a flood-forecasting network in the Borough. Predictions are often difficult for many of the smaller rivers because of the short time span between when the precipitation occurs and flooding starts. Significant flooding on the Little Susitna River and the Matanuska River have been caused by ice jams, snow melt, and unusual amounts of precipitation. In 2019, ice jam flooding on Willow Creek was problematic.
Ground Failure	No	The terrain in the Borough is not one likely to produce ground failure. As the Borough develops more and spreads out, ground failure due to manmade development will be assessed. Historical anecdotes indicate roads were likely built on old wooden debris, and effects may be noticed in the future. On October 7, 2019, the *Frontiersman*, a local newspaper published an article about a major rockslide that traveled nearly 1,000 feet down the north face of Pioneer Peak. Palmer and Butte residents heard it before they saw it. Apparently, the rockslide crashed down rapidly; for many minutes afterward, residents heard the settling and pinging of various rocks finding their new spot on the mountainside. In the wake of the landslide, a new mountain mark was made on Pioneer Peak. Rocks were likely released as precipitation from the torrential rain on October 5, 2019 made its way into the rocks, and the expansion of the freezing water broke the section(s) off. Geologists call this type of event mass wasting (Frontiersman, 2019). The Borough will evaluate if ground failure is appropriate to add as a hazard during the 2025 HMP Update planning process.
Tsunami & Seiche	No	This hazard does not exist for the Borough per the State of Alaska HMP (DHS&EM, 2018a).

Hazard Type	Should It Be Profiled?	Explanation
Volcanoes	Yes	The Borough has been affected by volcanic ashfall from volcanoes on the Kenai Peninsula Borough in the past.
Severe Weather	Yes	High winds are the Borough's concern. Annual weather patterns, severe cold, and blizzards also are predominant threats. High winds can reach hurricane force and have the potential to seriously damage community infrastructures, especially above ground utility lines.
Wildland/Conflagration Fires	Yes	The Borough is located in a region where wildland fire is present at a high probability. The 1996 Millers Reach Fire originated in Houston and spread to the Big Lake area and was one of the worst wildland fires in state history. It involved 37 fire departments and over 100 different agencies and organizations. In addition, 1,800 fire-fighting and support personnel responded within the first 48 hours. It took almost two weeks for the fire to be contained and during this time, it burned 37,336 acres and destroyed 344 structures. The 2015 Sockeye Fire in the Willow area of the Borough was another major fire. It burned nearly 7,220 acres and destroyed 55 residences during eight days before it was contained. In 2019, the Borough was active with various fires—the Montana Creek, Malaspina, McKinley, and Deshka Landing. The Montana Creek fire consisted of 367 acres, and the Malaspina Fire consumed 85 acres. The most destructive of the fires, the 3,753-acre McKinley fire burned between Willow and the Talkeetna cutoff and destroyed 51 homes, three businesses, and 84 outbuildings in its rapid spread due to high winds, either knocking down power lines or causing trees to fall on power lines. The number of evacuees was estimated at 350 to 400. The Deshka Landing Fire burned 1,543-acres and moved into the Nancy Lake State Recreation Area. Road access on the Parks Highway and the Alaska Railroad adjacent to the fires was erratic.

5.3 Hazard Profile

The specific hazards selected by the Project Team for profiling were examined in a methodical manner based on the following factors:

- Hazard Characteristics;
    - Typical event characteristics;
    - Potential climate change impacts are primarily discussed in the Changes in the Cryosphere hazard profile but are also identified where deemed appropriate within selected hazard profiles;
- History (geologic as well as previous occurrences);
- Location;
- Extent (breadth, magnitude, and severity);
- Impact (general impacts associated with each hazard are described in the following profiles, and detailed impacts to the Borough's residents and critical facilities are further described in Section 6 as part of the overall vulnerability summary for each hazard); and
- Recurrence probability statement of the likelihood of future events.

The hazards profiled for the Borough are presented in the rest of Section 5.3. They are placed in alphabetical order which does not signify the importance level or risk.

5.3.1 Cryosphere

5.3.1.1 Hazard Characteristics

The "cryosphere" is defined as those portions of Earth's surface and subsurface where water is in solid form, including sea, lake, and river ice, snow cover, glaciers, ice caps and ice sheets, and frozen ground (e.g., permafrost) (Figure 4). The components of the cryosphere play an important role in climate. Snow and ice reflect heat from the sun, helping to regulate the Earth's temperature. They also hold Earth's important water resources, and therefore, regulate sea levels and water availability in the spring and summer. The cryosphere is one of the first places where scientists are able to identify global climate change.

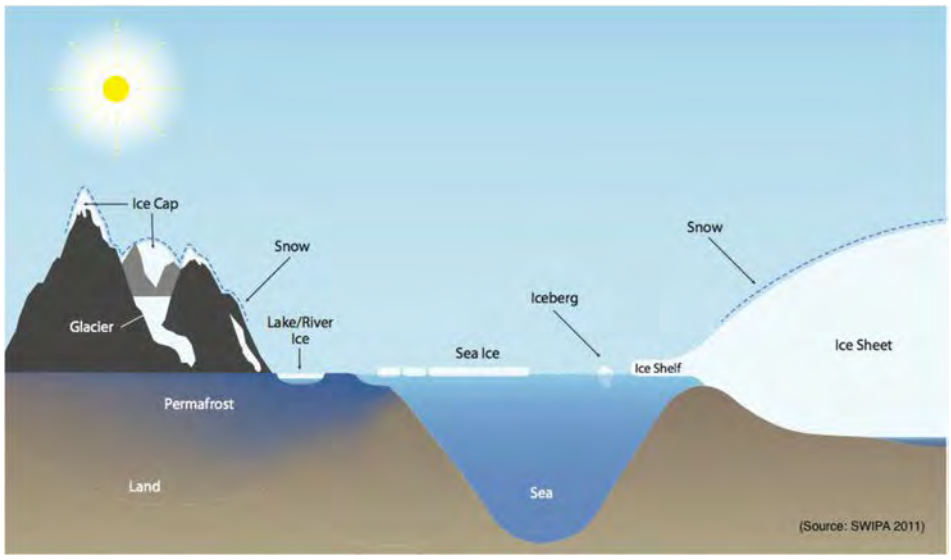
Hazards of the cryosphere can be subdivided into five major groups:

- Glaciers;
- Permafrost and periglacial;
- Sea ice;
- Snow avalanche; and
- Drought.

Of these major groups, all but sea ice applies to the Borough.

Glaciers are made of compressed snow, which has survived summer and transformed into ice. Over many years, layers of accumulated ice build into large, thickened ice masses. Due to the sheer mass of accumulated ice, glaciers flow like very slow rivers. Presently, glaciers occupy about 10% of the world's total land area, with most located in polar regions. Today's glaciers are much reduced from the last Ice Age, when ice covered nearly 32% of the land and 30% of the oceans. Most glaciers lie within mountain ranges that show evidence of a much greater

Figure 4. Cryosphere Components Diagram



Source: DHS&EM, 2018a

extent during the ice ages of the past two-million years, and recent retreat in the past few centuries. Hazards related to glaciers include ice collapse (e.g., glacial calving and ice fall avalanche), glacial lake outburst flood, and glacial surge.

Permafrost and periglacial hazards are caused by the effects of changing perennially frozen soil, rock, or sediment (known as permafrost) and the landscape processes that result from extreme seasonal freezing and thawing. Permafrost is found in nearly 85% of Alaska and is thickest and most extensive in Arctic Alaska north of the Brooks Range. It is present virtually everywhere and extends as much as 2,000 feet below the surface of the Arctic Coastal Plain. Southward from the Brooks Range, permafrost becomes increasingly thinner and more discontinuous, broken by pockets of unfrozen ground until it becomes virtually absent in Southeast Alaska, with the exception of pockets of high-elevation alpine permafrost (DHS&EM, 2018a).

A snow avalanche is a mass of snow, ice, and debris that releases and slides or flows rapidly down a steep slope, either over a wide area or concentrated in an avalanche chute or track. Avalanches reach speeds of up to 200 mph and can exert forces great enough to destroy structures and uproot or snap large trees. A moving avalanche may be preceded by an "air blast," which is also capable of damaging buildings. Snow avalanches commonly occur in the high mountains of Alaska during the winter and spring as the result of heavy snow accumulations on steep slopes.

Drought conditions increase wildfires. Drought conditions also have the potential to adversely affect subsistence resources such as salmon (loss of habitat, decreased survival rates, and decreased access to salmon spawning grounds). Furthermore, drought conditions have the potential for many unknowns related to subsistence resources when considering changes in the climate over time – berries, terrestrial animals, wild plants, etc. are all potentially affected by drought.

Alaska is particularly vulnerable to cryosphere hazards, as much of its social and economic activity is connected to the existence of snow, ice, and permafrost.

Glaciers

Ice Collapse hazards result from large ice chunks breaking off from a glacier, either through glacial calving or as an ice fall avalanche. These hazards are almost impossible to predict, and in contrast to most other hazards in the cryosphere environment, they can happen independently of weather (e.g., heavy precipitation and rapid warming). In Alaska, ice collapses have, on multiple occasions, been triggered by earthquakes. Depending on the volume of ice collapse, these hazards can have tremendously devastating effects and can cause additional hazards, such as flooding and snow avalanches.

Glacial Calving is the breaking away of a mass of ice from a near-vertical ice face along the terminus of a glacier, often into a large body of water. Glacial calving can be accompanied by a loud cracking or booming sound as the blocks of ice break loose and crash into the water. The entry of the ice into the water can cause large, sometimes hazardous, waves that can swamp boats and inundate nearby shores.

Ice Fall Avalanches are triggered by new or existing cracks (crevasses) in the glacier ice that allow chunks of a glacier to detach and fall down the slope as a mass of broken ice. The mass of these ice falls often triggers snow avalanches on the slope below as they hit the snowpack. Ice fall avalanches are unrelated to precipitation, temperature, or other typical snow avalanche factors.

Permafrost and Periglacial

In the periglacial environment, the effects of freezing and thawing drastically modify the ground surface. Types of modification include the displacement of soil materials, migration of groundwater, and the formation of unique landforms. Many periglacial regions are underlain by permafrost that strongly influences geomorphic processes acting in these parts of the world.

Permafrost, defined as ground with a temperature that remains at or below freezing (32°F) for two or more consecutive years, can include rock, soil, organic matter, unfrozen water, air, and ice. Regions with permafrost are typically categorized by percent of surface area underlain by permafrost (Figure 5): continuous (>90%), discontinuous (50-90%), sporadic (10-50%), and isolated (<10%) permafrost. The Borough has isolated, sporadic, and discontinuous permafrost. Figure 6 is a generalized permafrost hazard area map that was produced in 2018 as part of the State of Alaska HMP Update (DHS&EM, 2018a). The Borough is generally in a low or moderate permafrost hazard area.

Frost Cracking results from freezing soil contraction. This contraction can be forceful enough that the ground cracks in order to release tensile stress, similar to what happens when mud dries to form mud cracks. In extreme cases, polygons may form from thermal contraction in very cold environments and develop ice wedges within the cracks from meltwater and blowing snow accumulation. Frost cracking can be hazardous when it occurs in road surfaces, breaking pavement, and road bed structure.

Frost Heaving occurs when the soil surface is lifted with great strength from below by seasonal ice lens development in fine-grained soils. The temperature gradient from the freezing surface into the unfrozen ground drives liquid water to the freezing front, where it can freeze into solid ice lenses. Buildings and roads are affected by the lifting force of the growing ice lenses, but the most destructive conditions occur when there is differential frost heave. Differential frost heave occurs when ice lens formation is non-uniform, and only portions of the soil surface are pushed up—this can break building foundations and roads to pieces. A compounding effect of the seasonal ice lenses that cause frost heaving is that, upon thawing, the soil is left supersaturated, meaning that the liquid is carrying the weight of the soil. Pressure on the supersaturated soil, such as driving on a road across the thawed ice heave area, causes horizontal (lateral) movement of the soil and destruction of the overlying roadbed. This is the reason that roads can fail in spring, and why there are restrictions on axle weight.

Frost Jacking occurs when a solid object, such as a fence post or foundation block, is incrementally jacked out of the ground due to ice lens formation within the soil during repeated freeze-thaw cycles. Two mechanisms are believed to be responsible for frost jacking:

- Freezing soil grips the object and heaves upward due to expanding ice, thereby lifting the object out of the ground; and

- Water trickles underneath a solid object, and resultant ice growth during freezing pushes the object out of the ground. This process can cause foundations to break and buildings to collapse.

Snow Avalanche

Snow avalanche is a downhill mass movement of snow or fluidized snow. The damage caused by an avalanche varies based on the avalanche type, the consistency and composition of the avalanche flow, the flow's force and velocity, as well as the avalanche path. Its size, run-out distance, and impact pressure vary. Avalanches have the potential to kill people and wildlife, destroy infrastructure, level forests, and bury entire communities. Significant avalanche cycles (multiple avalanches naturally releasing across an entire region) are generally caused by long periods of heavy snow, but avalanche cycles can also be triggered by rain-on-snow events, rapid warming in the spring, and earthquakes.

An avalanche releases when gravity-induced shear stress on or within the snowpack becomes larger than its shear strength. Triggers can be natural (e.g., rapid weight accumulation during or just after a snowstorm or rain event, warming temperatures, and seismic shaking) or artificial (e.g., human weight or avalanche-control artillery).

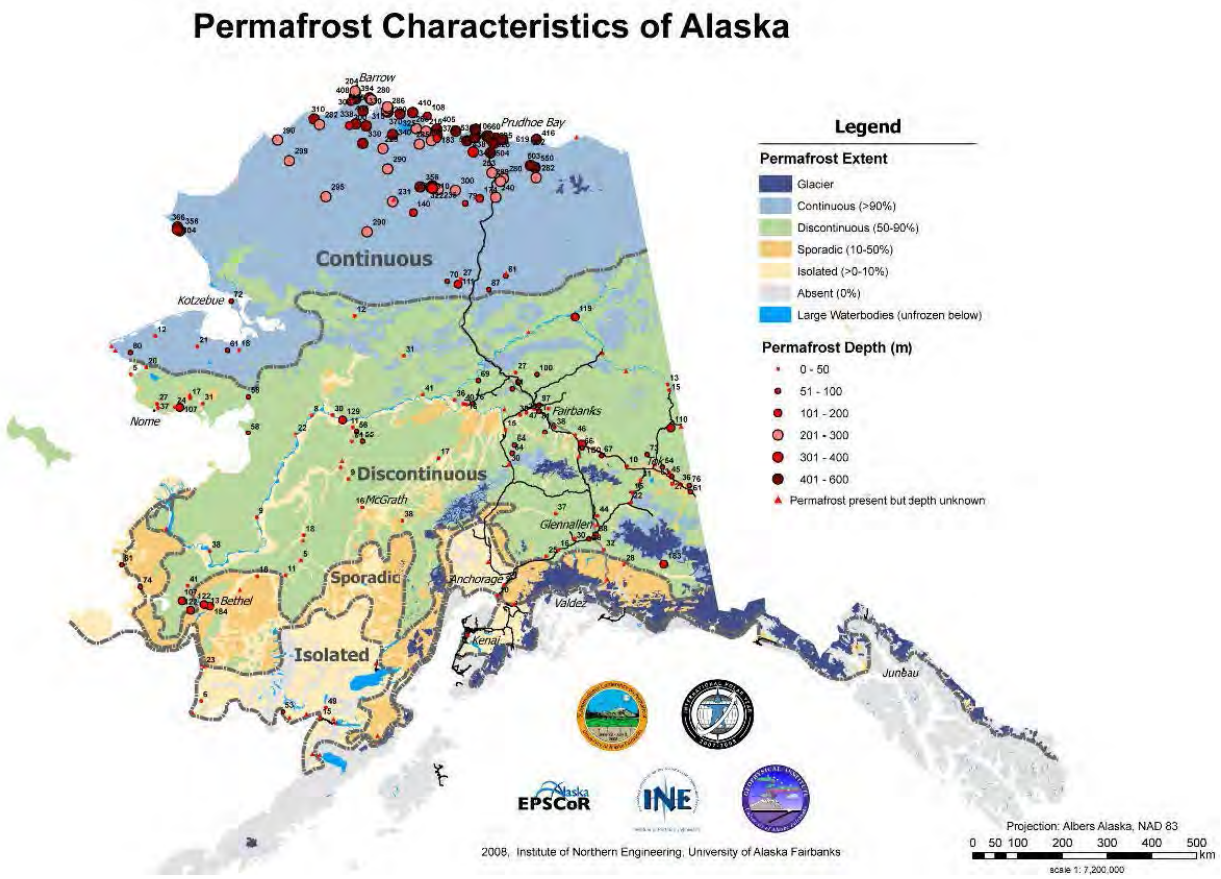
Terrain factors that influence avalanche release are slope angle, aspect, and curvature, as well as topography (terrain roughness). Avalanches are also controlled by vegetation cover and elevation, which are both factors in getting enough snow accumulation on the slope. Avalanches typically release on slopes greater than 25 degrees and less than 60 degrees; this is the slope range where the snow can accumulate enough to build a slab, but also where snow tends to remain in place without sluffing off due to gravity. It is important to remember that avalanche run-out (deposition) can occur on all slopes. Figure 7 is a generalized avalanche-potential map of Alaska that was produced in 1980 by compiling and cross-correlating topographic relief, snow-avalanche regions, climatic zones, snowpack characteristics, and known and suspected avalanche activity.

New Alaska avalanche studies are currently being carried out by the DGGS and the University of Alaska Fairbanks (UAF). Figure 8 depicts potential snow avalanche release areas within a six-mile buffer of roads in Alaska. The modeling uses digital topographic information as input and determines the potential release zones based on geostatistical parameters (e.g., elevation, slope, and curvature) and land cover (e.g., trees). This is a preliminary model result that does not include weather or snowpack parameters, but more advanced studies that will incorporate these elements are planned (DHS&EM, 2018a).

5.3.1.2 Climate Factors

Climate has a major effect on cryosphere hazards because these hazards are so closely linked to snow, ice, permafrost, and ground temperature. Changes in climate can modify natural processes and increase the magnitude and recurrence frequency of certain geologic hazards (e.g., avalanches, floods, erosion, slope instability, and permafrost thaw), which if not properly addressed, could have a damaging effect on Alaska's communities and infrastructure, as well as on the livelihoods and lifestyles of Alaskans.

Figure 5. Permafrost Characteristics of Alaska



During the last several decades, Alaska has warmed twice as fast as the rest of the U.S. Alaska's glaciers are in steep decline and are among the fastest-melting glaciers on Earth. New ice-dammed lakes are being formed in valleys formerly occupied by glaciers, and as climate change continues on its current trajectory, more ice-dammed lakes can be expected. Glacier retreat also causes debuttressing and valley-wall unloading, potentially increasing rockfall and landslide incidences.

Permafrost is at an increased risk of thawing as a result of climate change. The major climatic factor leading to warming and thawing permafrost is an increase in air temperatures. Another important factor is the potential increase in snow depth predicted by the majority of climate models. Snow insulates permafrost from low winter temperatures, which leads to an increase in ground temperatures and diminishes permafrost stability. When soils are warm, permafrost becomes unstable and is sensitive to catastrophic collapse in conjunction with flooding and erosion. Even in non-ice-rich soils, process-driven models show more material is available for erosion and transport when the soil is thawed, which leads to increased exposure of underlying or adjacent frozen material to thermal and physical stressors (DHS&EM, 2018a).

Scientific data on the impacts of changing climate on the active layer (i.e., the surface layer above the permafrost that thaws each summer) is sparse, but on the decadal timescale (i.e.,

Figure 6. Permafrost Hazard Areas Map

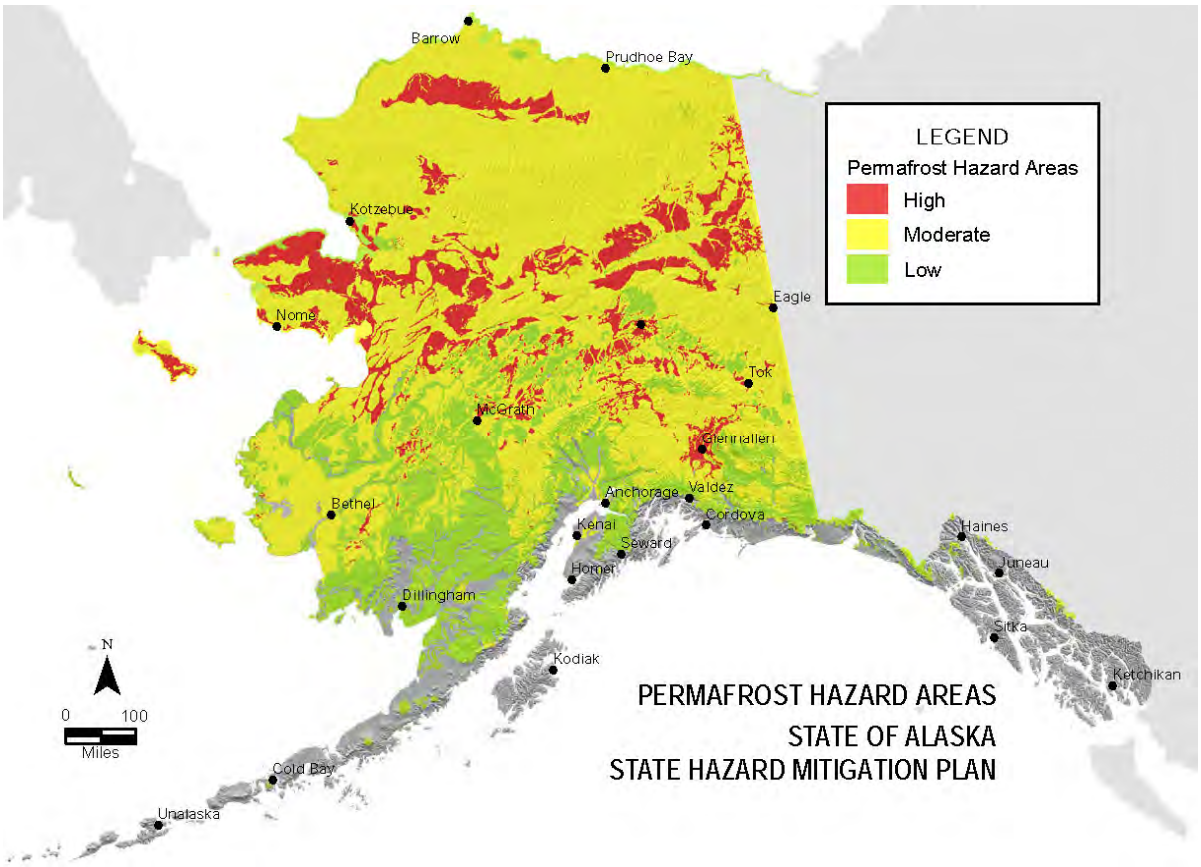


Figure 7. Map Depicting Alaska's Potential Snow-Avalanche Areas

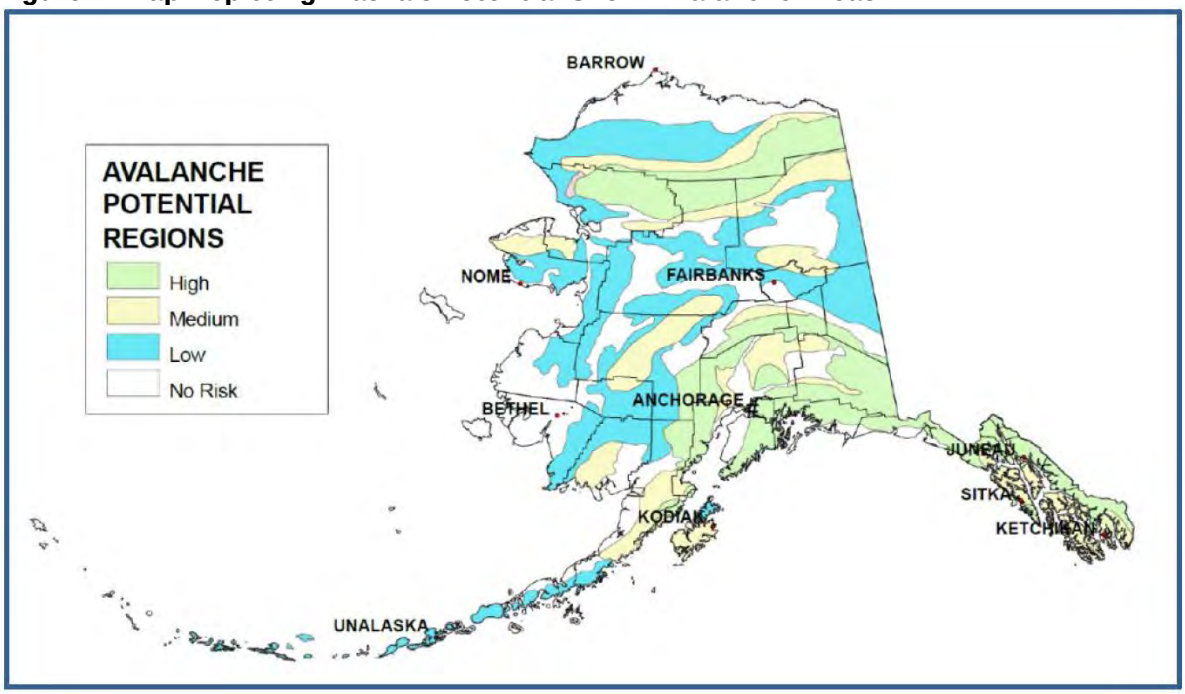
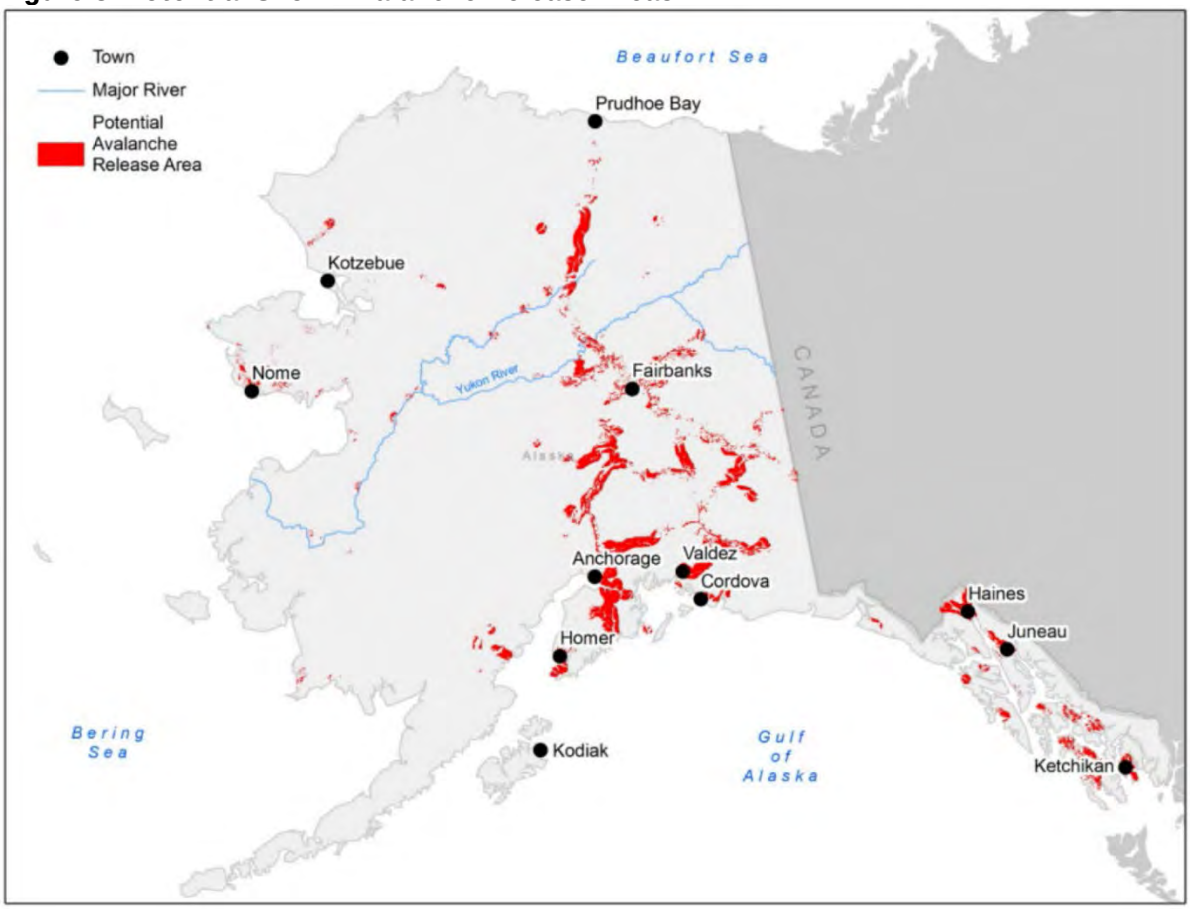


Figure 8. Potential Snow-Avalanche Release Areas



tens of years), the depth of the active layer looks to be increasing. This is potentially destructive to permafrost stability because the ground is not completely refreezing in winter.

Some studies suggest that warming climate may increase avalanche risk due to changes in snow accumulation and moisture content, as well as loss of snowpack stability because of changing air temperature. Increased rain-on-snow event frequency is leading to an increase in avalanche hazards all across Alaska.

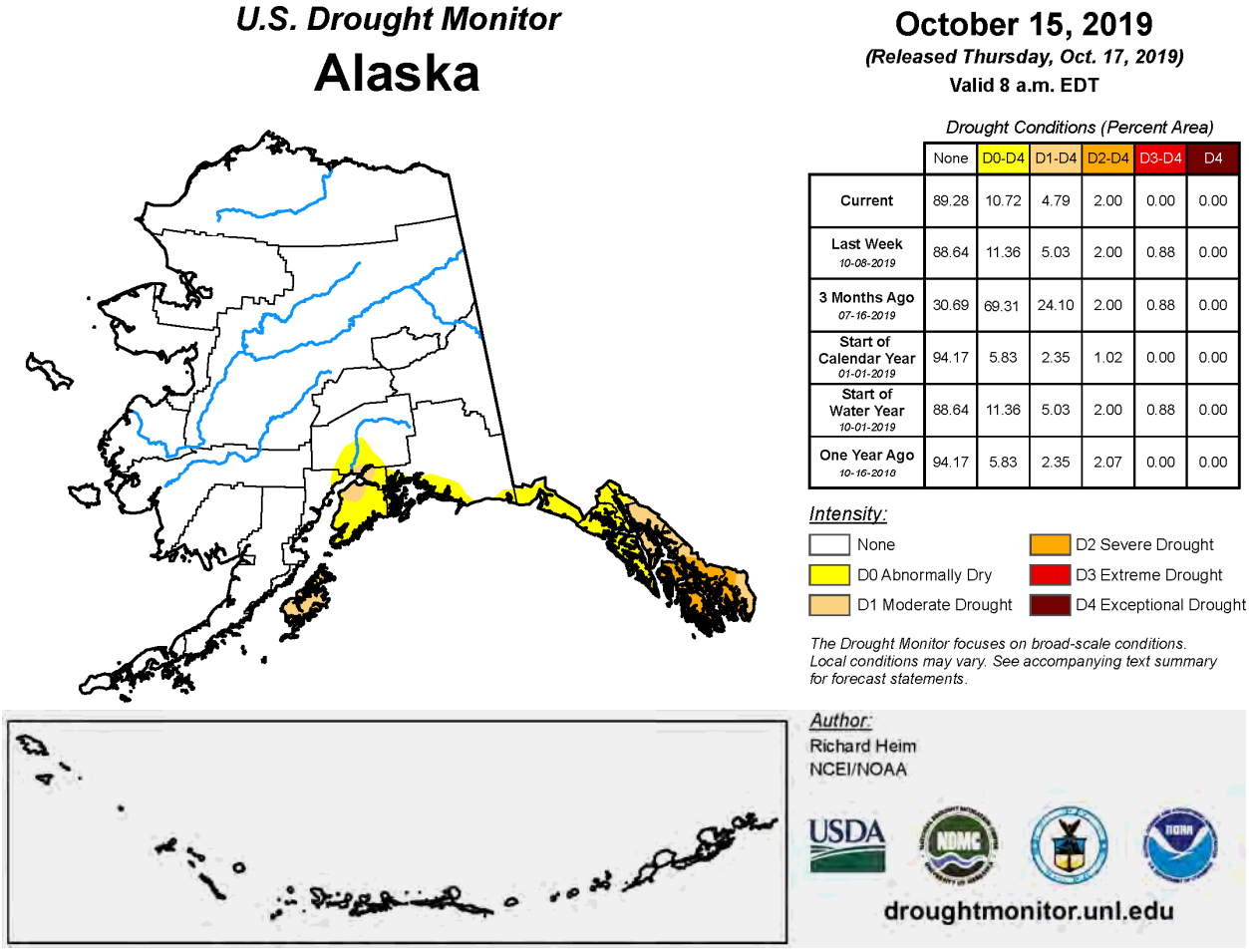
Drought

Although the Borough did not declare a disaster emergency declaration, the U.S. Drought Monitor showed moderate and abnormally dry conditions in the Borough. The U.S. Drought Monitor is produced through a partnership between the National Drought Mitigation Center at the University of Nebraska-Lincoln, the U.S. Department of Agriculture (USDA), and the National Oceanic and Atmospheric Administration (NOAA). Figure 9 illustrates drought conditions observed in Alaska. Drought conditions were experienced in the Borough in 2019.

5.3.1.3 Cryosphere Hazard History

There is no written history of changes to the cryosphere for the Borough with the exception of avalanches. Alaska leads the nation in avalanche accidents per capita and experiences multiple fatalities each year due to this hazard. In addition to human risk, road closure due to avalanches

Figure 9. U.S. Drought Monitor of Conditions in Alaska



is very costly. For example, a typical road closure with roughly 1,500 cubic feet of snow covering the road costs the Alaska Department of Transportation & Public Facilities (DOT&PF) approximately $10,000 to remove. In the winter of 1999 to 2000, unusually high snowfall from the Central Gulf Coast Storm fueled avalanches in Cordova, Valdez, Anchorage, Whittier, Cooper Landing, Moose Pass, Summit, the **Matanuska-Susitna Valley**, and Eklutna. Damages in these communities exceeded 11 million dollars, resulting in the first presidentially-declared avalanche disaster in U.S. history. This storm is listed as 00-191 and is included in the Severe Weather Section 5.3.5.3.

Colorado and Alaska have the highest annual per capita death and injuries caused by avalanches. This is because some of the most-traveled roads pass through avalanche-prone areas, and because there is a high frequency of backcountry avalanches triggered by the many hikers, skiers, and snowmachine users. There is growing exposure to this hazard as development continues to occur in avalanche-prone areas, and participation in winter recreational activities increases.

Table 4 lists avalanche hazard events for the past 20 years.

Table 4. Borough Avalanche Events

Day	Event
December 9, 2000	An avalanche fatality occurred between 1:30 pm and 2:00 pm. The put-in was an area north of Dunkle Mine, around Milepost 196 on the Parks Highway. The accident site was about 16 miles in from the road, just inside the park boundary. The victim went to help a stuck snowmachiner who had been "highmarking" on a hill which tapered into a ravine. The stuck snowmachiner got himself unstuck and rode downhill. The victim was just heading downslope when he was hit from behind (witnesses said he probably didn't even see the slide coming and thus, didn't accelerate to try to ride it out). The width of the slide was estimated between 1/4 and 1/2 mile wide. The victim was carried roughly 400 yards. A team of searchers found the sled and began probing upslope. Within about 15 minutes, they found the victim. He was buried face down, about four feet deep, roughly 20 feet upslope from his snowmachine.
February 3, 2001	Snowmachiners triggered an avalanche on a slope south of Eureka, near the east fork of the Matanuska River. The avalanche killed two members of the group and slightly injured a third man, who was carried downslope and trapped beneath his snowmachine until he was freed.
February 12, 2001	Three avalanches closed the road above the Motherlode Lodge in the Hatcher Pass area, coupled with nearly three feet of new snow.
November 11, 2001	A small wind slab avalanche released under a 30-year old woman and her male friend. The slide carried the two about 100 yards down the slope. The man came to rest on top of the snow. The woman was buried, head-down, under three feet of snow. She perished.
April 20, 2002	A weekend storm reportedly dumped more than four feet of snow on Hatcher Pass, setting up three avalanches that closed the road. No injuries or property damage was reported; however, three people from the Hatcher Pass Lodge got stuck when they tried to leave Saturday. They were taken out by snowmachine.
February 9, 2003	Two snowboarders were caught in an avalanche off Hatch Peak (in Hatcher Pass). One dug out, the other was buried for two hours before being finally dug out by rescuers who attempted, unsuccessfully, medical attention. Heavy wet snow fell in the Pass during the prior week, with more than a foot since Thursday. High winds over the weekend shifted snow loads to lee slopes, including the northeast-facing run near the Pass. Both snowboarders were at the base of the mountain when the avalanche let go.
February 28, 2006	An avalanche in Hatcher Pass above the Mother Lode Lodge killed a snowboarder.
November 2015	A person skiing on a solo trip disappeared and was assumed to have been buried by an avalanche.
January 2, 2016	A person riding a snowmachine was caught in a terrain trap when an avalanche released above him. He was buried under six feet of snow and perished.
January 16, 2016	A snowboarder triggered an avalanche on Skyscraper Mountain in Hatcher Pass Recreation Area. He was buried under 7.5 feet of snow and perished.
November 22, 2017	An avalanche in Hatcher Pass took the life of a local ski coach. Strong winds and low snow caused the snowpack to be very unstable.
March 19, 2018	Hatcher Pass Avalanche Center reported an avalanche closed the road to the ski area at the top. Ten people were stranded at the ski area for 24 hours while DOT&PF cleared the road. No one was injured.
March 2, 2020	A snowboarder died in an avalanche in Hatcher Pass near the popular ’16 Mile’ road run. A total of 33 inches of new snow accumulated over the weekend. The rapid load overloaded weak layers. A persistent slab problem was upgraded to a deep persistent slab problem, with the January layer of facets more than 39 inches in most locations.

Visual evidence of changes in the cryosphere within the Borough includes:

- Frost heaves on the highways and roads;
- Powerlines tilting to the side; and

- Subsidence as the active layer melts.

A brief summary from *Alaska's Changing Environment: Documenting Alaska's physical and biological changes through observations* is provided below (Thoman and Walsh, 2019).

- Temperatures have been consistently warmer than at any time in the past century.
- The growing season has increased substantially in most areas, and the snow cover season has shortened.
- Precipitation overall has increased. In Southcentral, annual precipitation since the 1990s has increased 3.4%. Flooding and erosion have increased.
- Recent years have brought many temperature extremes to Alaska, including the warmest year (2016), the warmest month (July 2019), and in places like Anchorage, the warmest day (July 4, 2019).
- Warmer springs and earlier snow melt have lengthened the wildfire season. Wildfire seasons with more than one million acres burned have increased 50% since 1990, compared to the 1950 – 1989 period. The frequency of longer wildfire seasons has increased dramatically.
- A major outbreak of spruce-bark beetles has been spreading through Southcentral Alaska during the past several years. The area affected by the outbreak increased from 33,000 acres in 2015 to 593,000 acres in 2018. While small populations of beetles are always present in spruce forests, sudden increases in their populations are favored by a dry summer, which reduces trees' capacity to produce sap, a defense against the beetle. Longer and warmer summers also increase beetles' reproductive capacity, while milder winters increase over-winter survival rates.

5.3.1.4 Location, Extent, Impact, and Recurrence Probability

Location

The Matanuska, Knik, and Nelchina Glaciers are the area's largest glaciers and the points of origin for the region's largest rivers. The Knik Glacier is located just south of the Borough boundary. The Matanuska and Nelchina Glaciers are located within Borough boundaries. At 27 miles long by four miles wide, the Matanuska Glacier is the largest glacier accessible by car in the U.S. Its terminus feeds the Matanuska River. It lies near the Glenn Highway about 100 miles northeast of Anchorage and flows about one foot per day. Due to ablation of the lower glacier, as of 2007, the location of the glacier terminus has changed little over the previous three decades. Nelchina Glacier is located 15 miles south of Eureka. Nelchina Glacier heads on the north side of the Chugach Mountains, with Mounts Siegfried, Valhalla, and Fafnir on its western fork, and Audubon Mountain on its eastern fork. It trends north to its terminus at the head of the Nelchina River. Nelchina Glacier is 22 miles long and drains into Tazlina Lake.

Port MacKenzie, located across Knik Arm from Anchorage, is a deep-water port that mainly serves industrial customers. The Borough owns and operates the dock; and it has been in operation since 2001. In 2005, a new deep-draft dock was completed, allowing larger export ships to use the facility. Currently, the port is accessed via a 40-mile road from the highway in

Wasilla. The 8,940-acre port is dedicated to commercial and industrial development. Sea ice is not an issue.

The slopes throughout the Hatcher Pass area and the slope of Pioneer Peak between Goose Creek and the Knik River Bridge are well-known avalanche areas in the Borough. There are no homes at Hatcher Pass. Homes along the Old Glenn Highway outside of Palmer have been relocated out of the danger zone.

Extent

Permafrost is found beneath nearly 85% of Alaska. Permafrost can harbor ice in many forms, ranging from massive ice bodies to ice lenses to disseminated interstitial ice crystals. Thawing causes landslides, ground subsidence, flooding, and erosion as well as lake disappearances or new lake development. Periglacial hazards result from the effects of repeated freezing and thawing and include frost cracking, frost heaving, and frost jacking, and can occur anywhere in the state.

The entire state of Alaska is at risk of effects of climate change. Historical climate data shows that the average annual temperature in Alaska has warmed about 4°F since the 1950s and 7°F in winter. The growing season has lengthened by about 14 days. Models predict continued warming, including an increase in temperature by 1.5 to 5°F by 2030 and 5 to 18°F by 2100.

Impact

Permafrost and periglacial impacts include a full range of damage from comparatively minor bending or buckling of manmade features due to heterogeneous movement, to complete destruction of infrastructure and buildings due to catastrophic ground failure and flooding.

Impacts associated with degrading permafrost include surface subsidence, infrastructure, structure, and/or road damage. Permafrost does not pose a sudden and catastrophic hazard, but improperly designed and constructed structures can settle as the ground subsides, resulting in loss of the structure or expensive repairs. Permafrost restricts use of the ground surface, and affects the location and design of roads, buildings, communities, and airfields. To avoid costly damage to these facilities, careful planning and design in the location and construction of facilities is warranted.

Permafrost impacts include a full range of damage from comparatively minor bending or buckling of manmade features due to heterogeneous movement, to complete destruction of infrastructure and buildings due to catastrophic ground failure. Permafrost has generated comparatively slow ongoing phenomena in the past, but warming climate is expected to increase the magnitude and frequency of damaging permafrost collapse. Indicators of a possible ground failure (involving melting permafrost) include:

- Springs, seeps, or wet ground that is not typically wet;
- New cracks or bulges in the ground or pavement;
- Soil subsiding from a foundation;

- Secondary structures (decks, patios) tilting or moving away from main structures;
- Broken water line or other underground utility;
- Leaning structures that were previously straight;
- Offset fence lines;
- Sunken or dropped-down road beds;
- Rapid increase in stream levels, sometimes with increased turbidity;
- Rapid decrease in stream levels even though it is raining or has recently stopped; and
- Sticking doors and windows, visible spaces indicating frames out of plumb.

Avalanches have the potential to kill people and wildlife, destroy infrastructure, level forests, and bury entire communities. In many areas of the state, avalanches lead to lengthy closures of important transportation routes. The economic impacts of such avalanches, from impeding traffic to removing avalanche debris blocking the transportation corridor, can be significant at both the local and state levels.

The Borough has two main roads (Parks Highway and Glenn Highway) connecting to the rest of the state's road systems. Most Alaska communities have road choke points such as bridges and steep terrain that are susceptible to multiple natural hazard impacts from earthquakes, floods, and changes to the cryosphere events such as avalanches.

Recurrence Probability

Changes to the cryosphere in the Borough are occurring and will continue to do so. The active layer of permafrost continues to thaw because of warmer summers and winters than what was typically experienced in the past although the Winter 2019/2020 is more like a "normal" winter than the past several years. Droughts and an increase of spruce-bark beetle could increase fire risk Borough-wide. The probability of future events is highly likely based on a minimum annual occurrence.

5.3.2 Earthquake

Alaska is one of the most seismically active regions in the world and is at risk of societal and economic losses due to damaging earthquakes. On average, Alaska has one "great" magnitude [(M) >8] earthquake every 13 years and one M 7-8 earthquake every year. Earthquakes have killed more than 130 people in Alaska during the past 60 years (DHS&EM, 2018a).

It is not possible to predict the time and location of the next big earthquake, but the active geology of Alaska guarantees that major damaging earthquakes will continue to occur and can affect almost anywhere in the state. Scientists have estimated where large earthquakes are most likely to occur, along with the probable levels of ground shaking to be expected. With this information, as well as information on soil properties and landslide potential, it is possible to estimate earthquake risks in any given area.

Alaska earthquake statistics include:

- Alaska is home to the second-largest earthquake ever recorded (1964 Great Alaska Earthquake, M 9.2);
- Alaska has 11% of the world's recorded earthquakes; and
- Three of the eight largest earthquakes in the world occurred in Alaska.

Since 1900, Alaska has had an average of:

- 45 M 5-6 earthquakes per year;
- 320 M 4-5 earthquakes per year; and
- 1,000 earthquakes located in Alaska each month.

Source: UAF Earthquake Center

5.3.2.1 Hazard Characteristics

An earthquake is a sudden motion or trembling caused by a release of stress accumulated within or along the edge of Earth's tectonic plates. The effects of an earthquake can be felt far beyond the site of its occurrence. Earthquakes usually occur without warning, and after only a few seconds, can cause massive damage and extensive casualties. The most common effect of earthquakes is ground motion, or the vibration or shaking of the ground during an earthquake.

Ground motion generally increases with the amount of energy released and decreases with distance from the rupture area. An earthquake causes waves in the earth's interior (i.e., seismic waves) and along the earth's surface (i.e., surface waves). Two kinds of seismic waves occur: P (primary) waves are longitudinal or compressional waves similar in character to sound waves that cause back and forth oscillation along the direction of travel (vertical motion), and S (secondary) waves, also known as shear waves, are slower than P waves and cause structures to vibrate from side to side (horizontal motion). There are also two types of surface waves: Raleigh waves and Love waves. These waves travel more slowly and typically are more damaging than seismic waves because they cause larger motions and their frequency is close to harmonic frequencies for human structures and for sedimentary deposits.

In addition to ground motion, several secondary natural hazards can occur from earthquakes such as:

- **Strong Ground Motion** is ground shaking. Strong ground motion intensity is directly correlated with earthquake magnitude (i.e., the larger the earthquake magnitude, the more intense and widespread the ground shaking will be). The strong ground motion severity is also dependent on the distance from the energy source.
- **Surface Rupturing** occurs when the subsurface patch of fault that slips in an earthquake intersects the earth's surface. This causes discrete, differential ground movement during intense earthquake shaking. The relative crustal block motion is dictated by the rupture's fault type, which can be horizontal, vertical, or a combination of both. Earthquakes larger than a M of 6.5 have sufficient energy to create surface ruptures, but whether or not this occurs is dependent on the earthquake's depth. The shallower a

depth at which a significant earthquake occurs, the more likely it is to create a surface rupture. Permanent displacement along faults can be substantial. Surface ruptures, as a product of intense strong ground motion, can cause severe damage to existing structures.

- **Landslides/Debris Flows** occur as a result of horizontal seismic inertia forces induced in the slopes by ground shaking. The most common earthquake-induced landslides include shallow, disrupted landslides such as rock falls, rockslides, and soil slides. Debris flows are created when surface soil on steep slopes becomes completely saturated with water. Once the soil liquefies, it loses the ability to hold together and can flow downhill at very high speeds, taking vegetation and/or structures with it. Slide risks increase after an earthquake during a wet winter.

The severity of an earthquake can be expressed in terms of intensity and M. Intensity is based on the damage and observed effects on people and the natural and built environment. It varies from place to place depending on the location with respect to the earthquake rupture (where the fault moved). While the area directly above the rupture usually experiences the most intense earthquake effects (e.g., shaking), the total area affected can cover hundreds of thousands of sq. miles, depending on the earthquake's M.

Larger earthquakes are less common than smaller earthquakes, such that the smallest earthquakes are extremely frequent, while the largest earthquakes are relatively infrequent.

Earthquakes are also classified by their felt effects (e.g., perceived shaking intensity). However, the effects of an earthquake are directly related to the distance from the earthquake rupture, among other parameters such as the type of crust where the earthquake occurs. In general, the closer one is to an earthquake's epicenter, the more severe the felt effects and damage will be. An earthquake's intensity is described by the Modified Mercalli Intensity (MMI) Scale. As shown in Table 5, the MMI Scale consists of 10 increasing levels of intensity that range from imperceptible to catastrophic destruction. Peak ground acceleration (PGA) is also used to measure earthquake intensity by quantifying how hard the earth shakes in a given location. PGA can be measured as acceleration due to gravity (g) (MMI, 2006).

Table 5. Perceived Shaking, Potential Damage, and Peak Ground Acceleration

PERCEIVED SHAKING	Not felt	Weak	Light	Moderate	Strong	Very strong	Severe	Violent	Extreme
POTENTIAL DAMAGE	none	none	none	Very light	Light	Moderate	Mod./Heavy	Heavy	Very Heavy
PEAK ACC.(%g)	<0.05	0.3	2.8	6.2	12	22	40	75	>139
PEAK VEL.(cm/s)	*<0.02*	*0.1*	*1.4*	*4.7*	*9.6*	*20*	*41*	*86*	*>178*
MMI scale	I	II–III	IV	V	VI	VII	VIII	IX	X+

M is the measure of the earthquake's strength and is related to the amount of seismic energy released at the earthquake's hypocenter, the actual location of the energy released inside the earth. It is based on the amplitude of the earthquake waves recorded on instruments, known as the Richter magnitude test scales, which have a common calibration.

Earthquakes in Southcentral Alaska are produced by a number of different tectonic features.

1. The strongest earthquakes in Southcentral Alaska are generated by the megathrust fault that marks the contact zone between the subducting Pacific and overriding North American plates. The 1964 M of 9.2 Great Alaska Earthquake, which is still the second largest earthquake ever recorded worldwide, began under Prince William Sound.
2. Intermediate depth seismicity (below 20 miles) occurs in the so-called Benioff Zone, where the subducting Pacific Plate descends towards the mantle beneath the North American Plate. This zone extends along Aleutian Arc, Alaska Peninsula, and Cook Inlet and terminates beneath the northern foothills of the Alaska Range. In southern and central Alaska, this seismicity abates at a depth of approximately 140 miles, reflecting the down-dip extension of the Pacific Plate. Historically, M 6+ earthquakes of this type have been recorded beneath Cook Inlet.
3. Crustal seismicity in this region can be attributed to three major sources: the faults and folds of the Cook Inlet basin, the Castle Mountain Fault (Figure 14), and the wide band of diffuse seismicity extending from northern Cook Inlet to the Denali Fault (Figure 13). Mapped geological structures in upper Cook Inlet are capable of generating strong earthquakes. The April 1933 M of 6.9 earthquake, which caused considerable damage in Anchorage, appears to have occurred on such a structure. The Castle Mountain Fault, which passes 25 miles north of Anchorage, exhibits geological evidence of Holocene offsets and generated the M of 7.5 1984 Sutton earthquake. The diffuse zone of seismicity between Cook Inlet and the Denali Fault may mark a deformation zone between the Bering microplate to the west and the southern Alaska block to the east. This broad zone of seismicity includes a series of predominantly thrust faults, and a 1943 M of 7.0 earthquake may have originated in this band.

5.3.2.2 History

Since 1925, 39 earthquakes have been recorded with a M of 6.0 or greater within a 150-mile radius of the approximate center of the Borough (62.133610° N, 149.906096° W) (Table 6). Within the same area, there have been 179 earthquakes greater than a M of 5.0 and 1,119 greater than a M of 4.0. The largest two recorded earthquakes within 150 miles of the Borough within the last 20 years measured a M of 7.9 occurring on November 2, 2002, and a M of 7.1 occurring on November 30, 2018. The November 30, 2018 earthquake caused significant damage to infrastructure and neighborhoods within the Borough (see Section 5.3.2.3 for preliminary impact numbers) (see Figures 10 and 11).

Table 6. Historical Earthquakes within a 150-Mile Radius of the Approximate Center of the Borough

Date	Latitude	Longitude	Depth	M	Place
November 30, 2018	61.3464	-149.9552	46.7	7.10	Point MacKenzie, Matanuska-Susitna Borough
September 25, 2014	61.9449	-151.8160	108.9	6.20	60 miles west northwest of Willow
November 3, 2002	63.5141	-147.4529	4.2	7.90	Central Alaska
October 23, 2002	63.5144	-147.9116	4.2	6.60	Central Alaska
May 1, 1991	62.4760	-151.4130	114.2	6.30	Central Alaska
September 7, 1983	60.9760	-147.5000	45	6.40	Southern Alaska

July 12, 1983	61.0310	-147.2860	37	6.60	Southern Alaska
March 28, 1964	60.9080	-147.3390	25	9.20	1964 Prince William Sound Earthquake
October 21, 1962	61.3900	-149.2100	71	6.00	Southern Alaska
August 18, 1962	62.2600	-152.5400	46	6.13	Central Alaska
July 16, 1962	62.2700	-152.5800	50	6.00	Central Alaska
June 29, 1962	62.4000	-152.1700	23	6.00	Central Alaska
May 10, 1962	61.9600	-150.1100	82	6.00	Southern Alaska
August 28, 1959	63.4200	-148.8500	44	6.00	Central Alaska
October 3, 1954	60.6510	-150.3920	61.5	6.40	Kenai Peninsula
March 3, 1954	61.5400	-146.7800	56	6.25	Southern Alaska
June 25, 1951	61.1000	-150.1000	128	6.25	Southern Alaska
August 19, 1948	63.0000	-150.5000	100	6.25	Central Alaska
October 16, 1947	64.1310	-148.6130	26	7.20	Central Alaska
November 3, 1943	61.7760	-151.0510	15	7.60	Southern Alaska
July 30, 1941	60.9270	-151.0330	35	6.40	Kenai Peninsula
October 11, 1940	60.0000	-150.5000	UKN	6.00	Kenai Peninsula
September 4, 1935	63.7500	-152.5000	UKN	6.25	Central Alaska
August 2, 1934	61.5000	-147.5000	UKN	6.00	Southern Alaska
June 18, 1934	60.8550	-151.3160	15	6.00	Kenai Peninsula
June 2, 1934	61.2500	-147.0000	UKN	6.25	Southern Alaska
May 4, 1934	61.5350	-147.7810	25	6.90	Southern Alaska
June 19, 1933	61.2500	-150.5000	UKN	6.00	Southern Alaska
June 13, 1933	61.0000	-151.0000	UKN	6.25	Southern Alaska
April 27, 1933	61.1310	-151.0040	15	6.90	Southern Alaska
January 4, 1933	60.9010	-148.3950	20	6.40	Kenai Peninsula
September 14, 1932	61.0000	-148.0000	50	6.25	Southern Alaska
June 8, 1932	62.5000	-153.3000	UKN	6.00	Central Alaska
March 25, 1932	62.5360	-152.9570	15	6.80	Central Alaska
March 25, 1932	62.5000	-153.0000	UKN	6.00	Central Alaska
July 3, 1929	62.5000	-149.0000	UKN	6.25	Central Alaska
January 21, 1929	64.0000	-148.0000	UKN	6.25	Central Alaska
June 21, 1928	60.5590	-147.0390	15	6.80	Southern Alaska
February 23, 1925	61.1090	-147.7550	25	6.60	Southern Alaska

Additionally, the 2002 Denali Fault earthquake provided disaster assistance to the Borough per the DHS&EM *Disaster Cost Index* (DHS&EM, 2018b).

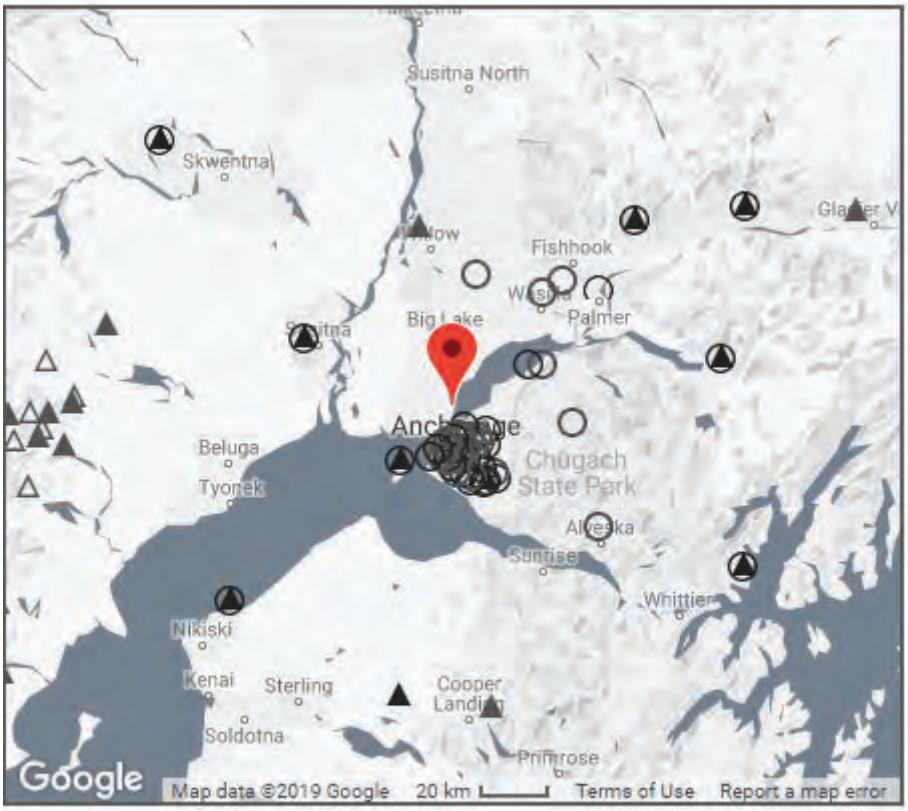
03-203 Denali Fault Earthquake (AK-DR-1440) Declared November 6, 2002 by Governor Knowles, then FEMA-Declared November 8, 2002: A major earthquake with a preliminary magnitude of 7.9 occurred on the Denali Fault in Interior Alaska on November 3, 2002, with strong aftershocks. The earthquake caused severe and widespread damage and loss of property, and threat to life and property in the Fairbanks North Star Borough, the Denali Borough, the **Matanuska-Susitna Borough**, and numerous communities within the Delta Greely, Alaska Gateway, Copper River, and Yukon-Koyukuk Regional Education Attendance Areas including the cities of Tetlin, Mentasta Lake, Northway, Dot Lake, Chistochina and Tanacross, and the unincorporated communities of Slana and Tok. The areas experienced severe damage to numerous personal residences requiring evacuations and sheltering of residences; extensive damage to primary highways including the Richardson Highway, the Tok Cutoff, **the Parks Highway**, and road links to communities including the road to Mentasta and Northway. Damage to supports for the Trans-Alaska Pipeline necessitated the shutdown of the pipeline. Additionally, fuel spills from residential storage tanks and significant damage to water, septic, sewer and electrical systems also occurred. Not all of the

areas listed in the State disaster were included in the Federal Individual Assistance Program. Assistance to those areas was through the State Individual Assistance Program. Additionally, not all of the areas listed in the State declaration were eligible for all categories of assistance under the Federal Public Assistance Program. Those areas were only eligible for Debris Removal & Emergency Protective Measures under the Federal Public Assistance Program but were eligible for all Permanent Work categories under the State Public Assistance Program. FEMA also authorized 404 Mitigation funding. Individual Assistance totaled $67K for 12 applicants. Public Assistance totaled $24.8 million for 17 applicants with 53 project worksheets (PWs).

The President declared a disaster (DR-4413) for the November 30, 2018 Earthquake with a M of 7.1 with its epicenter at Point MacKenzie, Alaska within the Borough, but a description has not yet been added to the DSH&EM *Disaster Cost Index* (DHS&EM, 2018b). This earthquake was located 10 miles north of Anchorage, at a depth of 27.4 miles and occurred at 8:29 am. It was followed by numerous significant aftershocks. See Figure 10 for the epicenter location and Figure 11 for pictures of some damages.

Wide-spread damage occurred to structures and roadways throughout the Borough as well as the Anchorage Municipality. Houston Middle School in the Borough was destroyed, and FEMA determined it will be a demolition/rebuild project. A brief summary of observed strengths from

Figure 10. November 30, 2018 Earthquake Epicenter at Point MacKenzie



November 30, 2018 08:29:29 AKST
61.3234°N 149.9234°W Depth 27.4 miles

the Quick-Look After-Action Report on January 29, 2019 included:

- Matcom was able to maintain call receiving and dispatch services throughout the incident even though suffering physical damage to the dispatch center.
- The Department of Emergency Services was able to answer all requests for service although some calls had to be reprioritized and stacked.
- Fire Service Areas and Emergency Medical Services (EMS) were able to manage the requests for emergency services including two structure fires, 31 EMS calls, and 111 calls for fire department assistance, which included 49 reported gas leaks.
- The Borough School District competently protected the students in their care and conducted a rapid assessment of damages.
- The Matanuska-Susitna Regional Medical Center was able to maintain their services and overcame structural and operational challenges in providing care to 117 persons injured by the earthquake.

5.3.2.3 Location, Extent, Impact, and Recurrence Probability

Location

The Uniform Building Code rates the entire state of Alaska in Earthquake Zone 4, the highest hazard level. Figures 12 and 13 show the locations of active and potentially active faults in Alaska. Approximately 75% of Alaska's detected earthquakes occur in the Alaska Peninsula, Aleutian, Cook Inlet, and Anchorage areas. About 15% occur in Southeast Alaska, and the remaining 10% occur in the Interior. The greatest earthquake in North American history occurred in the Alaska-Aleutian Seismic zone. That earthquake was a M of 9.2, lasting between four and five minutes and was felt over a 7,000,000 sq. mile area. This earthquake occurred 75 miles southeast of Palmer and 85 miles southeast of Wasilla which are the primary population centers of the Borough. It caused a significant amount of ground deformation as well as triggering landslides and tsunamis resulting in major damage throughout the region. The megathrust zone where the North Pacific Plate plunges beneath the North American Plate still has the potential to generate earthquakes up to a M of 9. Within 25 miles of Anchorage, there are at least three suspected active faults with the potential to create earthquakes with M's of 7.5. One of them, the Castle Mountain Fault, produced an earthquake with an M of 7.5 near Sutton in 1984 and may have generated a M of 6.9 in an earthquake that shook Anchorage in 1933. This area is of concern, as a great deal of development has and continues to occur along the fault.

The Borough's "core area" is in the Cook Inlet basin. The Cook Inlet basin is a northeast-trending fore arc basin located between the Chugach and Kenai Mountains to the south and the Alaska Range and the Aleutian volcanic arc to the north and west. Major fault zones are close to the margin of the basin: the Castle Mountain fault to the north, the Bruin Bay fault to the northwest, and the Border Ranges fault along the south. Folds in the basin are complex, discontinuous structures that have variable shape and convergence and are commonly anchored by blind thrust faults. These are thrust faults that do not rupture all the way up to the surface so there is no evidence of it on the ground. They are "buried" under the uppermost layers of rock in the crust. Figures 14 and 15 show the major faults in the Borough's "core area".

Figure 11. Vine Road, Houston Middle School, and Alaska Railroad



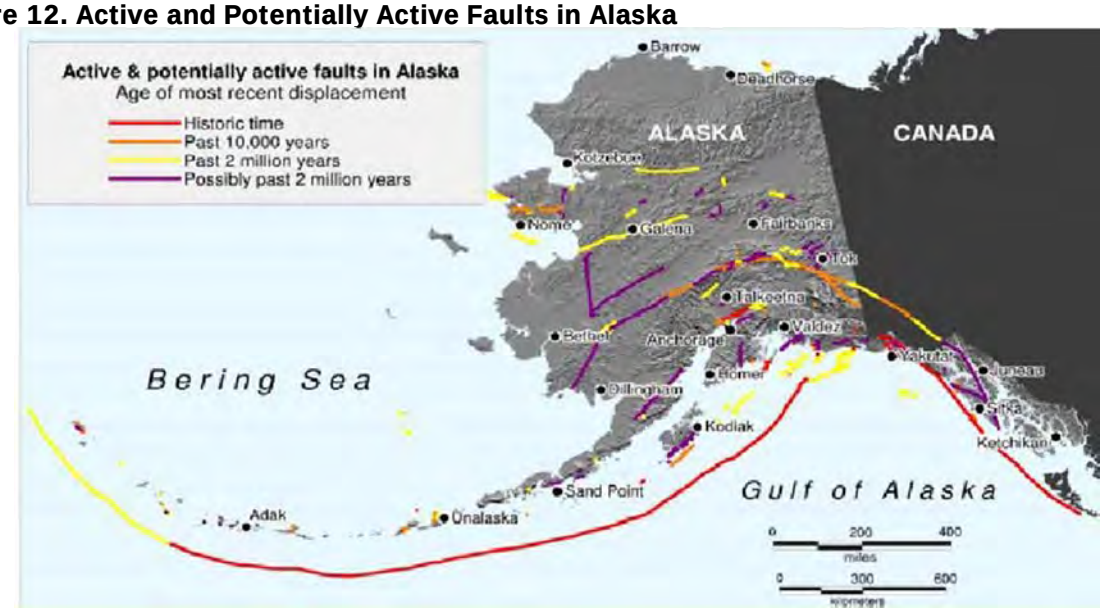
Extent

Although major earthquakes occur relatively infrequently, the Borough remains vulnerable to significant damages from an earthquake.

"Alaska has changed significantly since the damaging 1964 earthquake, and the population has more than doubled. Many new buildings are designed to withstand intense shaking; some older buildings have been reinforced, and development has been discouraged in some particularly hazardous areas.

Despite these precautions, and because practices to reduce vulnerability to earthquakes are not applied consistently in regions of high risk, future earthquakes may still cause life-threatening

Figure 12. Active and Potentially Active Faults in Alaska



damage to buildings, cause items within buildings to be dangerously tossed about, and disrupt basic utilities and critical facilities.

FEMA estimates that with the present infrastructure and policies, Alaska will have the second highest average annualized earthquake-loss ratio (ratio of average annual losses to infrastructure) in the country. Reducing those losses requires public commitment to earthquake-conscious siting, design, and construction. The Seismic Hazards Safety Commission is committed to addressing these issues. Earthquake-risk mitigation measures developed by similar boards in other states have prevented hundreds of millions of dollars in losses and significant reductions in casualties when compared to other seismically active areas of the world that do not implement effective mitigation measures. The San Francisco (1989), Northridge (1994), and Nisqually (2001) earthquakes caused comparatively low losses as a result of mitigation measures implemented in those areas. Many of these measures were recommended by the states' seismic safety commissions."

Source: HAZUS 99 Estimated Annualized Earthquake Losses for the U.S., FEMA Report 66. September 2000. Via DHS&EM, 2018a.

Impact

The State of Alaska Individual Assistance program is designed to provide grant funding to individuals and families for damages to their real property and personal property, as well as medical expenses that are a direct result of the disaster event. In addition, the Individual Assistance program can provide temporary housing to individuals and families that cannot return to their homes. Preliminary cost impacts from the November 30, 2018 Earthquake (DR-4413) are:

- Individual Assistance Applications Approved: 4,338;
- Total Individuals & Households Program Dollars Approved: $26,554,587.86; and
- Total Public Assistance Grants Dollars Obligated: $9,383,316.49.

The State of Alaska Public Assistance program is designed to help communities, government organizations, and certain non-profits make repairs to utilities, public buildings, roads, bridges, and other critical infrastructure damaged by the declared event. The Borough lists categories for public assistance in Table 7.

Figure 13. Tectonic Plates

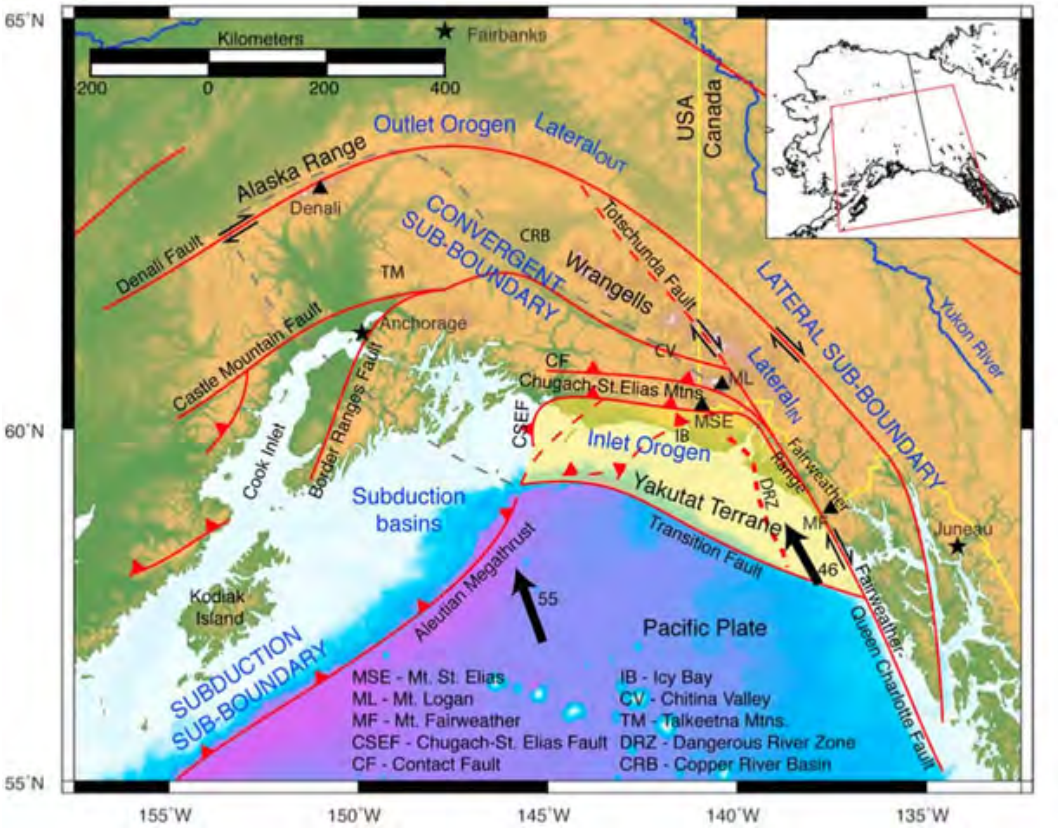
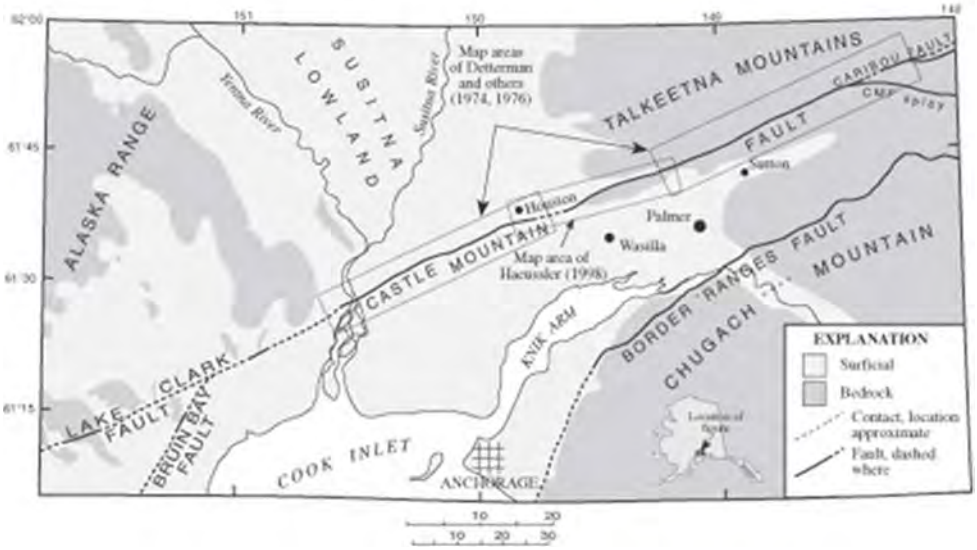


Figure 14. Location of Major Faults in the Houston-Wasilla-Palmer Area



Source: U.S. Geological Survey website

Table 7. Public Assistance for the Borough (170-006F3-00)

Subrecipient	Count of Project #	Estimated Cost
Applicant Signed Project	1	$350,654.00
Obligated	8	$1,291,075.69
Pending CRC Project Development	9	$41,704,813.00
Pending EEI Completion	8	$1,532,421.56
Pending FEMA Insurance / 406 HMP Mitigation Completion	1	$99,917.00
Pending QA Review	1	$90,181.00
Grand Total	**29**	**$45,069,062.25**

Preliminary cost impacts for individual homes within the Borough are included in Table 8.

Table 8. Earthquake Data

Borough 2018 November Cook Inlet Earthquake	
Total Applicants from Borough Before FED DEC:	2794
Total Applicants from Borough Reconsideration:	75
Total of Warrants issued by State to Borough Applicants:	26
Total $ amount awarded to Borough Applicants:	**$323,090.75**

Preliminary cost impacts reported from FEMA are included in Table 9. Not all damaged buildings were reported to the Borough, State, or FEMA, and the unidentified damages are not accounted for.

Shakemaps use recorded and predicted ground motions to show where and how intensely the ground shook during an earthquake—most crucially, they help identify areas of likely damage within minutes of a significant earthquake. Shake maps are color-coded to show how strongly the ground shook in different places. Each color corresponds to a number on the MMI (link or sidebar), which was created to describe an earthquake's severity in a given place. Figures 16-20 are shake maps from five different scenarios. Figure 16 is a fabrication of the 1964 Great Alaska Earthquake using existing infrastructure in the Borough. Figure 17 is the actual shake map generated from the November 30, 2018 Earthquake. Figure 18 is a fabricated scenario meant to show the potential hazard from an earthquake with a magnitude of 7.5 with its epicenter near the Castle Mountain Fault (Figure 14). Figures 19 and 20 are fabricated scenarios meant to show potential hazards from an aftershock with a magnitude of 6.8 if the epicenter was centered in Wasilla or Houston, respectively.

Recurrence Probability

While it is not possible to predict an earthquake, the U.S. Geological Survey (USGS) has developed earthquake probability maps that use the most recent earthquake rate and probability models. These models are derived from earthquake rate, location, and M data as well as from mapping of active faults, from the USGS National Seismic Hazard Mapping Project.

The measure of peak ground acceleration is relative to the acceleration due to gravity (1 g). At 1 g vertical acceleration, objects will be lofted off the ground as it moves down, and then

Table 9. FEMA Individual Assistance Grants to Communities Within the Borough

Borough/ City	Registrations	Total HA	Total ONA	Total IHP	# Max Grant	# Own-ers	# Rent-ers	# Undesig-nated	Major Damage (Renter)	Moderate Damage (Renter)
Big Lake	191	$671,956.83	$10,507.74	$682,464.57	6	183	4	4	0	0
Chickaloon	2	$10,343.45	$1,278.34	$11,621.79	0	2	0	0	0	0
Houston	89	$235,307.18	$8,827.87	$244,135.05	1	82	6	1	0	1
Lakes	6	$3,498.73	$133.02	$3,631.75	0	5	1	0	0	0
Meadow Lake	3	$464.65	$0.00	$464.65	0	3	0	0	0	0
Palmer	576	$1,297,504.11	$20,613.62	$1,318,117.73	11	553	23	0	1	5
Skwenta	1	$6,467.53	$0.00	$6,467.53	0	1	0	0	0	0
Sutton	22	$111,451.78	$2,984.78	$114,436.56	1	20	1	1	0	0
Talkeetna	21	$14,175.08	$266.04	$14,441.12	0	21	0	0	0	0
Trapper Creek	8	$4,433.26	$229.95	$4,663.21	0	7	1	0	0	0
Wasilla	1,650	$2,968,879.00	$81,065.67	$3,049,944.67	18	1,578	63	9	0	8
Willow	102	$361,880.34	$5,591.09	$367,471.43	2	100	1	1	1	0
Matanuska-Susitna	**2,671**	**$ 5,686,361**	**$ 131,498**	**$ 5,817,860**	**39**	**2,555**	**100**	**16**	**2**	**14**

experience twice their own weight when the ground moves up. One g of horizontal acceleration will make flat ground feel as though it is sloped at 45 degrees – steep enough that most things would fall. Figure 21 indicates that the USGS earthquake probability model places the probability of an earthquake in the Borough with a likelihood of experiencing severe shaking (0.30g to 1.80g pga) at a 2% probability in 50 years. A 2% probability in 50 years is the rare, large earthquake, and statistically, it happens on average every 2,500 years.

Based on past history, no area of the Borough is very far removed from the possibility of an earthquake. The probability of future earthquake events is highly likely based on a minimum annual occurrence.

Figure 15. Fault Lines in the Borough

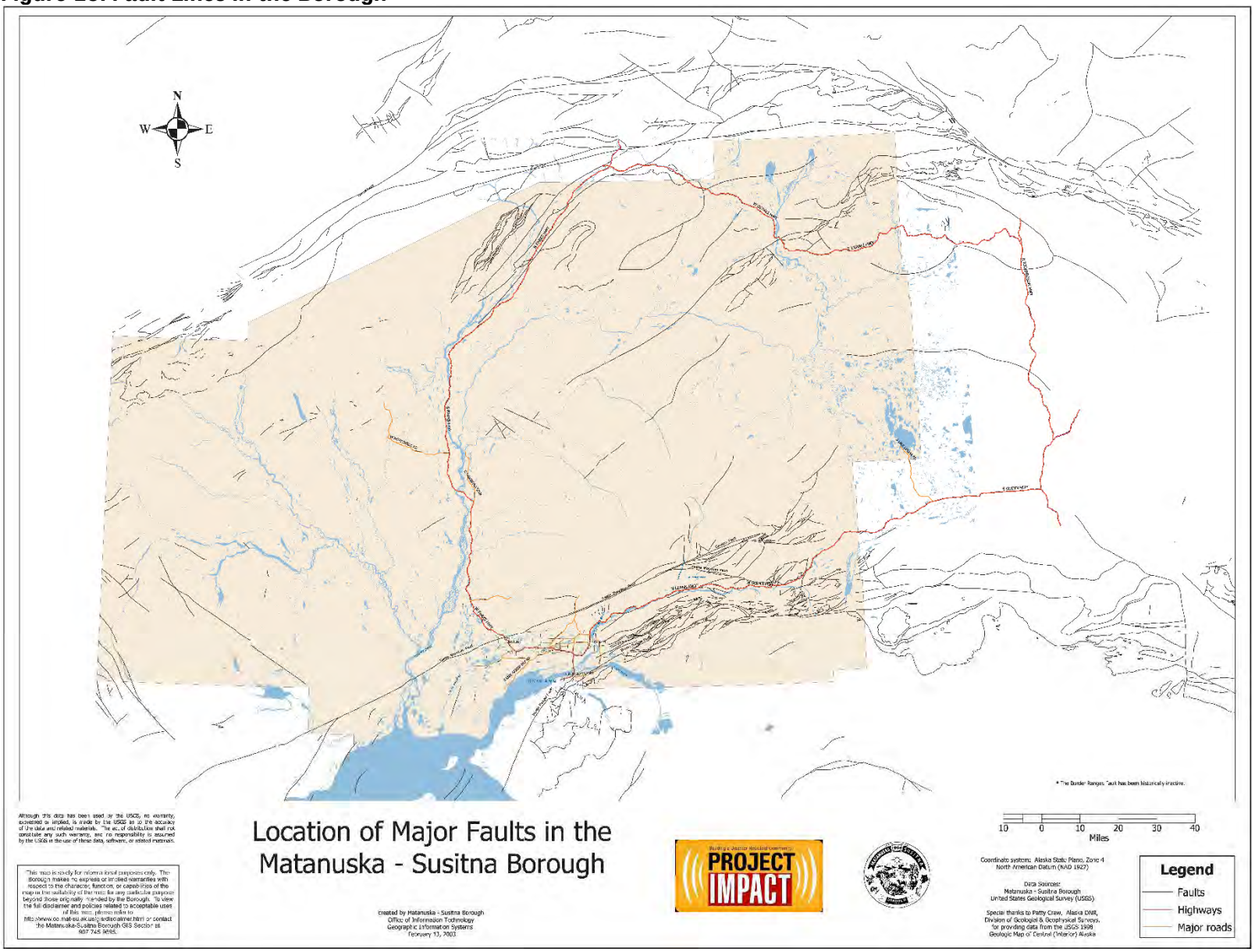


Figure 16. 2019 Shakemap, M9.2 Alaska Mainshock Scenario

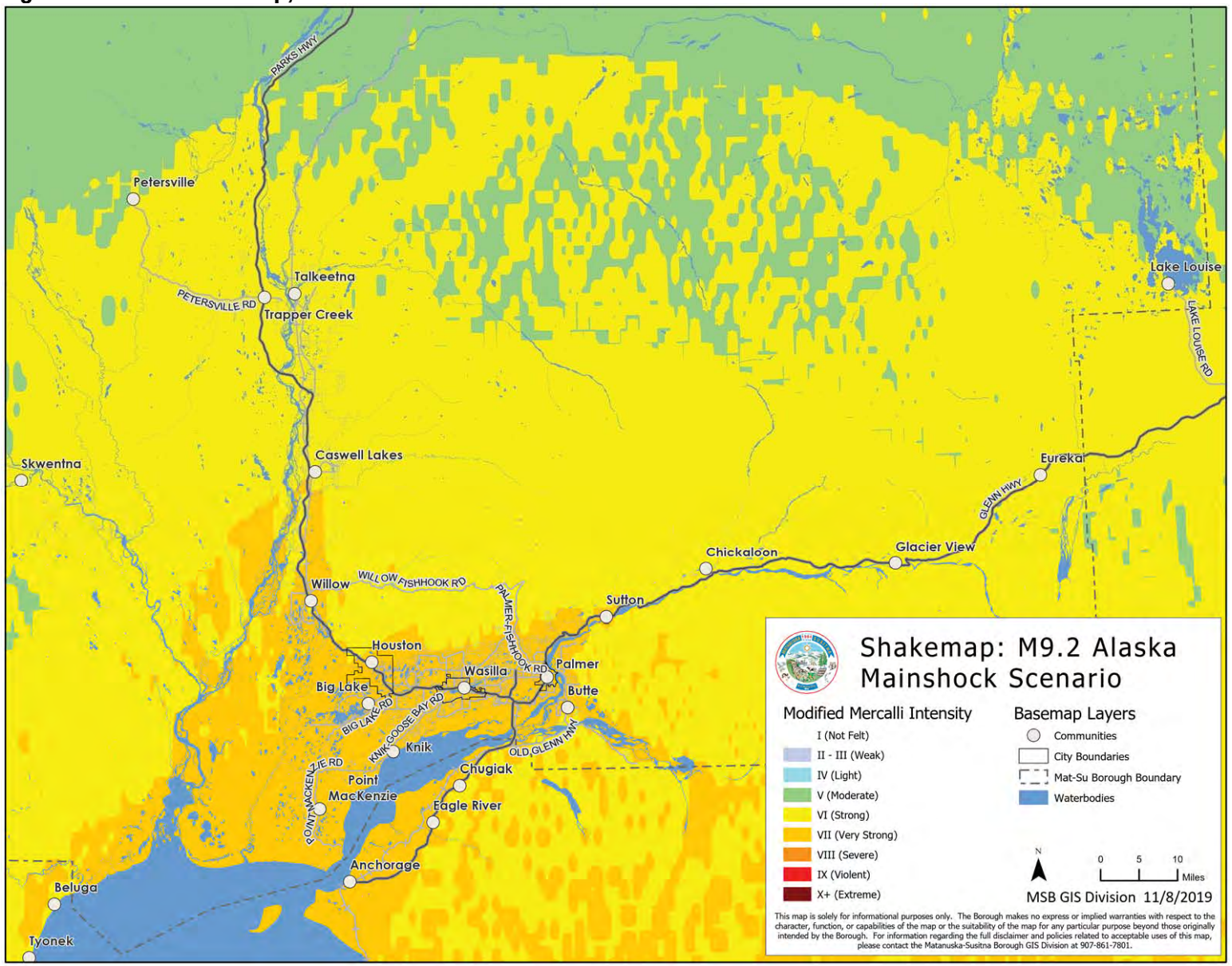


Figure 17. 2019 Shakemap, M7.1 November 30, 2018 Anchorage Earthquake

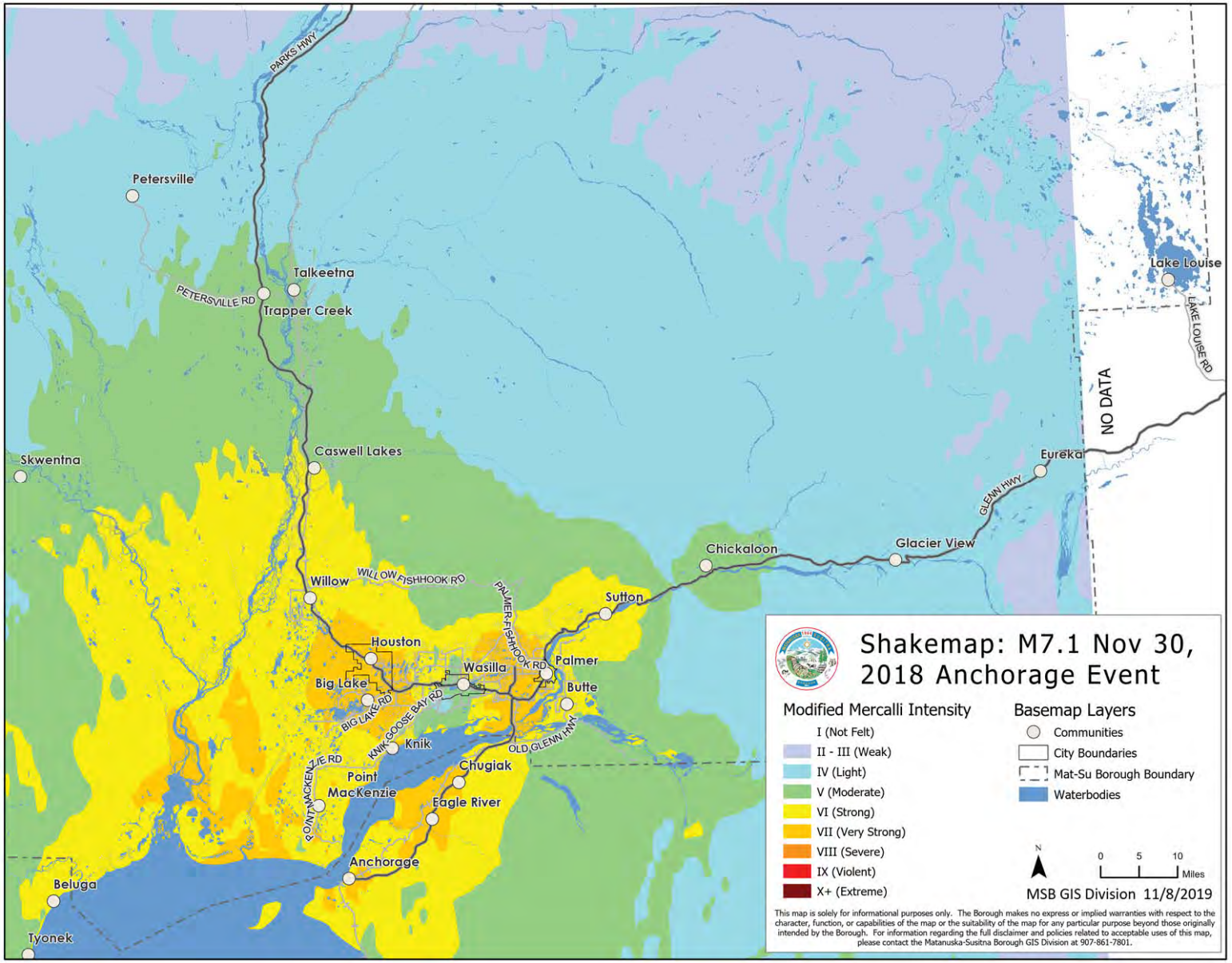


Figure 18. 2019 Shakemap, M7.5 Castle Mountain Fault Scenario

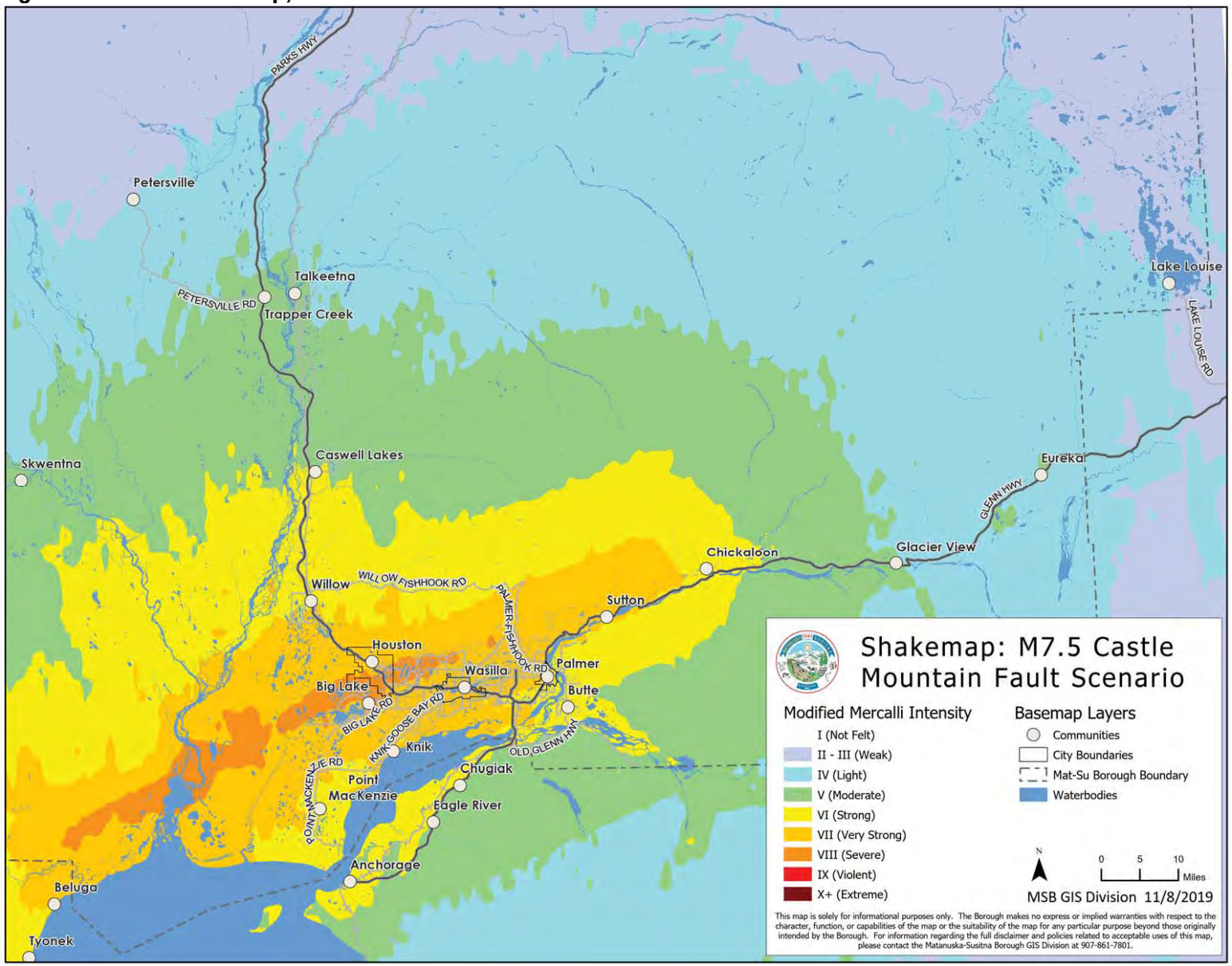


Figure 19. 2019 Shakemap, M6.8 Wasilla Aftershock Scenario

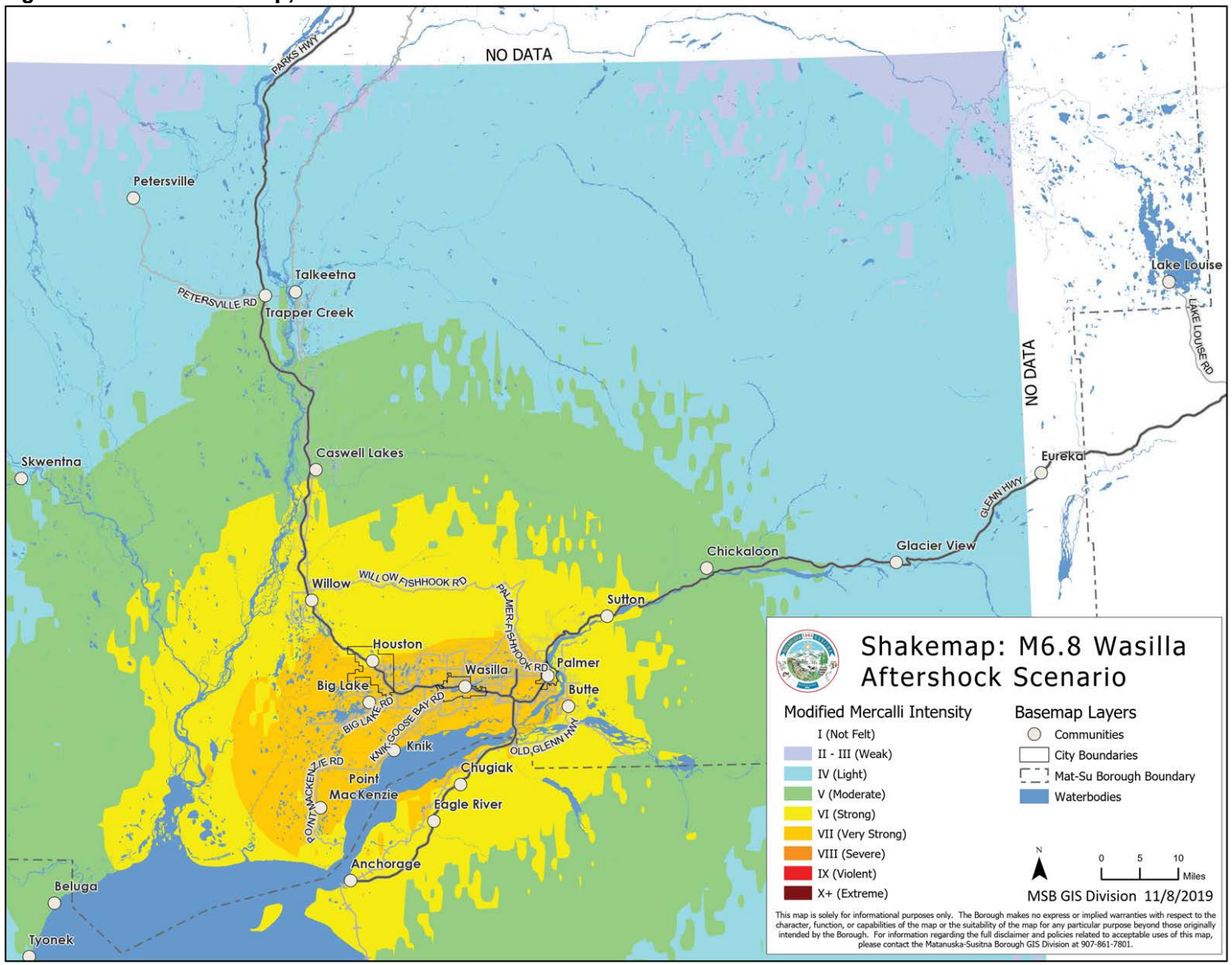


Figure 20. 2019 Shakemap, M6.8 Houston Aftershock Scenario

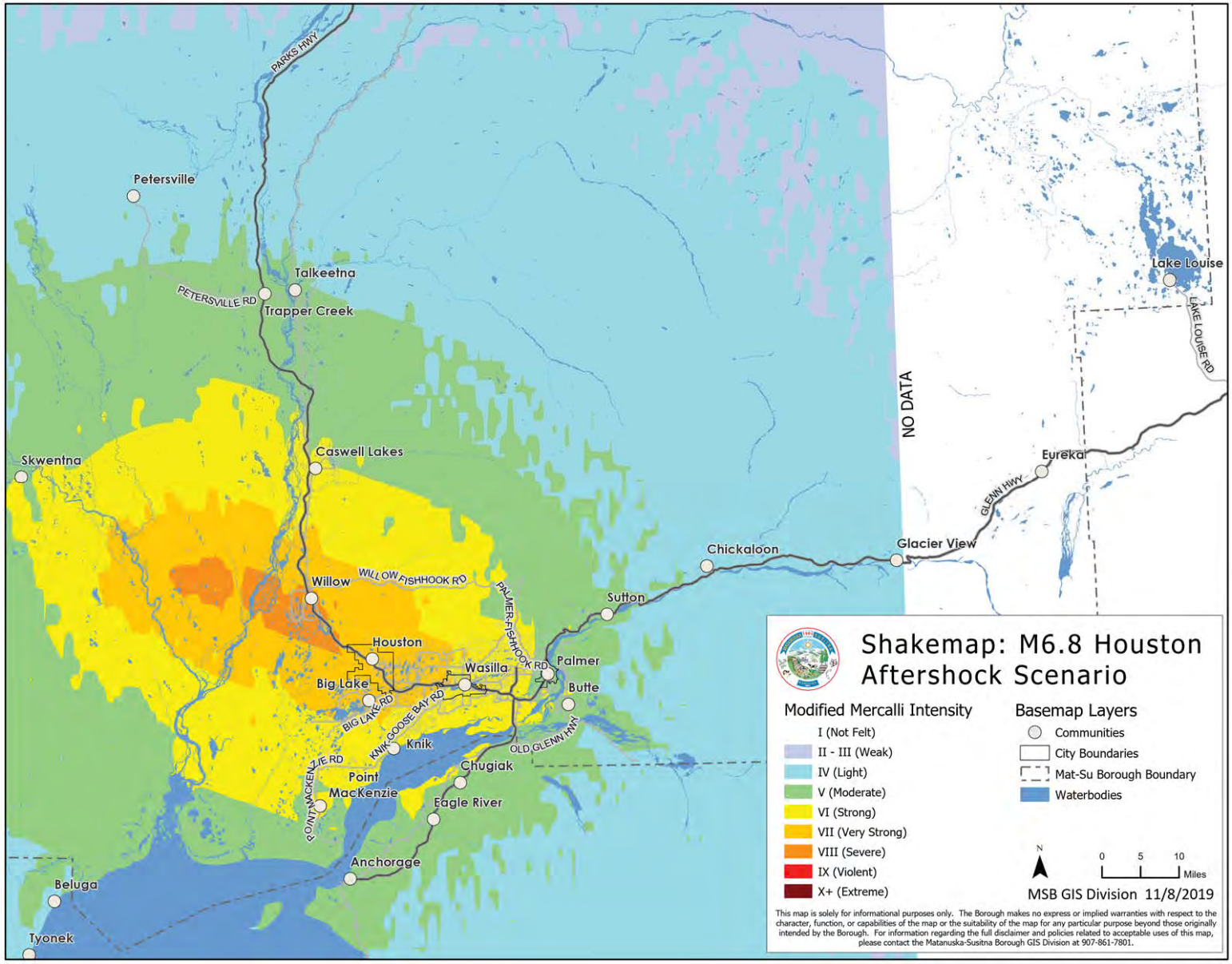
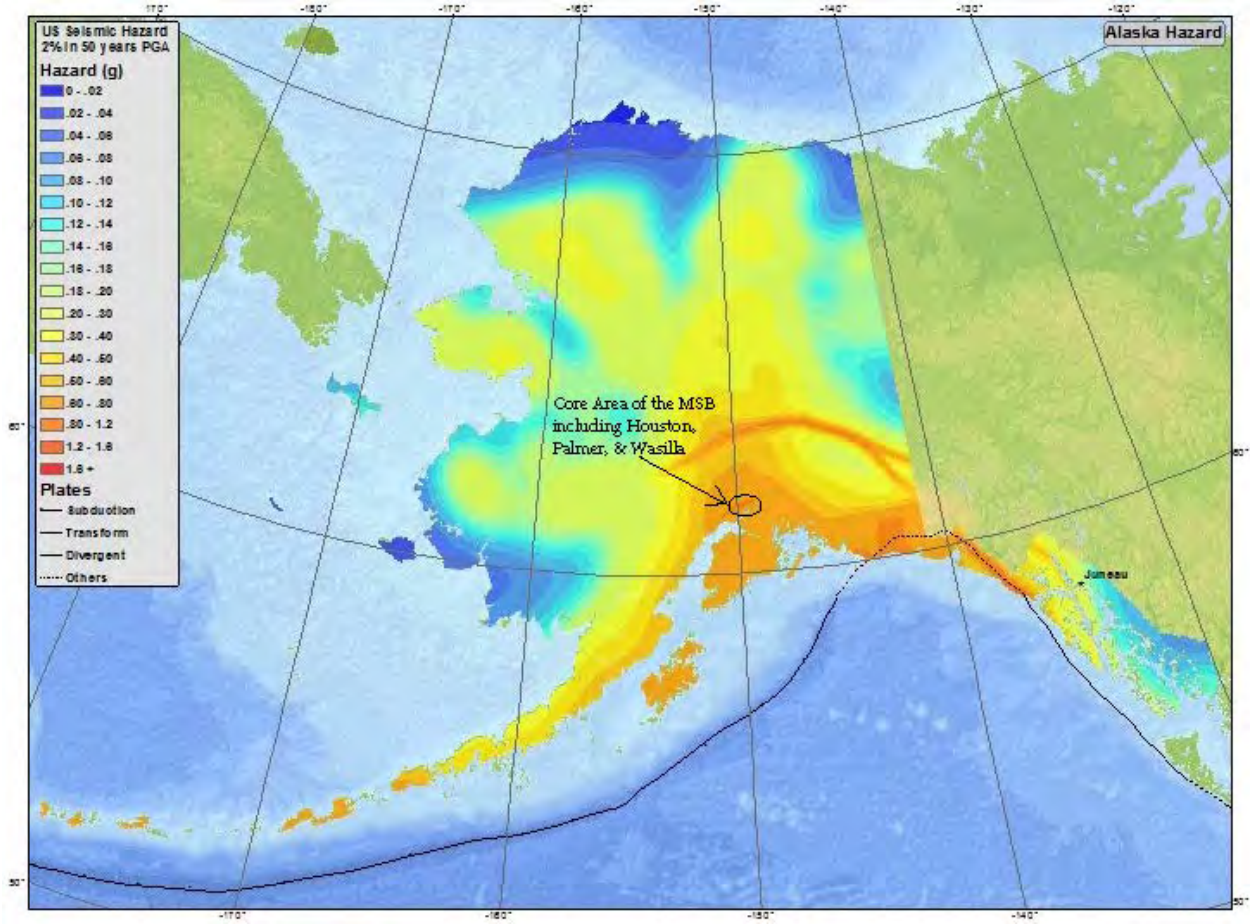


Figure 21. State of Alaska Earthquake Probability



5.3.3 Flood and Erosion

5.3.3.1 Hazard Characteristics

Floods

Flooding is Alaska's most common disaster, often costing in excess of one million dollars annually, causing major disruptions to society and occasionally, loss of life (DHS&EM, 2018a). Many floods are predictable based on rainfall patterns. The Borough experiences the following types of flooding:

Rainfall-runoff flooding is the most common type of flooding in Alaska, typically occurring in late summer through early fall. Rainfall intensity, duration, distribution, as well as pre-existing soil moisture conditions and geomorphic characteristics of the watershed all contribute to the flood's magnitude. These floods result from high rainfall amounts and accompanying high surface runoff rates.

Snowmelt flooding typically occurs from April through June, but is most common in the spring when rapidly warming temperatures quickly melt snow. Snowpack depth, spring weather patterns, and geomorphic characteristics of the watershed influence the magnitude of flooding. Rainfall and high temperatures can exacerbate snowmelt floods.

Ice jam floods occur after an ice jam develops, causing water to rise upstream behind the jam. When the jam releases, the stored water causes downstream flooding. Damage from ice jam floods is usually worse than from rainfall runoff or snowmelt floods because the ice jam floods are usually higher, the water levels change more rapidly, and the ice causes physical damage. Ice jams usually develop where the channel slope decreases, gets shallower, or where constrictions occur such as at bridges, bends in the river, headwaters, and reservoirs. During spring breakup, ice jams commonly dam water along big rivers. This flooding is exacerbated by snowmelt. Significant flooding on the Susitna River and the 2019 Willow Creek flooding were caused by ice jams and snow melt.

Aufeis, also called glaciation or icing, accumulates during winter along stream and river valleys in arctic and subarctic environments. It forms by the upwelling of river water behind ice dams, or by ground-water discharge. The latter mechanism prevails in high-gradient alpine streams as they freeze solid. Ground-water discharge is blocked by ice, disturbing the steady-state condition and causing a small incremental rise in the local water table until discharge occurs along the bank and over the top of the previously formed ice. Successive ice layers can lead to aufeis accumulations that are several meters thick. Aufeis typically melts out during summer and will often form in the same place year after year.

Ground-water flooding occurs when water accumulates and saturates the soil. The water table rises and floods low-lying areas, including homes, septic tanks, and other facilities.

Flash floods are characterized by a rapid rise in water. They are often caused by heavy rain on small stream basins, ice jam formation, or by dam failure. They are usually swift-moving and debris-filled, causing them to be very powerful and destructive.

Fluctuating lake level floods occur when lake inflow is excessive, flooding areas around the lake. Generally, lakes buffer downstream flooding due to the storage capacity of the lake.

Glacial outburst flooding is called a jökulhlaup. They are the result of a sudden release of water from a glacier or glacially-dammed lake, resulting in rivers rapidly rising downstream. This can happen on many Alaskan rivers, including the Susitna River. Sometimes, glacial outburst flooding is predictable, but not always.

To develop flood predictions, the NWS and Borough operate a flood-forecasting network. Predictions are often difficult for many of the smaller rivers because of the short time span between when the precipitation occurs and the flooding starts.

Floods in the Borough can occur as a result of a combination of factors, including heavy snow pack, temperature, sunshine, and precipitation. The sequence of events affects the flooding potential. Spring floods on streams may occur as a result of an above-normal snowfall during the winter followed by an unusually cold spring and a rapid snowmelt. Summer and fall floods usually result from intense precipitation. In addition, an ice jam could occur during winter or spring breakup, causing overbank flooding. Ice jams have caused the highest flooding on Willow Creek, Little Willow Creek, and Talkeetna River, but no frequency has been applied to this type of flood. The Borough monitors streams, creeks, and rivers for ice jam flooding as well as other triggered hot spots, similar to the DHS&EM's River Watch program. The Borough also thaws culverts as needed as part of its routine winter stream maintenance program.

The principle flood problems are natural obstructions such as trees and vegetation along the banks, manmade obstructions such as bridges and boat docks, ice jams, accumulation of brush and debris along and within the bed which can be carried downstream by high water and block bridge openings or other constrictions, and inadequately-sized culverts.

Erosion

Erosion is the action of surface processes (such as water) that remove soil, rock, or dissolved material from one location and transport it to another location. Erosion can be gradual or occur quite quickly as the result of a flash flood, storm, or other event. Most of the geomorphic change to a river system is due to peak flow events that can dramatically increase the erosion rate. Erosion is a problem in developed areas where disappearing land threatens development and infrastructure (DHS&EM, 2018a). Erosion rarely causes death or injury. However, erosion causes the destruction of property, development, and infrastructure.

Erosion is a process that involves the gradual wearing away, transportation, and movement of land. However, not all erosion is gradual. It can occur quite quickly as the result of a flash flood, coastal storm, or other event. Most of the geomorphic change that occurs in a river system is in response to a peak flow event. Erosion is a natural process, but its effects can be exacerbated by human activity. Erosion is a concern in developed areas. The disappearing land threatens development and infrastructure. There are two main types of erosion that affect human activity in the Borough:

- Riverine erosion; and
- Wind erosion.

Riverine erosion results from the force of flowing water into and adjacent to river channels. This erosion affects the bed and banks of the channel and can alter or preclude any channel navigation or riverbank development. In less-stable, braided channel breaches, erosion and deposition of materials are a constant issue. In more stable, meandering channels, episodes of erosion may occur occasionally. Examples of riverine erosion that threaten both public and private property are found in the Borough. Riverine erosion on the meandering Matanuska River, near Palmer has threatened the stability of several houses and some infrastructure. This braided river system has cut a wide channel that has altered course several times since the first mapped channels in 1906. A dramatic shift occurred in the 1950s. Efforts to control the river, from sacrificial boulder dikes to deepening the center channel by excavating the gravel, have met with limited and short-lived success. In 1992, 1994, and 2012, several homes went over the banks of the river due to active erosion.

Riverine erosion risk is predominantly along the Matanuska River in the communities of Butte, Chickaloon, Palmer, and Sutton. While flooding along the river corridor is somewhat rare, high-water events have resulted in significant negative effects from erosion. The braided glacial river moves back and forth across a wide braided plain, exposing each river bank to occasional prolonged periods of erosion. The river shifted in channel migration direction in the early 1990s, when the main channel migrated to the left bank of the river, resulting in major loss of homes and land.

Development along the Matanuska River has occurred without much knowledge of or consideration to river channel migration. As a result, homes have been destroyed, agricultural land lost, infrastructure damaged, and tax base lost as the river has shifted back and forth across its plain. There are no existing regulations for development based on riverine erosion, and such development in threatened areas is continuing. These types of development are regulated by requiring setbacks of 75 feet from the new structure to the ordinary high-water mark of a waterbody.

Wind erosion occurs when wind is responsible for the removal, movement, and redepositing of land. It occurs when soils are exposed to high-velocity wind. Wind will pick up the soil and carry it away. Wind erosion can cause a loss of topsoil, which can hinder agricultural production. Loess, deposits of silt laid down by wind action, can reduce visibility, cause automobile accidents, hinder machinery, and have a negative effect on air and water quality, creating animal and human health concerns. Wind erosion also causes damage to public utilities and infrastructure.

Wind erosion is a significant problem for the Matanuska Valley with gusts of up to 100 mph. Dust from the Matanuska and Knik river drainage systems can cause dust storms that greatly exceed national health-based standards. Sources of particulate come from river drainages, volcanoes (ashfall), wildfires (ash), burned-over areas (wildfires), gravel pits, agricultural plowing, road sanding, wood stoves, open burning, unpaved roads, and bare soil/erosion. April thru June and August are the months most prevalent to dust storms.

5.3.3.2 Climate Factors

Climate and weather are the two primary drivers of flooding and erosion in Alaska. Weather (i.e., the day-to-day state of the atmosphere) affects these hazards in the short-term with individual episodes of rainfall, wind, and temperature that initiate or intensify individual episodes of flooding or erosion. Climate affects the long-term incident rate and severity of these hazards, especially in Alaska, which is particularly vulnerable due to its high northern latitude and the unique importance of snow, ice, and permafrost.

5.3.3.3 Flood and Erosion History

The Borough has a history of flood and erosion events described in the DHS&EM *Disaster Cost Index* (DHS&EM, 2018b). These events are listed below. The numbers are references to the way the State tracked various disaster events over the years.

7. Willow Creek, December 20, 1979: Abnormal weather conditions, caused by a combination of extreme debris jams, abnormal temperature variations, and glaciation-caused flooding of Willow Creek in the **Matanuska-Susitna Borough**, rendering roads in the area impassable and threatening homes.

56. Southcentral Alaska Flood (Major Disaster), October 12, 1986, FEMA-declared (DR-0782) on October 27, 1986: Record rainfall in Southcentral Alaska caused widespread flooding in Seward, **Matanuska-Susitna Borough**, and Cordova. The President declared a major disaster implementing all public and individual assistance programs, including Small Business Association (SBA) disaster loans and disaster unemployment insurance benefits. Flooding was particularly severe in the Seward area of the Kenai Peninsula and in tributaries to the Susitna

River from Talkeetna downstream. Flood damage was estimated at $20 million, and the region was declared a Federal disaster area.

144. Mat-Su Borough, July 18, 1991: Severe bank erosion near the Circle View Subdivision area along the Matanuska River destroyed one home and threatened several others, causing the **Mat-Su Borough** to support either construction of emergency bank protection measures or relocation of homes. The Governor's Declaration authorized a loan of up to $500,000 dollars to the **Mat-Su Borough**. The following year, the legislature converted this loan to a grant.

172. Matanuska River Erosion: On July 1, 1994, **Matanuska-Susitna Borough** sustained serious damage and threats to life and property resulting from erosion of the Matanuska River, in the vicinity of Circle View Estates. As a result of this disaster, authority was granted under Alaska Statutes, Section 26.23.020 to loan $500,000.00 from the Disaster Relief Fund to the **Matanuska-Susitna Borough**.

FEMA-declared DR-1072 on October 13, 1995: On September 21, 1995, the Governor declared a disaster as a result of heavy rainfall in Southcentral Alaska, and as a result, the Kenai Peninsula Borough, **Matanuska-Susitna Borough**, and the Municipality of Anchorage were initially affected. On September 29, 1995, the Governor amended the original declaration to include Chugach and the Copper River Rural Educational Attendance Areas (REAAs), including the communities of Whittier and Cordova, and the Richardson, Copper River and Edgerton Highway areas which suffered severe damage to numerous personal residences, flooding, eroding of public roadways, destruction and significant damage to bridges, flood control dikes and levees, water and sewer facilities, power and harbor facilities. On October 13, 1995, the President declared this event as a major disaster (AK-1072-DR) under the Robert T. Stafford Disaster Relief and Emergency Assistance Act. Individual Assistance totaled $699K for 190 applicants. Public Assistance totaled $7.97 million for 21 applicants with 140 DSRs. Hazard Mitigation totaled $1.2 million. The total for this disaster was $10.5 million.

The 77-foot span of Hunter Creek Bridge on Knik River Road slumped into Hunter Creek, leaving 36 people and their animals stranded on the far end of the dead-end road, about 10 miles southeast of Palmer. The National Guarded helped evacuate 27 people to the other side of the Knik River using helicopters. The creek, usually narrow enough to throw rocks over, carved a 150-foot wide swath down the hillside on its way to the Knik River just downstream. "You could hear boulders crashing into the pillars and see the trees piling against them." The area was one of several places throughout Southcentral Alaska hampered by heavy rain for the next few days. More than 2.5 inches of rain fell in Palmer and much more fell in the mountains nearby. Several other areas flooded, including the Susitna Valley settlement of Skwentna where some residents took refuge in the post office and roadhouse. In addition, the Old Glenn Highway was closed after the Knik River sent more than three feet of water cascading over it just past the Old Knik River Bridge (ADN, 1995).

07-220 2006 August Southcentral Flooding (AK-07-220) declared August 29,2006 by Governor Murkowski, then FEMA-declared (DR-1663) on October 16, 2006: Beginning on August 18 and continuing through August 24, 2006, a strong weather system caused severe flooding, resulting in severe damage and threats to life and property, in the Southcentral part

of the State including the **Matanuska-Susitna Borough**, the City of Cordova and the Copper River Highway area in the Chugach REAA, the Richardson Highway area in the Copper River REAA and Delta/Greely REAA, the Denali Highway area, and **Alaska Railroad and Parks Highway areas in the Matanuska-Susitna Borough,** and the Denali Borough. The Little Susitna River flooded its banks north of the communities of Wasilla and Meadow Lakes. Concurrently, the Talkeetna River overflowed its banks in the downtown and surrounding areas of Talkeetna. Willow Creek in the community of Willow also overflowed. Governor Murkowski signed a state disaster declaration bringing recovery resources to several homeowners who were severely impacted and enabling washed-out roads and bridges to be rebuilt. Damage cost estimates were near $21 million in Public Assistance, primarily for damage to roads, bridges, and rail lines. Individual Assistance estimates were near $2 million.

12-240, 2012 September Storm declared by Governor Parnell on October 17, 2012, then FEMA-declared November 27, 2012 (DR-4094): Beginning on September 4, 2012, a strong weather system produced high winds and heavy rains, resulting in severe and widespread wind damage and flooding throughout much of Southcentral and Interior Alaska. The series of storms created a threat to life and property in the **Matanuska-Susitna Borough,** Kenai Peninsula Borough, Alaska Gateway REAA, and the Chugach area. The magnitude of the storm resulted in wind damages and flooding which necessitated debris clearance, emergency protective measures, damage to public facilities including roads, bridges, railroad, electrical distribution and water systems, and damage to private residences. A large number of roads and bridges were affected; damage to the Alaska Railroad was severe enough to shut down the rail service for several days. Approximately 823 properties suffered damage from flooding and erosion; almost 60 homes were either severely damaged or destroyed; traffic on 60 roads was disrupted, and 40 of those roads were closed. Most of the damage occurred along the Little Susitna River and Willow Creek. As a result of the raging rivers, the Talkeetna dike/revetment was damaged, part of the Shirley Towne Bridge was washed away, and the approach to Yoder Bridge was washed out. Super-saturated ground and elevated water tables caused additional flooding of homes and septic systems, damaging property and road beds outside of typical "flood-prone" areas. State estimates of damage to individual property approached $3.5 million, public infrastructure exceeded $19 million statewide, and the military base in Anchorage sustained an additional $3.5 million in flood damages. There was one fatality associated with the flooding.

16-258, 2016 Mat-Su River Erosion declared by Governor Walker on August 22, 2016: During the week of August 14 through 20, 2016, there was imminent threat of flooding in the **Matanuska-Susitna Borough** along the Old Glenn Highway from Mile 12 through Mile 15. Flooding in this area had the potential to cause substantial damage to the highway, infrastructure, and local homes. The ADOT&PF was immediately called to accomplish necessary emergency protective measures to prevent flooding of public and private infrastructure.

2018 Damage to the Alaska Railroad declared June 28, 2018 by Governor Walker, then FEMA-declared (DR-4391) on September 5, 2018: Ice jams formed along the Susitna River during spring breakup, which resulted in flooding along the river northeast of Talkeetna during May 11-

13, 2018. Workers with the Alaska Railroad Corporation discovered a five-mile section of track flooded and covered with chunks of ice after an ice jam caused an eight- to ten-foot vertical water level rise between Talkeetna and Curry, on the Susitna River. Significant sections of track were damaged and moved horizontally by as much as 25 feet. At the same time, significant areas of erosion/damage to the railroad bed itself also occurred which had to be rebuilt. Rail service was disrupted for several days. The total Public Assistance cost estimate was $2,011,378.

Events of concern that occurred in Borough history, but weren't recorded in DHS&EM's *Disaster Cost Index* are listed in Table 10.

Table 10. Historical Flood Events that were not Identified by DHS&EM's Disaster Cost Index

Day	Event
July 22, 1981	A torrential rainstorm resulted in widespread flooding, stream over flow and damage to bridges and culverts in Southcentral Alaska. This condition made travel hazardous throughout the region, and in some cases, roads were impassable to all traffic, including emergency vehicles. The Governor's Proclamation of a Disaster Emergency enabled DES to provide the affected communities with immediate recovery assistance, resulting in the restoration of the area's transportation system. No direct assistance was provided to individuals and families.
January 28, 1989	To mitigate the threat of flooding to homes and the Glenn Highway from the Matanuska River, funds were applied toward construction of an earthen/gravel dike.
April 14, 1990	The major Disaster Declaration by the President in response to statewide flooding in the Spring of 1989 authorized the commitment of federal funds to projects designed to mitigate flood damage in future years. Since the federal funding required a State matching share, the Governor declared a disaster to provide these funds and authorize their expenditure.
May 8, 2002	A "flash flood" caused by breaking ice dams developed Tuesday morning along a small portion of the Matanuska River. In the Richie subdivision, Mile 64 of the Glenn Highway, one resident reported that his family lost thousands of dollars in personal property stored outside under fabric shelters. Other residents said that this breakup was the most dramatic since at least 1980.
May 15, 2002	Ice jammed the Talkeetna River just upstream from the Susitna River confluence. This caused localized flooding which washed out some sections of the ballast and shoved the track out of alignment. According to Alaska Railroad personnel, "This was the railroad's most significant damage due to flooding in more than a decade." Rail traffic was suspended between Anchorage and Fairbanks during the flood event for nearly two days. Two passenger trains were canceled, including the first run of the season for the "Denali Star".
August 13, 2002	Newspaper reports indicated a flash flood along portions of McRoberts Creek. Reference was made to "...apparently a landslide coming down the shallow gorge that channels the creek..." and also to "...heavy rains...". Apparently, a dozen homes were indirectly impacted. Little verification data was available to assess the situation.
May 3, 2009	An ice jam created flooding along the Susitna River in Talkeetna. Flooding destroyed part of the Alaska Railroad tracks in the area by large chunks of ice. Flooding was caused by snow melt and river ice jams due to rapid

	spring warming combined with excessive snow pack and river ice thickness.
July – August 2012	The main channel of the Matanuska River moved within its braided plain. This natural event combined with a record high snowfall and resulted in severe erosion from Sutton to Palmer. Properties along the Glenn Highway at approximately Milepost 65 lost acres of ground, a septic system, personal property and structures, and even a historic home to the fast-moving river. In addition, two properties around Milepost 15 of the Old Glenn Highway suffered extreme erosion, loss of outbuildings, and ultimately had to be abandoned by the property owners.
July 10-12, 2018	A deep, anomalously strong upper level trough and associated surface low dug southward across Western Alaska. As a result, nearly the entire atmosphere across Southern Alaska shifted to southwesterly flow, which brought copious amounts of Pacific moisture into Southern Alaska. This rainfall combined with already high-water levels due to snowmelt from anomalously warm temperatures earlier in the month. The Yentna and Skwentna Rivers, already high due to snowmelt, were expected to reach near bank full during the second week of July as the weather pattern turned wetter. On July 10th, a local lodge near the confluence of the Yentna River and Lake Creek reported flooding in cabins and outbuildings, resulting in 18 inches of water getting inside. A Flood Advisory was issued as a result of this report. Later that same day, an update from Lake Creek was received saying that the river had risen to 2-3 feet above the bank and that most of the property, including numerous waterfront lodges, were flooded.
August 14-15, 2018	An upper level low digging southward across Southwest Alaska, brought moist flow off the Gulf into Southcentral on southeasterly winds. This brought higher than normal rainfall to the northern and western Susitna Valley. The river gauge on the Yentna River at Lake Creek went into minor flood stage for a brief period on August 14th. McDougall's Lodge Cabins were evacuated due to flooding water.
December 21, 2019	An ice jam caused Willow Creek to flood, prompting at least 12 households in Willow to evacuate. Six homes were damaged by floodwaters (one homeowner stood in knee-deep water); six homeowners received substantial damage letters from the Borough in May 2020. Deneki Bridge was impassable to vehicle traffic until the situation stabilized, trapping people on the wrong side of the water. Fishhook Road and areas west of the bridge were also impacted. On December 23, 2019, the Borough Mayor and Borough Manager declared a Local Disaster Emergency and requested that the Governor declare a Disaster Emergency and provide State Assistance to the Borough in its response and recovery from this event.

Source: NWS, 2019

5.3.3.4 Location, Extent, Impact, and Recurrence Probability

Location

Looking at a map of the Borough, it is immediately evident that due to the large number of rivers, streams and lakes, the predominant hazard is flooding. As throughout the rest of Alaska, there are so many lakes and streams that not all of them are formally named.

Increasing the accuracy of flood mapping is an important first step in flood mitigation. The Borough Code Title 17: Zoning, Chapter 17.29 sets forth general standards for flood hazard reduction. Code Compliance Officers are charged with enforcing the code. Flood Insurance Rate Maps (FIRMS) were newly revised on September 27, 2019.

Certain areas have been identified as particularly susceptible to flooding. These are shown on FIRM panels published in 2019. The Planning Department is now using Light Detection and Ranging Software (LiDAR) as a valuable tool for managing Special Flood Hazard Areas. The flood insurance study and the FIRMs are on file at the Permit Center. Additionally, the Borough Planning and Land Use Department has gone to great lengths to identify, record, map, and obtain flood plain development permit applications for all flood plain development that has occurred since 1985.

Figures 22, 23, and 24 show the impacts of the land that is eroding adjacent to the Matanuska River. Erosion is primarily affecting two areas in the Borough. Figure 22 shows an overview of both areas. Figure 23 shows the Sutton area where HMGP projects occurred in 2018. Figure 24 shows the Butte area where HMGP projects are occurring. The Borough received a FEMA grant to acquire up to 15 properties that were impacted by erosion of the Matanuska River. This grant was available to homeowners that voluntarily participated, and a total of eight homeowners participated. Two homes in the Sutton area were acquired and demolished in 2018 and 2019, and the land has been deeded to remain as open space in perpetuity. Six homes in the Butte area have been acquired. Demolition of the homes was interrupted by COVID-19 in 2020. These six homes will be demolished as soon as possible with the land deeded to remain as open space in perpetuity.

Another area of flooding concern is an alluvial fan, outside of the Borough's mapped "Special Flood Hazard Area". The area is Hunter Creek and is located at Mile 9.6 on the Knik River Road. The 77-foot span of the Hunter Creek Bridge slumped into the creek in September 1995 (refer to DR-1072 on October 13, 1995 in Section 5.3.3.3 for information). The Cedars Subdivision platting was finalized in 2014, and single-family residential development is ongoing in this area. Figures 25 and 26 illustrate the alluvial fan.

Alluvial fan flooding is characterized by a sudden torrent of water capable of carrying rocks, mud, and debris that debouches from valleys and canyons and spreads over the fan surface. Fan flood flows are characterized by surging, erosion, scour, channel avulsion, mud and debris flows, and sheet flows on the lower portions of the fan surface.

The Alaska Department of Fish and Game (DF&G) Fish Passage Assessment Program was created in 2000 and charged with assessing state-owned road crossings for impacts to fish passage. Since that time DF&G has also assessed crossings on Borough, municipality, private, and federal roads and on the Alaska Railroad. Salmon and other fish move throughout the watershed year-round, and unobstructed access to habitat is critical to helping maintain a healthy fish population. Properly-designed bridges and culverts have little or no adverse effect on fish, aquatic organisms, and other riverine animals, but when culverts are too small, too steep, or incorrectly-placed relative to the natural stream, they impede both up- and downstream fish movement. This program has been continued, and more information on the

Figure 22. 2018 Hazard Mitigation Grant Program - Butte & Sutton Acquisition Areas

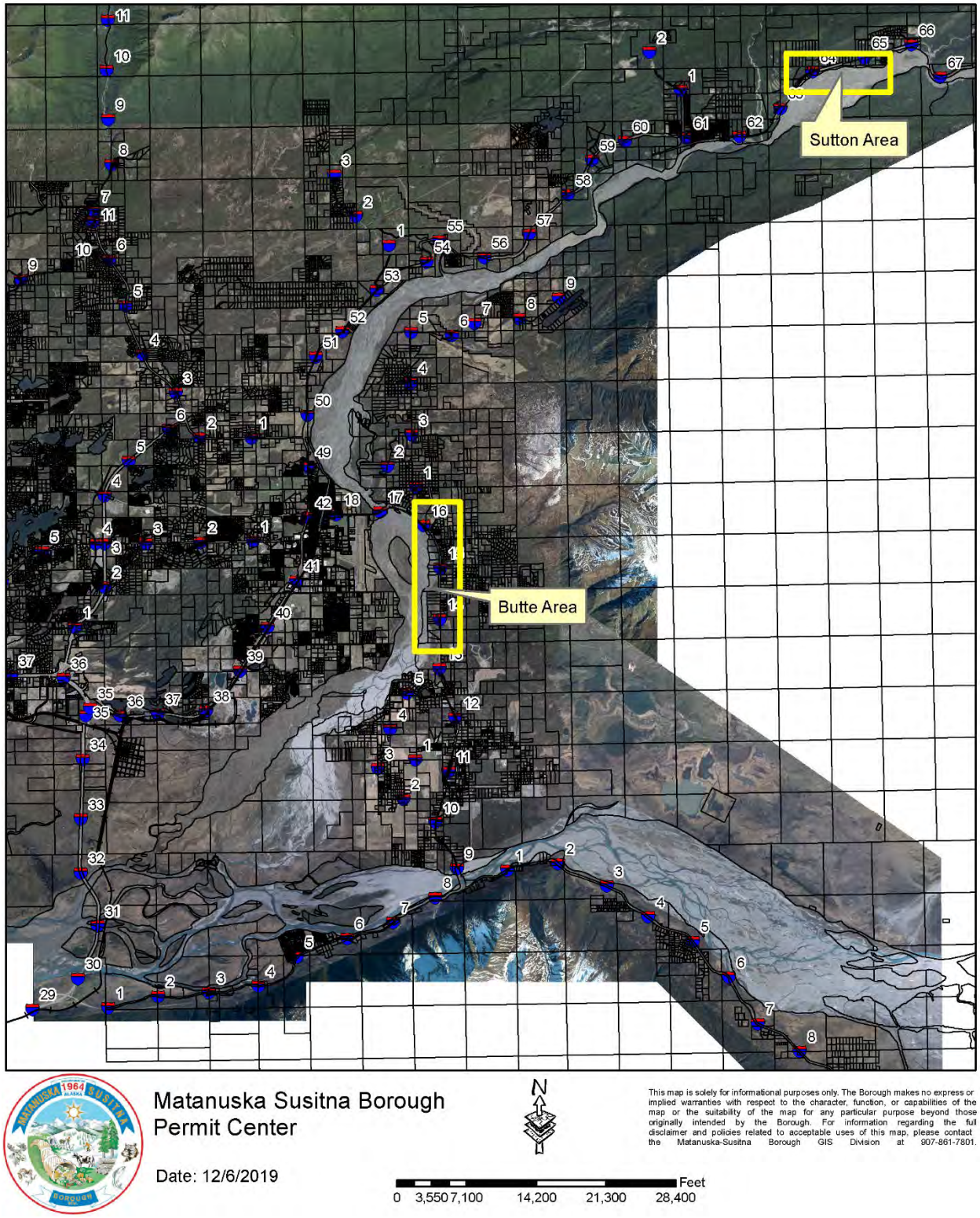


Figure 23. 2018 Hazard Mitigation Grant Program - Sutton Acquisitions

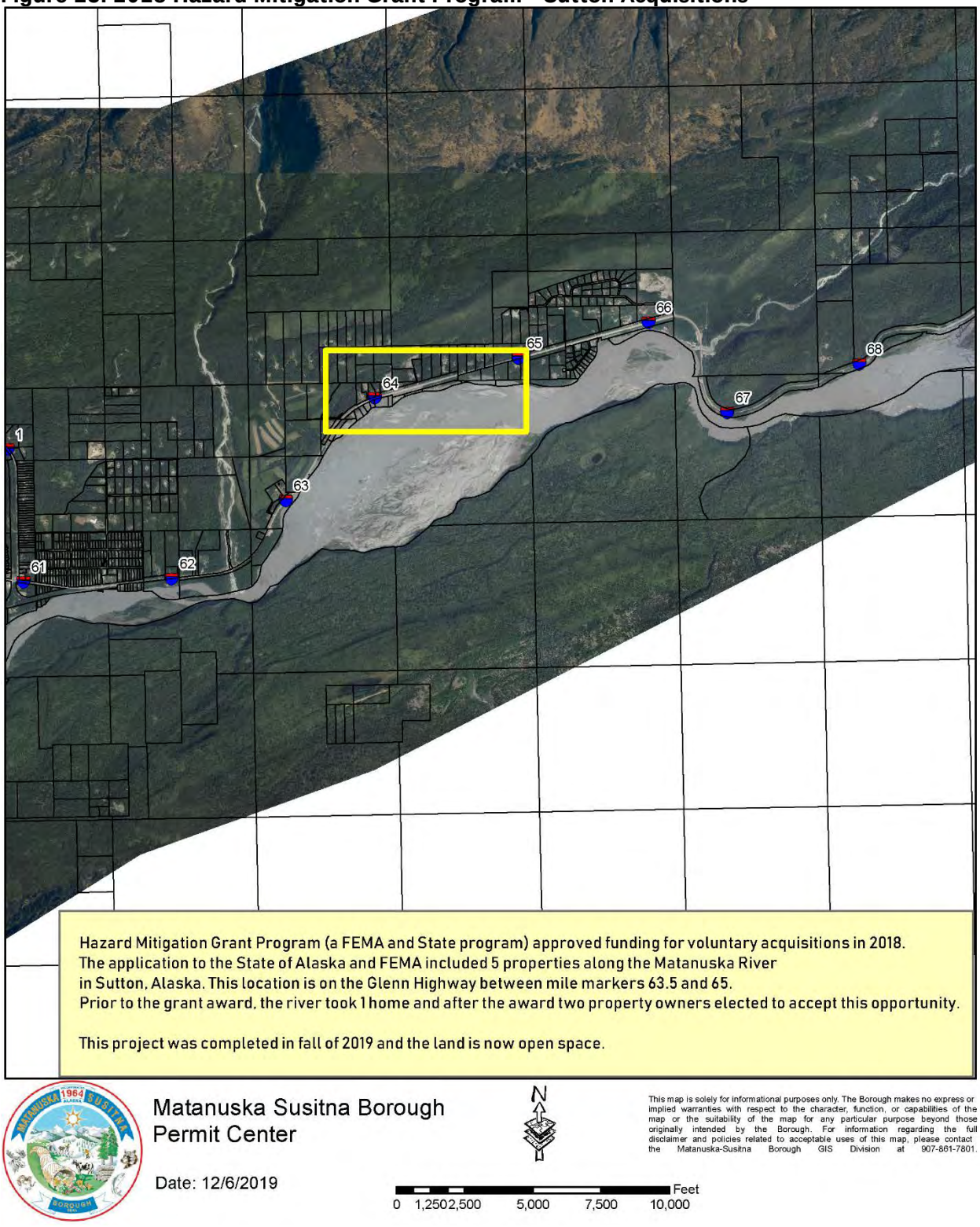


Figure 24. 2018 Hazard Mitigation Grant Program - Butte Acquisitions

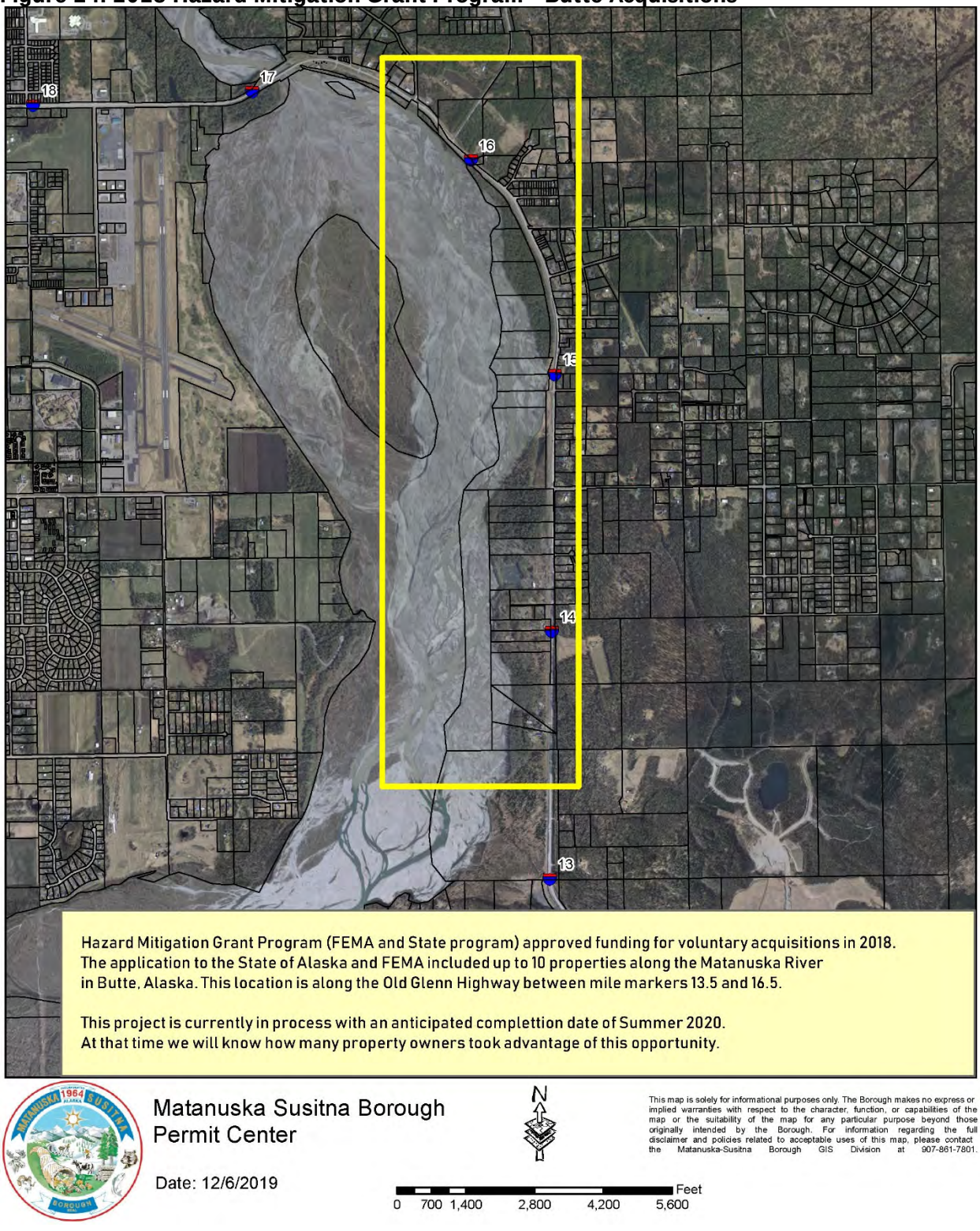


Figure 25. The Cedars Subdivision - Hunter Creek approximately Mile 9.5 Knik River Road

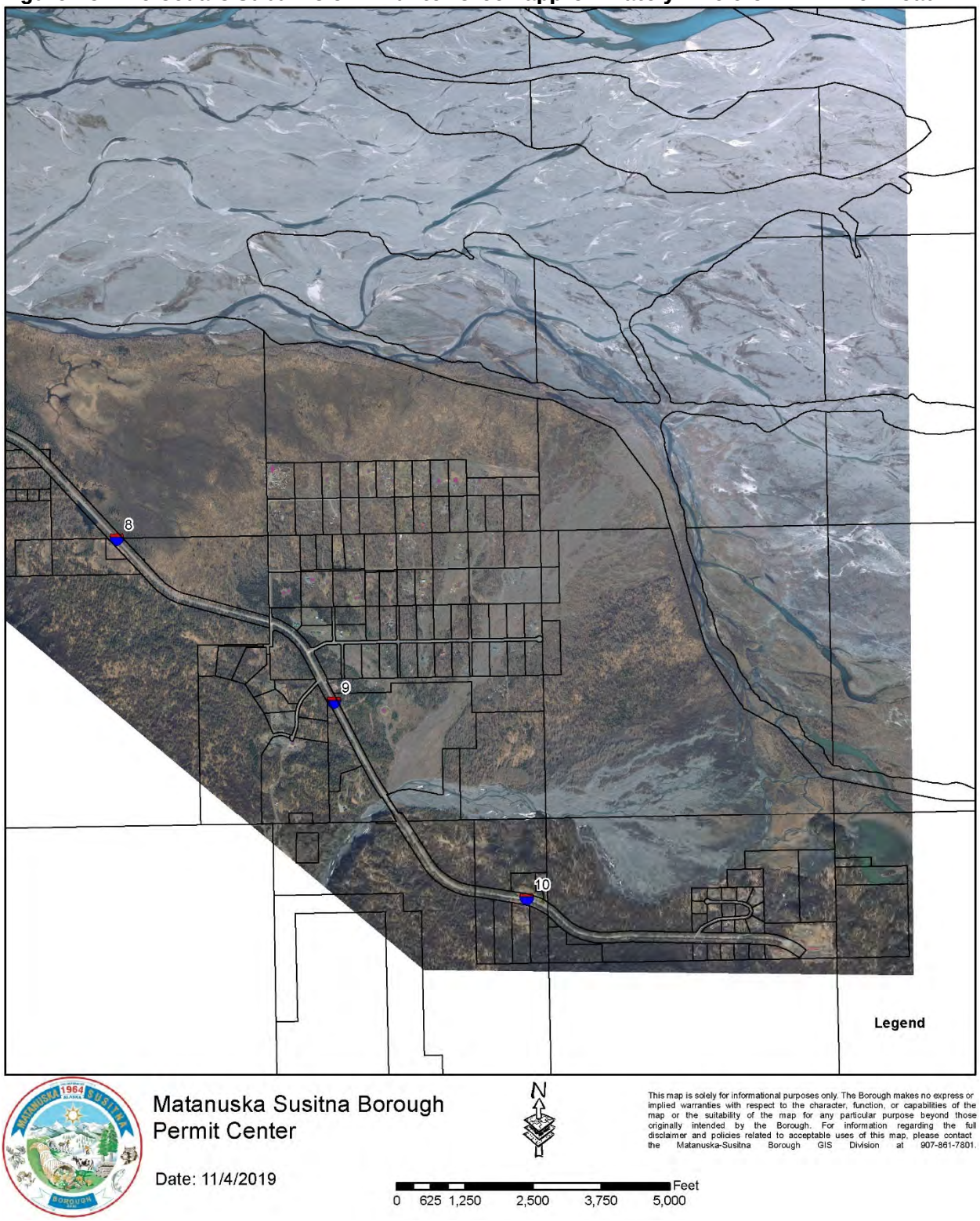
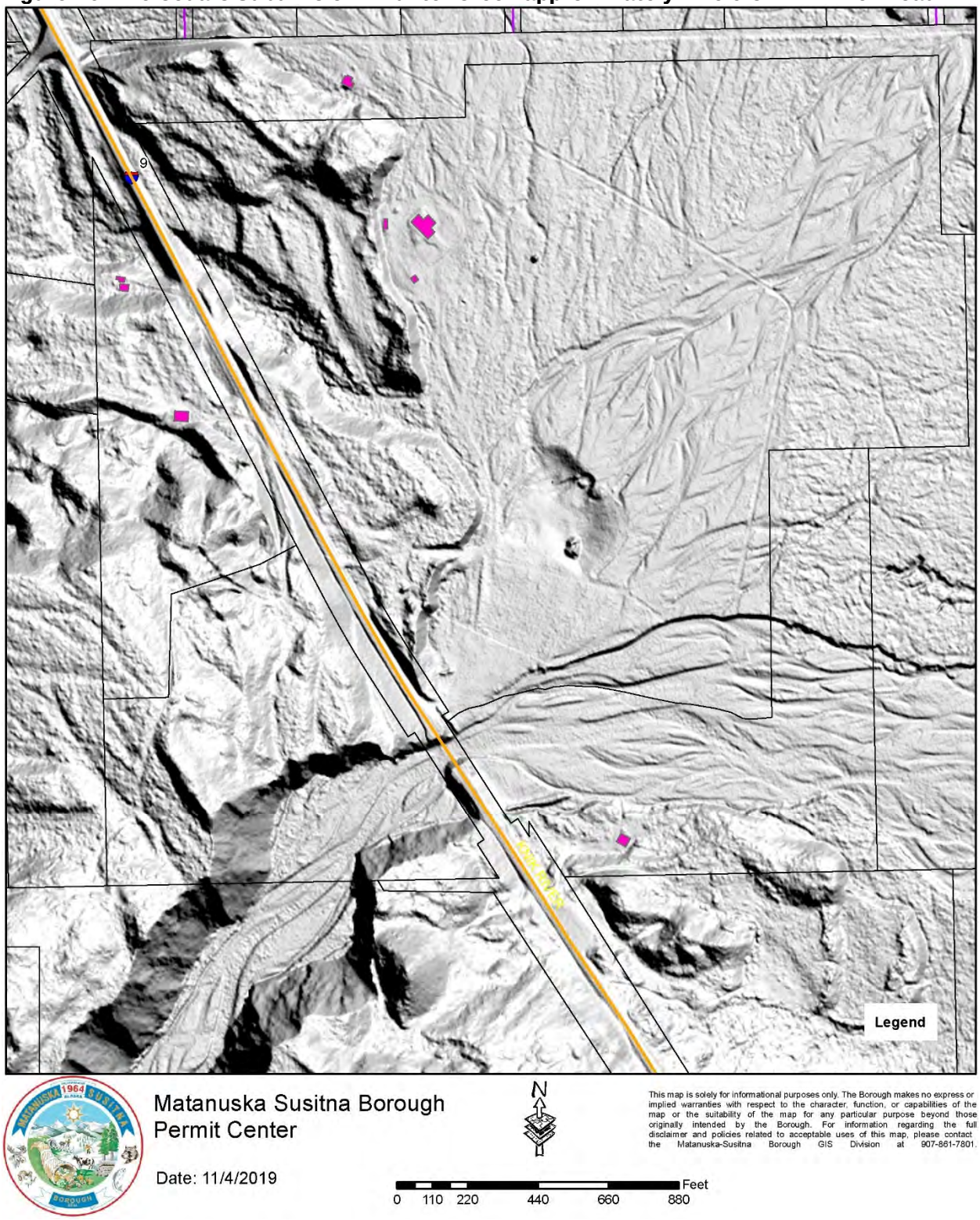


Figure 26. The Cedars Subdivision - Hunter Creek approximately Mile 9.5 Knik River Road



projects within the Borough can be accessed at:
https://www.adfg.alaska.gov/index.cfm?adfg=fishpassage.main.

Extent

Floods are described in terms of their extent (including the horizontal area affected and the vertical depth of floodwaters) and the related probability of occurrence. The following factors contribute to flooding frequency and severity:

- Rainfall intensity and duration.
- Antecedent moisture conditions.
- Watershed conditions, including terrain steepness, soil types, amount, vegetation type, and development density.
- The existence of attenuating features in the watershed, including natural features such as lakes and human-built features such as dams.
- Flow velocity.
- Availability of sediment for transport, and the bed and embankment watercourse erodibility.
- Location of potentially-impacted structures related to the base flood elevation as indicated with their certified high-water mark.

A variety of natural and human-induced factors influence the erosion process. River orientation and proximity to up and downstream river bends can influence erosion rates. Embankment composition also influences erosion rates, as sand and silt erode easily, whereas boulders or large rocks are more erosion-resistant. Other factors that may influence erosion include:

- Geomorphology;
- Amount of encroachment in the high hazard zone;
- Proximity to erosion-inducing structures;
- Nature of the topography;
- Density of development;
- Structure types along the embankment; and
- Embankment elevation.

Impact

Flood depth grids were completed for the Borough in 2019. Flood depth grids illustrate the flood depth, in feet above the ground surface, to demonstrate the variability of flood depths in flood-prone areas. Figures 27, 28, 29, and 30 include depth grids for multiple flood scenarios for Willow Creek which recently flooded on December 21, 2019: 10% (10-year), 4% (25-year), 2% (50-year), 1% percent (100-year) annual chance. This information is useful for visualizing flood impacts outside of the regulatory purview and for examining the vulnerability of structures in terms of severity and frequency.

The Matanuska River has eroded peoples' homes away. Recent mitigation projects have allowed homeowners to voluntarily sell their homes and relocate (see Figures 22-24).

Recurrence Probability

Flooding will continue in the Borough. Climate change may also play a part in increased flooding. The probability of future events is highly likely based on a minimum annual occurrence as seen in 2018 and 2019. Future populations of the Borough can expect to see flooding and erosion at the same or increased rates as current populations have experienced.

5.3.3.5 NFIP

Requirements for communities that participate in the NFIP, as stipulated in DMA 2000 and its implementing regulations, are described below.

DMA 2000 Requirements: Risk Assessment – NFIP

Profiling Hazards

Requirement §201.6(c)(2)(ii): The risk assessment shall address NFIP insured structures that have been repetitively damaged by floods.

Element

- Are there repetitively damaged properties in the jurisdiction?

Source: FEMA, 2015.

The function of the NFIP is to provide flood insurance at a reasonable cost to homes and businesses located in floodplains. In trade, the communities within the Borough regulate new development and substantial improvement to existing structures in the floodplain or require developers to build safely above flood heights to reduce future damage to new construction. The program is based upon mapping areas of flood risk and requiring local implementation to reduce flood damage primarily through requiring the elevation of structures above the base (100-year) flood elevations.

The Borough participates in the NFIP; the NFIP area includes the incorporated areas of the cities of Houston, Palmer, Wasilla, and Talkeetna. Table 11 defines FIRM zone definitions, and Table 12 contains current NFIP statistics for the Borough. The repetitive loss properties in Tables 12 involve three structures that are all single-family homes. Table 13 contains Borough and State Floodplain Coordinators that implement the NFIP. Tables 14 and 15 identify the number of structures and land use of properties that are within flood zones in the Borough.

Flood insurance purchase may be required in A, AO, AH, and A-numbered zones as a condition of loan or grant assistance. An Elevation Certificate is required as part of the development permit. The Elevation Certificate is a form published by FEMA, required to be maintained by communities participating in the NFIP. According to the NFIP, local governments maintain records of elevations for all new construction or substantial improvements in floodplains and must keep certificates on file.

Elevation Certificates are used to:

1. Record the elevation of the lowest floor of all newly-constructed buildings, or substantial improvement, located in the floodplain.
2. Determine the proper flood insurance rate for floodplain structures.

Figure 27. 10-Year or 10% Flood Depth Grid, Willow Creek

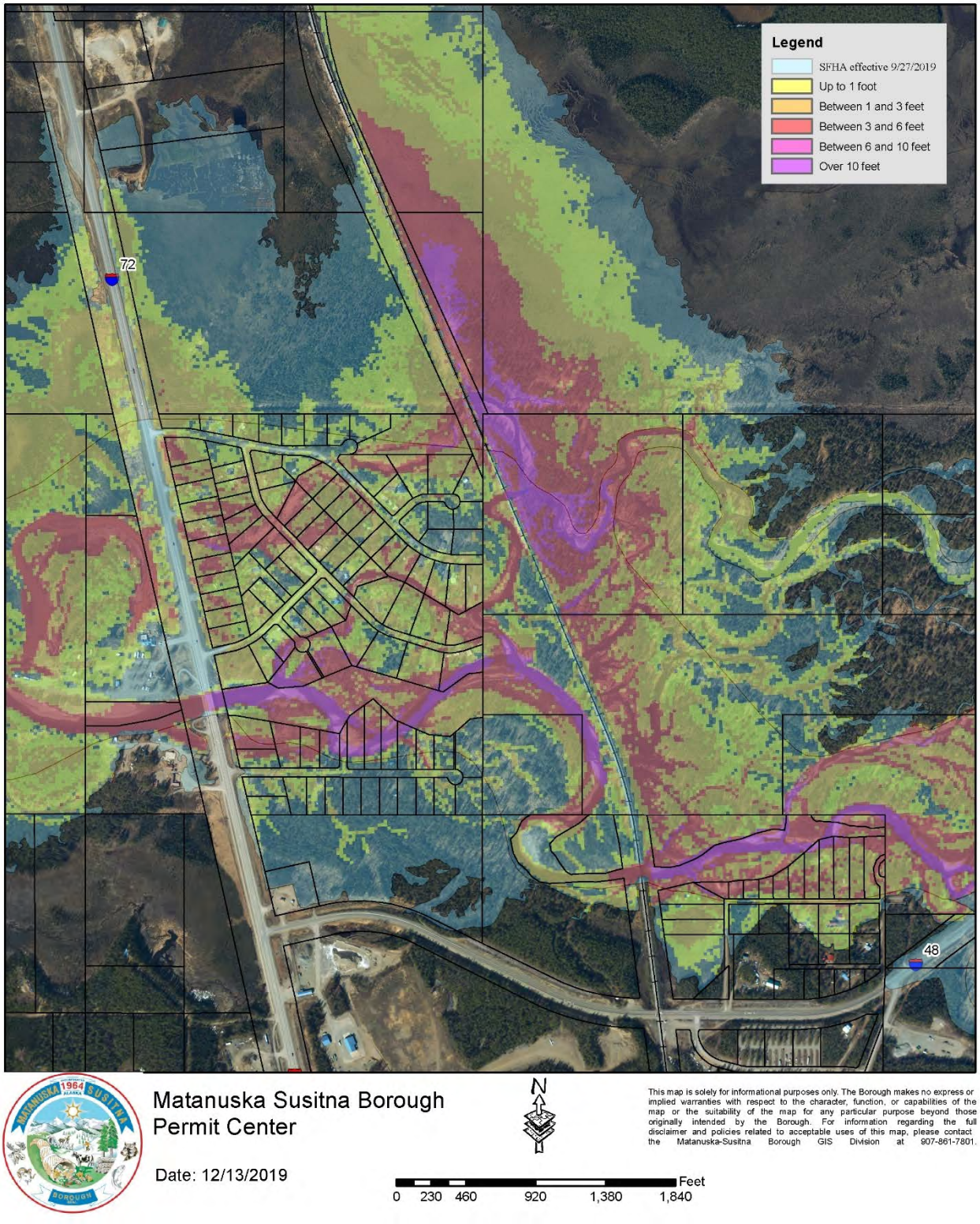


Figure 28. 25-Year or 4% Flood Depth Grid, Willow Creek

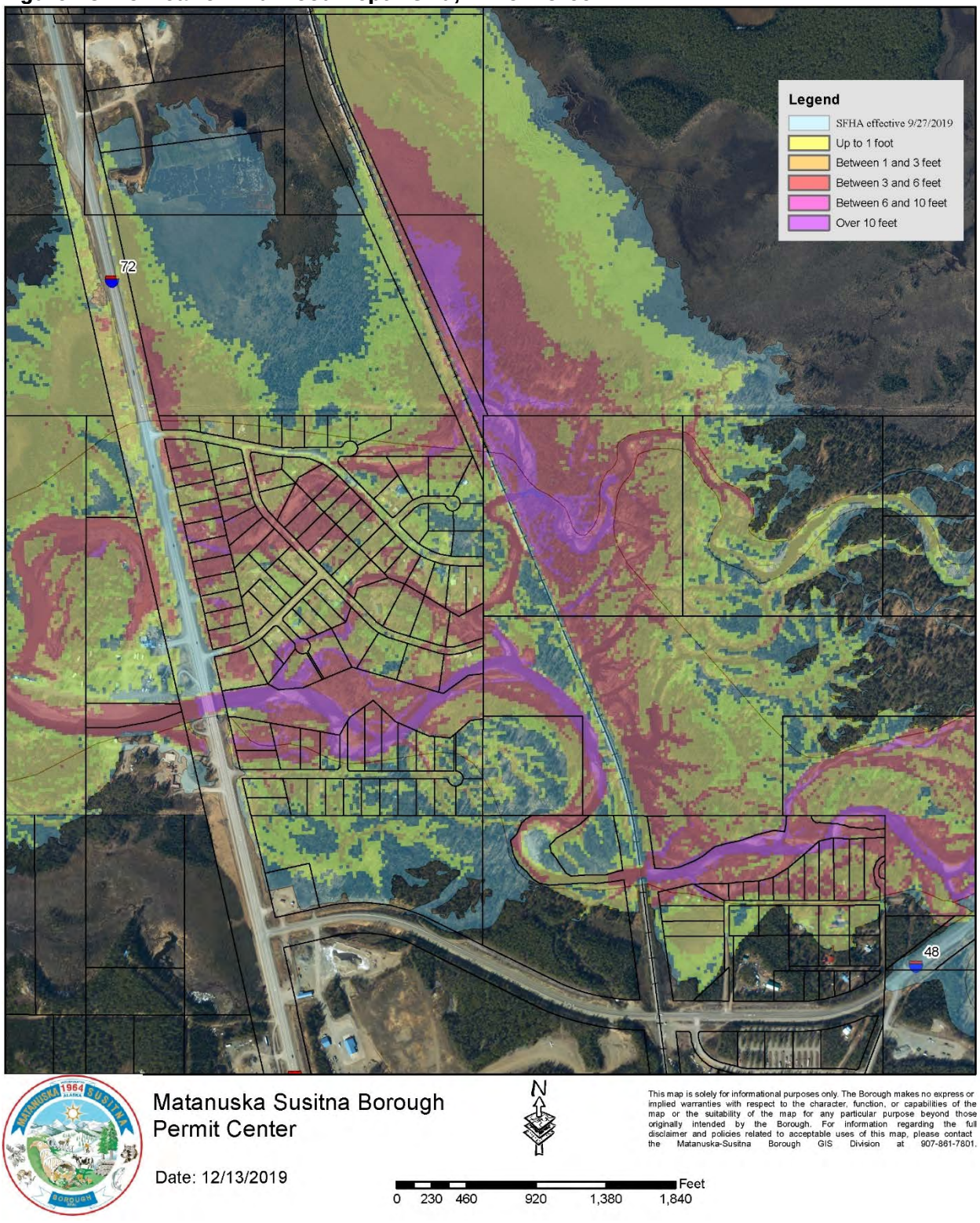


Figure 29. 50-Year or 2% Flood Depth Grid, Willow Creek

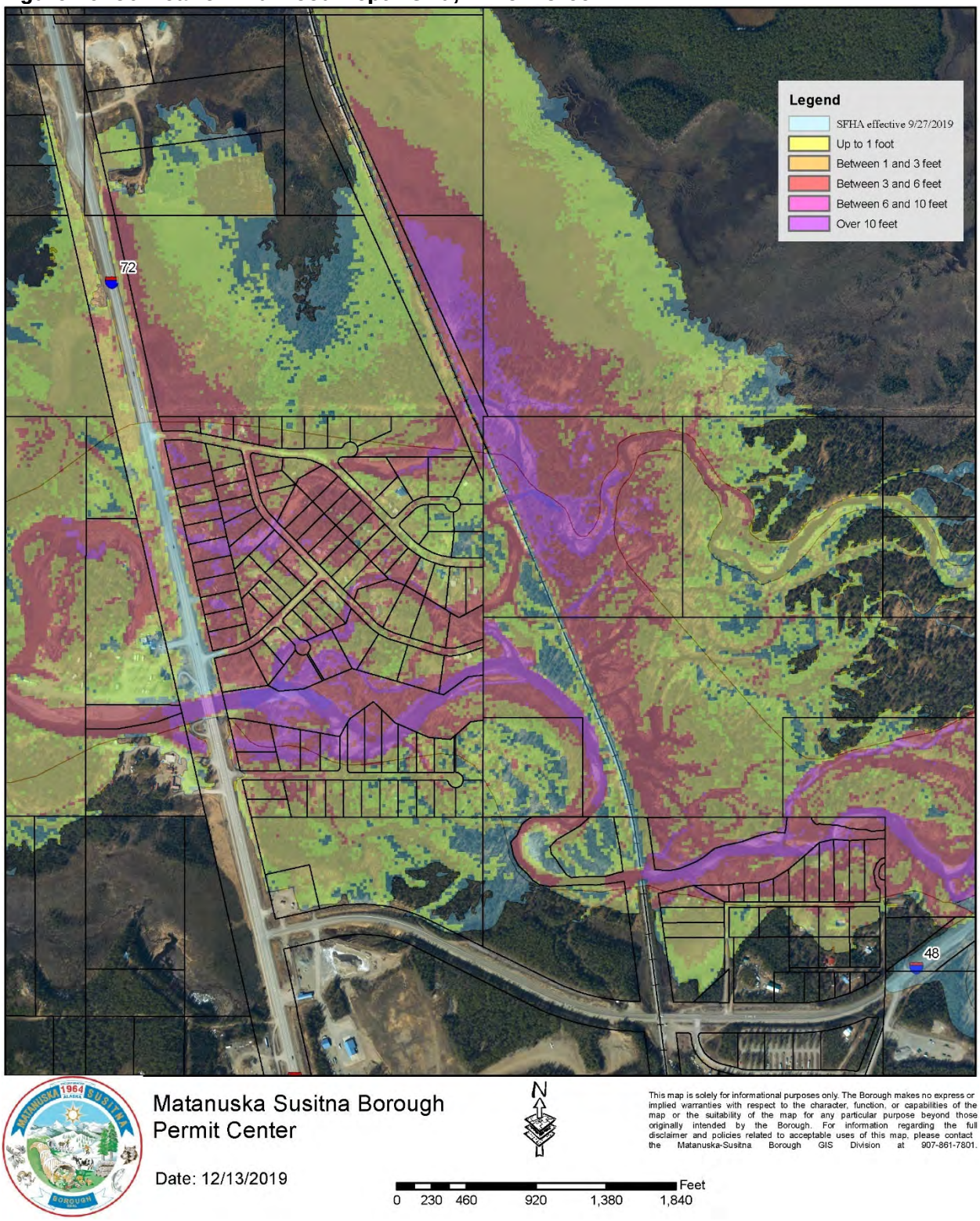
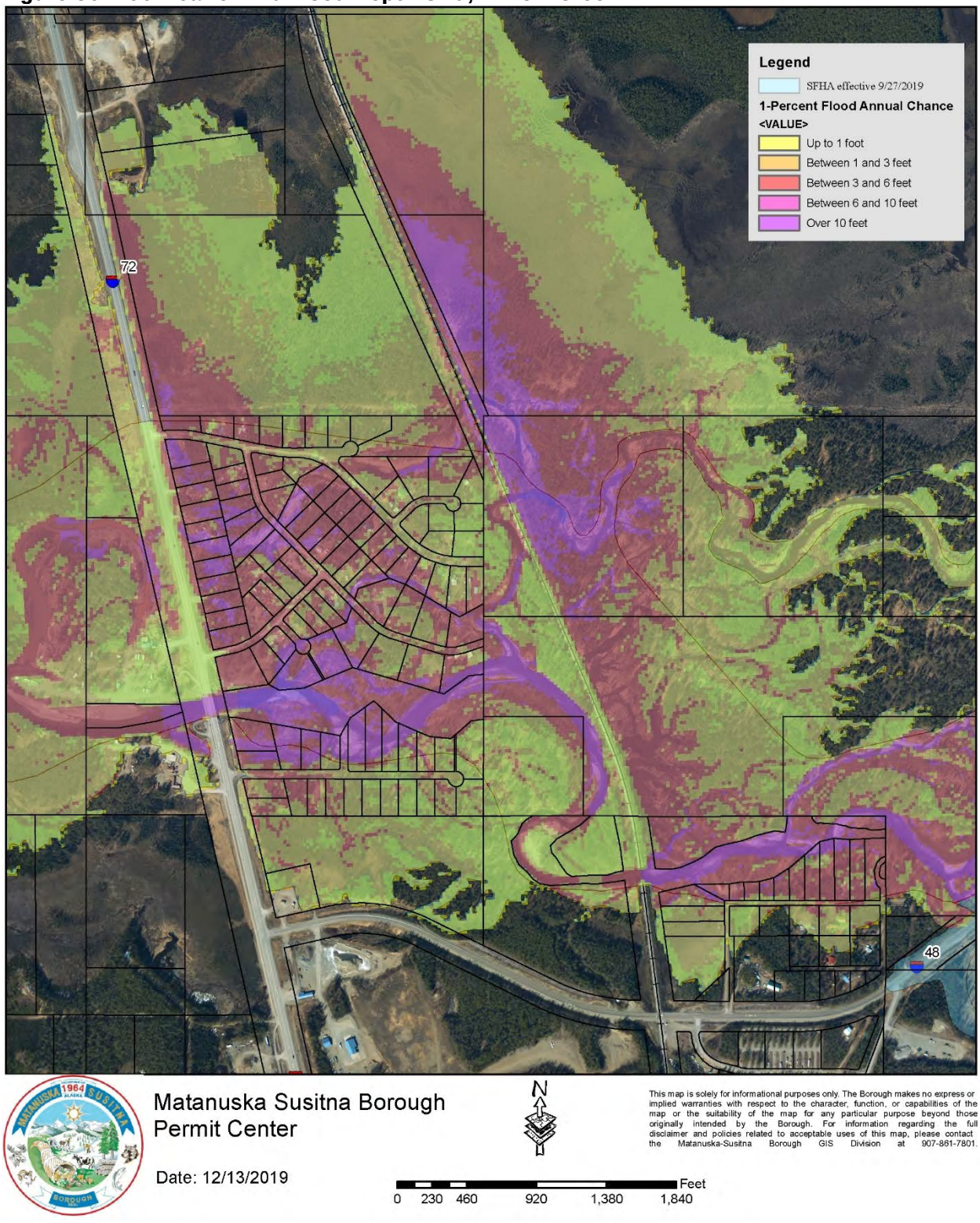


Figure 30. 100-Year or 1% Flood Depth Grid, Willow Creek



3. Local governments must ensure that elevation certificates are completed correctly for structures built in floodplains. Certificates must include:

Table 11. FIRM Zone Definitions

Firm Zone	Explanation
A	Areas of 100-year flood; base flood elevations and flood hazard not determined.
AO	Areas of 100-year shallow flooding where depths are between one and three feet, average depths of inundation are shown, but no flood hazard factors are determined.
AH	Areas of 100-year shallow flooding where depths are between one and three feet; base flood elevations are shown, but no flood hazard factors are determined.
A1-A30	Areas of 100-year flood; base flood elevations and flood hazard factors are determined.
B	Areas between limits of the 100-year flood and 500-year flood; or certain areas subject to 100-year flooding with average depths less than one foot or where the contributing drainage area is less than one-square mile; or areas protected by levees from the base flood.
C	Areas of minimal flooding.
D	Areas of undetermined, but possible, flood hazards.

- The location of the structure (tax parcel number, legal description, and latitude and longitude) and use of the building.
- The FIRM panel number and date, community name, and source of base flood elevation date.
- Information on the building's elevation.
- Signature of a licensed surveyor or engineer.

Table 12. Current NFIP Statistics for Borough

Emergency Program Date Identified	**Regular Program Entry Date**	**Map Revision Date**	**NFIP Community Number**	**CRS Rating Number**	**Borough Total # of Current Policies (9/30/19)**
2/28/1978	5/01/1985	9/27/2019	020021	-	225
Borough Total Premiums	**Borough Total Dollars of Paid Losses**	**AK State Average Value of Losses**	**AK State # of Current Policies**	**AK State Total Premiums**	**AK Total Loss Dollars Paid**
$222,010	$1,248,284	$15,227	2,352	$2.2 million	$9.7 million
Borough Average Premium	**AK State Average Premium**	**Borough Repetitive Loss Claims**	**Borough Dates of Rep. Losses**	**Borough Total Rep. Loss**	**Borough Average Building Rep. Loss**
$987	$906	6	2006 & 2012	$45,296	$7,480
Borough Minus Rated Policies	**Borough Total Insurance in Force**	**Borough Total Claims Since 1978**	**AK State Total Claims Since 1978**	**Borough Average Value of Losses**	**Borough Total Dollars of Paid Losses**
18	$55,983,700	78	640	$16,004	$1,248,284

Table 13. State and Local Floodplain Coordinators

Borough Floodplain Coordinator	Matanuska-Susitna Borough Contact: Taunnie Boothby Planning Department 350 E Dahlia Ave Palmer, AK 99645 Phone: (907) 861-8526 E-Mail: taunnie.boothby@matsugov.us
State of Alaska Floodplain Coordinator	Floodplain Management Programs Coordinator Division of Community and Regional Affairs Department of Commerce, Community & Economic Development Contact Person: Jimmy C. Smith 550 West 7th Avenue, Suite 1640 Anchorage, AK 99501 Phone: (907) 269-4132 E-Mail: jimmy.smith@alaska.gov Website: https://www.commerce.alaska.gov/web/dcra/PlanningLandManagement/FloodplainManagement.aspx

Table 14. Borough Structures within the Flood Zones

Flood Zones	Acres	Land Appraisal	Building Appraisal	Number of Structures
only 1% chance/year	174,778	$180,789,300	$324,628,308	1,893
both 1% & 0.2% chance/year	26,614	$47,431,200	$69,170,600	672
only 0.2% chance/year	2,777	$11,125,000	$21,420,148	210
Totals	**204,169**	**$239,345,500**	**$415,219,056**	**2,775**

Table 15. Borough Flood Zones by Land Use

Flood Zones	Undeveloped	Residential	Commercial	Agricultural	Mixed Use	Other	Total
only 1% chance/year	55.81%	40.58%	1.66%	0.05%	1.17%	0.73%	100%
both 1% & 0.2% chance/year	49.04%	48.02%	0.45%	0.23%	1.81%	0.45%	100%
only 0.2% chance/year	45.45%	45.06%	1.98%	0.00%	4.35%	3.16%	100%

5.3.4 Volcanoes and Ashfalls

5.3.4.1 Hazard Characteristics

Alaska is home to 41 historically active volcanoes stretching across the entire southern portion of the State from the Wrangell Mountains to the far Western Aleutians. An average of one to two eruptions per year occurs in Alaska. In 1912, the largest eruption of the 20th century occurred at Novarupta and Mount Katmai, located in what is now Katmai National Park and Preserve on the Alaska Peninsula.

Volcanic Ash

Volcanic ash, also called tephra, is fine fragments of solidified lava and rock crystals ejected into the air by a volcanic explosion. The fragments range in size, with the larger falling nearer the source. Ash is a problem near the source because of its high temperatures (may cause fires), burial (the weight can cause structural collapses; for example, it was 100 miles from Novarupta to Kodiak where structures collapsed), and impact of falling fragments. Further away, the primary hazard to humans is damage to machinery (including airplanes in flight), decreased visibility, and inhaling the fine ash (long-term inhalation can lead to lung cancer). Lightning in large ash clouds can also pose a hazard. In Alaska, this is a major problem as many of the major flight routes are near historically active volcanoes. Ash accumulation may also interfere with the distribution of electricity due to shorting of transformers and other electrical components (ash is an excellent conductor of electricity).

The largest volcanic eruption of the 20th century occurred at Novarupta Volcano in June 1912. The eruption started by generating an ash cloud that grew to thousands of miles wide during the three-day event. Within four hours of the eruption, ash started falling on Kodiak, darkening the city. It became hard to breathe because of the ash and sulfur dioxide gas. The water became undrinkable and unable to support aquatic life. Roofs collapsed under the weight of the ash. Some buildings were destroyed by ash avalanches while others burned after being struck by lightning from the ash cloud. Similar conditions could be found all over the area. Some villages ended up being abandoned, including Katmai and Savonoski Villages. The ash and acid rain also negatively affected animal and plant life. Large animals were blinded, and many starved because their food was eliminated.

The single greatest volcanic hazard in the Borough is airborne ash, fine fragments of rock blown high into the atmosphere during explosive volcanic eruptions.

5.3.4.2 History

The Alaska Volcano Observatory (AVO), which is a cooperative program of the USGS, DGGS, and the UAF Geophysical Institute (GI), monitors the seismic activity at 23 of Alaska's 41 active volcanoes in real time. In addition, satellite images of all Alaskan and Russian volcanoes are analyzed daily for evidence of ash plumes and elevated surface temperatures. Russian volcanoes are also a concern to Alaska as prevailing winds could carry large ash plumes from Kamchatka into Alaskan air space. AVO also researches the individual history of Alaska's active volcanoes and produces hazard assessment maps for each center. The Alaska Tsunami Warning Center, located in Palmer, also monitors volcanic and earthquake activity throughout the Pacific region.

The Borough has experienced volcanic ash in 1989, 1990, and 1992 from Mt. Redoubt and Mt. Spurr. These eruptions disrupted transportation and industry, particularly jet aircraft (Figure 31).

5.3.4.3 Location, Extent, Impact, and Recurrence Probability

Location

Figure 31 illustrates the spread of ash fall which is dependent on wind direction.

Extent

For any given eruption, the depth of ash deposited at any given location depends on the total volume of ash ejected, the wind direction, and the distance between the volcano and a given location.

Extreme ashfall events, similar to the 1912 event, would have similar extreme consequences including building damage up to and including collapses; disruption of travel (air, sea, land); and disruption of water, electric power and communications, and health and environmental impacts. Smaller ashfall events would result in little or no building damage, but would still have significant impacts, including:

- Respiratory problems for at-risk populations such as young children, people with respiratory problems, and the elderly;
- Disruption of air, marine, and land traffic;
- Clean-up and ash removal from roofs, gutters, sidewalks, roads, vehicles, mechanical systems and ductwork, engines, and mechanical equipment;
- Clogging of filters and possible severe damage to vehicle engines, furnaces, heat pumps, air conditioners, commercial and public buildings combined heating, ventilation, and air conditioning (HVAC) systems and other engines and mechanical equipment;
- Disruption of public water supplies drawn from surface waters, including degradation of water quality (high turbidity) and increased maintenance requirements at water treatment plants;
- Disruption/clogging of storm water drainage systems;
- Disruption of electric power from ash-induced short circuits in distribution lines, transmission lines, and substations; and

- Disruption of communications.

A major factor in determining ashfall is wind direction. Additionally, if there is a large ashfall, wind could blow and redistribute ashfall several times which would be a prolonged hazard.

Impact

The eruption of Mount Redoubt in 1989 caused widespread distribution of ash over the central and southern peninsula and resulted in power outages and disruption of traffic. Volcanic ash nearly caused the greatest loss of life of any disaster event in Alaska. During the 1989 eruption of Mount Redoubt, a commercial airliner, with 245 passengers and crew aboard, flew into an ash cloud resulting in a loss of power to all four engines.

Ash fall from prior eruptions is persistent and is carried along with glacial silt, primarily along the Matanuska River near Palmer. During times of high winds these fine particles may pose a significant health threat.

Another impact of major ashfall is a breakdown of soil cover, accelerating erosion. This impact was seen on the flanks of Okmok in the eastern Aleutian Islands following the 2008 eruption. Former grasslands were cut with networks of deep, rapidly eroding gullies.

The Borough has experienced a few tenths of an inch of ashfall on residents' vehicles and homes. Planes are grounded. Operation of motorized equipment including vehicles is discouraged due to the potential for damage. The Borough has a shelter in place policy. Schools would remain operationally functional during an event unless the School Superintendent states that they won't.

Recurrence Probability

Ash fall from volcanic eruptions is a threat to health and to equipment that may draw in fine, abrasive particles. The Borough's Department of Emergency Services receives weekly monitoring reports from the AVO and alerts whenever an eruption is imminent or observed.

The recurrence probability for the future residents of the Borough would remain the same as for current residents. The probability of future events of volcanic ashfall in the Borough is likely based on a minimum three to five-year occurrence.

Figure 31. Areas Affected by Ash Falls



5.3.5 Severe Weather

5.3.5.1 Hazard Characteristics

Severe weather occurs throughout Alaska with extremes experienced by the Borough that include increasing high winds, winter storms, thunderstorms and lightning, hail, heavy and drifting snow, heavy rain/freezing rain/ice storm, and cold.

High Winds

High winds occur in Alaska when there are winter low-pressure systems in the North Pacific Ocean and the Gulf of Alaska. Alaska's high winds can equal cyclonic force. In Alaska, high winds (winds in excess of 60 mph) occur frequently over coastal areas along the Gulf of Alaska. They can also combine with loose snow to produce ground blizzards.

Localized downdrafts, downbursts, and microbursts, are also common wind hazards. Downbursts and microbursts are often generated by thunderstorms. Downbursts are areas of rapidly falling rain-cooled air. Upon reaching the ground, downbursts spread out in all directions in excess of 125 mph. Microbursts are smaller scale, more concentrated downbursts reaching speeds up to 150 mph. Both types of wind, commonly lasting five to seven minutes, are hazardous to aviation. These winds reach hurricane force and have the potential to seriously damage community infrastructure (especially above ground utility lines) while disrupting vital marine transportation. High winds can also be a localized problem where a

pressure differential occurs across a mountain range (a katabatic wind), such as those found in Anchorage's Hillside area and in the Matanuska River Valley near Palmer.

Winter Storms

Winter storms include a variety of phenomena described above and may include several components such as high winds, snow, and freezing rain/ice storms. Ice storms include freezing rain, sleet, and hail and can be the most devastating of winter weather phenomena; often causing automobile accidents, power outages, and personal injury. Freezing rain coats every surface it falls on with an icy glaze. Freezing rain most commonly starts in a narrow band on the cold side of a warm front, where surface temperatures are at or just below freezing temperatures. Ice crystals high in the atmosphere grow by collecting water vapor molecules, sometimes supplied by evaporating cloud droplets. As the crystals fall, they encounter a layer of warm air where the particles melt and collapse into raindrops. As the raindrops approach the ground, they encounter a layer of cold air and cool to temperatures below freezing.

Thunderstorms

Thunderstorm hazards include lightning, heavy rain, snow, up drafts, down drafts, severe aircraft turbulence and icing, damaging hail, high winds, and flash flooding. A thunderstorm is considered severe if winds reach 60 mph or generate surface hail at least one inch in diameter. Thunderstorms affect relatively small areas; the average thunderstorm is about 15 miles in diameter and lasts less than 30 minutes in any given location.

Lightning exists in all thunderstorms. It is formed from built-up charged ions within the thundercloud. Lightning is hazardous to humans and frequently starts wildfires in Alaska's interior northern boreal forests. The BLM lightning activity sensors positioned across the interior locate an average of 26,000 cloud-to-ground lightning strikes per year. Very active thunderstorm days may feature 8,000 to 12,000 lightning strikes, mainly occurring during the late afternoon hours from the end of June to the beginning of July.

Lightning-caused injuries and deaths are unusual in Alaska. However, in 1986, one person was killed and three others injured near Tok, when they took shelter under a tree that was struck by lightning.

Alaska has a relatively low frequency of thunderstorm occurrence. In a typical year, Alaska has fewer than 20 days with thunderstorms, and they do not occur uniformly over the State. They are virtually unknown in the Borough.

Hail

Thunderstorms produce hail in ball or irregular shapes greater than 0.75 inch in diameter. The size and severity of the storm determine the size of the hailstones. Alaskan hail is small (pea-sized) and fairly rare. Lightning and hail may become bigger and more frequent with changes in the cryosphere. In August 1992, a sudden hailstorm deposited a blanket of 0.5 diameter hailstones to a depth of one inch in an area north of Wasilla.

Heavy and Drifting Snow

Heavy snow generally means an accumulation of more than 12 to 24 inches of snow inside of 24 hours. Sometimes, roadways will close, disrupting supply flow and emergency response service access. Excessive accumulation will collapse roofs, knock down trees and power lines, damage parked light aircraft, and capsize small boats. Heavy snow increases flooding risks. Heavy snow is associated with vehicle accidents, overexertion, and hypothermia. Drifting is the uneven distribution of snowfall and snow depth caused by strong surface winds. Drifting snow may occur during or after a snowfall.

Record heavy snow occurred in Anchorage on March 17, 2002, when two to three feet of snow fell in less than 24 hours over portions of the city. Ted Stevens International Airport recorded a storm total of 28.7 inches, and an observer near Lake Hood measured over 33 inches. Anchorage was essentially shut down during the storm, which fortunately occurred on a Sunday morning when a minimal number of businesses were open. Both military bases, universities, and many businesses remained closed the following day, and Anchorage schools remained closed for two days. It took four days for snow plows to reach all areas of the city. It doesn't take several feet of snow to cause considerable risk to residents of the Anchorage area. On March 20, 2001, more than 100 vehicle accidents occurred in the Anchorage-Eagle River area when 8 to 12 inches of snow fell.

Snowfall in the Borough is typically lighter than that received in Anchorage, however, because the Borough abuts the northern border of the Municipality of Anchorage, its residents are directly impacted by these events. Commuters are especially impacted.

Heavy Rain/Freezing Rain/Ice Storm

Freezing rain and ice storms describe occasions when excessive ice accumulations are expected during a heavy rain event. They are a particularly hazardous winter weather phenomena and often cause numerous automobile accidents, power outages, and personal injury. Ice storms form from freezing rain and pass through a thin layer of cold air just above the ground and cool to below freezing. The drops remain in a liquid state until they impact a surface and freeze on contact. Ice accumulations can damage trees, utility poles, and communication towers which disrupt transportation, power, and communications.

Cold

The definition of extreme cold varies according to the normal climate of a region. In areas unaccustomed to winter weather, near freezing temperatures are considered “extreme”. In Alaska, extreme cold usually involves temperatures below - 40 °F with additional wind chills. Excessive cold may accompany winter storms or can occur without storm activity during clear skies with high barometric pressure. Extreme cold accompanied by wind exacerbates exposure injuries such as frostbite and hypothermia.

Extreme cold interferes with infrastructure across Alaska for days or sometimes weeks at a time. Liquid fuels may congeal or freeze, denying motorized transportation, heat, and electricity generation. In desperation, some people choose to burn propane stoves indoors, increasing their risk to carbon monoxide poisoning.

5.3.5.2 Climate Change Influences

Increases in carbon dioxide, methane, and other gases in the atmosphere are generally warming and changing the climate worldwide by trapping heat that would have escaped back into space. Trees and other plants cannot absorb as much carbon dioxide through photosynthesis as is produced by burning fossil fuels. Therefore, carbon dioxide builds up and changes precipitation patterns; increases storms, wildfires, and flooding frequency and intensity; and substantially changes flora, fauna, fish, and wildlife habitats.

In contemporary usage, climate change commonly refers to the change in global or regional climate patterns that spans from the mid- to late 20th century to the present. Evidence collected by scientists and engineers from around the world tells an unambiguous story: the planet is warming. Climate change at locations in high northern latitudes, such as Alaska, is causing rapid and severe environmental change.

Alaska's temperature rise rate has been twice the average of the rest of the U.S. in recent decades. During the period from 1949 to 2014, the Statewide average annual air temperature increased by 3°F, and the average winter temperature increased by 6°F (ACRC, 2018). This included considerable annual and regional variability, and was accompanied by a greater number of extremely warm days and fewer extremely cold days (CCSP, 2008). The Statewide average annual precipitation during this same period increased by about 10%, with recent decades showing amounts largely above normal, but with substantial annual and regional variability (Shulski and Wendler, 2007, ACRC, 2018).

Global climate is projected to continue changing over this century, and changes to Alaska's climate are expected to be unprecedented (Chapin et al, 2014). Average annual temperatures in Alaska are projected to rise by an additional 2°F to 4°F by 2050, and by 6°F to 12°F by the end of the century depending on emission levels (Stewart et al, 2013). Projections of annual precipitation show an increase across Alaska as part of the broad pattern of increases projected for high northern latitudes.

Snow cover extent and depth have been decreasing in most places in Alaska for nearly three decades. Warmer winter temperatures change the precipitation frequency of snow and rain, and are producing more frequent rain-on-snow events.

5.3.5.3 History

The Borough has a history of severe weather events described in the DHS&EM *Disaster Cost Index* (DHS&EM, 2018b). These events are listed below.

4. **Matanuska-Susitna Borough, February 9, 1979:** As a result of a winter storm generating high winds and drifting snow, many roads in the **Matanuska-Susitna Borough** were rendered impassable to all traffic, including emergency vehicles. DOT&PF was tasked by DHS&EM and public assistance was provided to clear roads; the Alaska National Guard conducted rescue operations for isolated and stranded individuals. Subsequent to the Governor's request, the SBA made disaster loans available to 44 residents and 24 businesses which suffered damage as a result of the storm. The State did not make any direct grants to individuals or families.

108. Moose Feeding Project: Record snowfall depths prevented moose from gaining access to their usual feeding grounds, forcing them to starve and attempt to use the Alaska Railroad tracks to access food. This caused numerous collisions with vehicles and disrupted train traffic.

119. Hazard Mitigation Cold Weather, 1990: The Presidential Declaration of Major Disaster for the Omega Block cold spell of January and February 1989 authorized federal funds for mitigation of cold weather damage in future events. The Governor's declaration of disaster provided the State matching funds required for obtaining and using this federal money.

00-191. Central Gulf Coast Storm declared February 4, 2000 by Governor Murkowski, then FEMA-declared (DR-1316) on February 17, 2000: On February 4, 2000, the Governor declared a disaster due to high impact weather events throughout an extensive area of the State. The State began responding to the incident December 21, 1999. The declaration was expanded on February 8 to include the City of Whittier, City of Valdez, Kenai Peninsula Borough, **Matanuska-Susitna Borough**, and the Municipality of Anchorage. On February 17, 2000, President Bill Clinton determined the event warranted a major disaster declaration under the Robert T. Stafford Disaster Relief and Emergency Assistance Act, P.L. 93-288 as amended. On March 17, 2000, the Governor again expanded the disaster area and declared that a condition of disaster existed in Aleutians East, Bristol Bay, Denali, Fairbanks North Star, Kodiak Island, and Lake and Peninsula Boroughs and the census areas of Dillingham, Bethel, Wade Hampton, and Southeast Fairbanks, which was of sufficient severity and magnitude to warrant a disaster declaration. Effective on April 4, 2000, Amendment No. 2 to the Notice of a Major Disaster Declaration, the Director of FEMA included the expanded area in the presidential declaration. Public Assistance, for 64 applicants with 251 PWs, totaled $12.8 million. Hazard Mitigation totaled $2 million. The total for this disaster was $15.66 million.

03-204. Southcentral Windstorm (AK-DR-1461) Declared March 28, 2003 by Governor Murkowski, then FEMA-declared April 26, 2003: A major windstorm with sustained and severe winds that exceeded 100 mph occurred between March 6 and March 14, 2003. The windstorm affected the **Matanuska-Susitna Borough**, the Municipality of Anchorage, and the Kenai Peninsula Borough. Severe damage occurred to numerous personal residences and local businesses; extensive damage occurred to public facilities (i.e. schools, libraries, community centers, airports, buildings, and utilities). Federal Disaster Assistance for Debris Removal, Emergency Protective Measures, and all Permanent Work categories were approved under the Public Assistance Program. FEMA also authorized 404 Mitigation funding and individual assistance under the Individual and Household Program. Individual Assistance totaled $48K. Public Assistance totaled $2.5 million for 24 applicants with 87 PWs. Hazard Mitigation totaled $532K. The total for this disaster was $3.47 million.

12-240, 2012 September Storm declared by Governor Parnell on October 17, 2012, then FEMA- declared November 27, 2012 (DR-4094): Beginning on September 4, 2012, a strong weather system produced high winds and heavy rains, resulting in severe and widespread wind damage and flooding throughout much of Southcentral and Interior Alaska. The series of storms created a threat to life and property in the **Matanuska-Susitna Borough**, Kenai Peninsula Borough, Alaska Gateway Regional REAA, and the Chugach area. The magnitude of the storm

resulted in wind damages and flooding which necessitated debris clearance; emergency protective measures; damage to public facilities including roads, bridges, railroad, electrical distribution and water systems; and damage to private residences and losses of personal property.

The Borough has experienced severe weather events from 2000 through 2019 according to NWS. Table 16 contains notable events that were not declared disasters.

Table 16. Severe Weather Events

Date	Type	Event
April 4, 1980	High Wind	The Governor proclaimed a Disaster Emergency subsequent to a hurricane force windstorm which caused damage to over 5,000 residences and businesses in the Anchorage area and parts of the Borough. Though most of the residents were insured against their losses, the State provided a number of Individual and Family Grants and temporary housing, as well as public assistance to the Municipality. In addition, the SBA made disaster loans available to affected individuals.
December 13, 2000	High Wind	Brisk northeast wind gusts above 60 mph began at the Wasilla Fire Station. Modified arctic air flowing out of the Copper River Basin...associated with strong high pressure in the Northwest Territories of Canada...was the cause of the winds. Peak gusts reached 70 mph.
February 1, 2001	Winter Storm	A weakening low moved into western Prince William Sound. Gusty east winds preceded the low. Strong pressure rises accompanied the weakening low. Significant precipitation was reported on the west and southwest side of the low. In the Matanuska Valley, Palmer recorded 5 - 6 inches of snow, Hatcher Pass Lodge 7 inches, and 3 inches of new snow fell at the Talkeetna airport. At a site 20 miles south of Cantwell, one foot of new snow was reported. Between midnight and 4 pm Thursday, the Anchorage Police Department reported 98 vehicle crashes and 68 vehicles went off the road.
February 11, 2001	Heavy Snow	A strong low moved into the northern Bering Sea Saturday as its front swept into the Southcentral region. Initial marine over running of the arctic air resulted in heavy snow in the Susitna Valley. Strong down slope winds resulted in a delay in the onset of the heavy snow over the Anchorage and Palmer areas until Sunday evening. Spotter reports of snowfall were 12 inches in Palmer and 8 to 16 inches in the Susitna Valley.
March 18, 2001	High Wind	In the Susitna Valley, reports received from East Fork Maintenance Camp of DOT mentioned 6 inches of new snow. Typically, in cases like this, sporadic reports do not reflect highest amounts...which, in this case, likely exceeded the 8 inch/12 hours or less threshold for a heavy snow warning. Locally strong winds were reported near the Matanuska River. These winds were caused by moderate to strong high pressure in the eastern Alaskan interior and moderate low pressure in the Gulf of Alaska. Northeast wind gusts reached 71 mph.
March 22-24, 2001	High Wind	Another Matanuska wind event was set up by moderate, cold high-pressure in the Copper River Basin and complex low pressure in the Gulf of Alaska. Modified arctic air spilled through the Matanuska Glacier/River toward Cook Inlet. Gusts reached 66 mph Friday and 69 mph Saturday. Although the last wind gust of 60+ mph at the Wasilla Fire Station was reported at 2 am Friday, winds at the site again gusted to 59 mph Saturday. With these Matanuska wind cases, it is known that

		higher winds blow further up-river (where there are no gauges to measure speeds).
April 2-4, 2001	High Wind	In advance of a moderate front, strong, damaging southeast winds hit the Anchorage Municipality Zone Monday. Winds reached 60+ mph along the Upper Hillside by 8 pm Monday. Peak winds reported in the Anchorage area: 90+ mph at Glenn Alps, 88 mph at Rabbit Creek, 73 mph at both Muldoon and Alpenglow. Snow began falling in the Susitna Valley early Monday evening. Trapper Creek reported 16 inches of snow by Tuesday morning. 9 inches of new snow was reported near the Parks Highway at Colorado Lake (3 miles from Igloo) since 7 pm Tuesday, with 30 inches of snow since Sunday (4/1/01).
May 2-4, 2001	Heavy Snow	A late season snowstorm developed along and just north of the arctic front, dumping between 12 and 18 inches across portions of the northern Susitna Valley, the Portage and Whittier area, and over Turnagain Pass late Wednesday through Friday morning. Snowfall amounts along higher elevations in the Anchorage and Palmer area totaled between 8 and 12 inches.
November 17, 2001	Ice Storm	A moderate ridge, building northwestward from British Columbia into Prince William Sound, accompanied by moderate pressure rises (2.5 - 4.5 mbs/hour) and a northwestward moving arctic front in the area, produced locally very gusty easterly winds around Turnagain Arm, along higher elevations of the mountains east of Anchorage and along much of the Matanuska River. Anchorage Daily news reported a headline of "Ice storm glazes the Glenn (highway)". Sub headline read "Freezing rain halts traffic, coats highway, local roads in slick sheaths." In the article, "Eagle River got the worst of it (freezing rain). Starting about 5 p.m. the northbound Glenn Highway backed up after motorists lost traction on the Eagle River hill. Scores of cars, with estimates ranging from 30 to 75, also got stuck on Eagle River Loop road, further jamming the Glenn at the Hiland Road exit. Police struggled to get sanding trucks in place. Tow trucks got stuck. The NWS issued a freezing rain warning at 5:30 pm after a meteorologist reported a quarter-inch of ice coating her car in Birchwood. Most of Anchorage got a thin coating of freezing rain, as did Palmer. Alaska State Troopers reported a few minor accidents in Palmer and Wasilla." There was a north gust of 97 mph at Williwaw.
March 9-10, 2002	Heavy Snow	Strong, northeasterly "Matanuska" winds were reported around Palmer. Gusts peaked at 85 mph at midnight Saturday.
March 18-19, 2002	Heavy Snow	A moderate frontal system, moving into Southcentral Alaska, caused locally strong southeast wind around the Anchorage Municipality and areas of heavy snow in the Susitna Valley. Wind gusts of 97 mph were reported at a remote upper elevation location known as Site Summit (near Alpenglow Ski area). Other reports of 69 mph gusts were received at Glen Alps, along the Upper Anchorage Hillside, late Thursday morning. In the Susitna Valley, 1 - 1.5 feet of new snow fell in roughly a 24 hour or less interval around Talkeetna, Chulitna, and Swan Lake.
April 20, 2002	Heavy snow	Southerly winds aloft, associated with two low-pressure systems in the eastern Bering Sea, produced areas of heavy snow in the Susitna Valley. Reports around Petersville Road indicated close to 30" of snow 'hammered' the area. Lesser amounts were reported around Talkeetna and Skwentna...however, snow at lower elevations rapidly melted as it fell.
February 23, 24, 2003	Heavy Snow	An occluded front, associated with a strong low near the Aleutians, moved up into Southcentral Alaska early Monday, continuing north into the Susitna Valley. The front produced areas of heavy snow in the

		Susitna Valley, mostly in northern sections. At the Kenny Creek Lodge, at Mile 17.5 on the Petersville Road, a spotter report indicated 2 feet of snow fell in less than a 24-hour period. Heavy snow was also reported at Chulitna, Hayes River, Big River Lakes, and near Skwentna.
March 12-14, 2003	High Wind	A "Bora" type windstorm hit much of the Matanuska Valley, Anchorage, and portions of the Kenai Peninsula. Very cold air funneled down the Matanuska Valley, driven by a large high centered over the Chukotsk Peninsula. A combination of strong convergence aloft, a tight surface pressure gradient, and terrain forcing brought hurricane-force winds to the ground over a large portion of greater Anchorage. Damage reports were numerous and included small planes, roofs torn off buildings, car ports caving in, and siding blown off. Power outages of 9 hours or more were reported. Communications were also impacted. Lots of broken signs, traffic lights rendered inoperable, partial roof collapses, lost roofing shingles, and garbage cans scattered all over west Anchorage and the Palmer area. When the 109-mph gust hit the Ted Steven's International Anchorage airport at 10:42 pm, the tower was abandoned, and the airport closed to incoming traffic. Just prior to that, an Alaska Airlines flight received clearance to land with winds "three five zero at eight zero knots (92 mph)". Flights right behind it decided to go to Fairbanks and Juneau! In all, around 15 flights were diverted to Fairbanks, which became a parking lot for 747s Thursday. Hurricane force winds with gusts up to 100 mph wreaked havoc in the Borough. High winds were sustained for several days with temperatures of 0°F, making for a windchill factor of -53°F.
July 16-17, 2003	Winter Storm	An unusual winter storm affected areas of the northern Susitna Valley to Denali National Park. A rare cold front passage occurred across Interior Alaska, dipping as far south as the Talkeetna area. Warm moist air flowed into this front from the Cook Inlet region, causing a convergence zone. Cold air pushed south off the Alaska Range and caused snow to occur down to an elevation of approximately 1500 feet. Water equivalent amounts ranged from 2.64 inches in 24 hours at Trapper Creek to 5.7 inches at Cantwell. Minor flooding occurred north of Talkeetna. Whole trees were floating down the Jack River, near Cantwell, and local residents reported not having ever seen that in all the years they lived there.
July 22-29, 2003	Storm	Another strong storm moved into northwest Alaska, bringing heavy rain into Interior and Southcentral regions. Rainfall amounts were reported at 7.45 inches over a day and a half period at the base of Ruth Glacier. Talkeetna reported 1.78 inches, and Hatcher Pass reported 2.34 inches in a 24-hour period. This event occurred 11 days after a previous major flood event that occurred over the same region July 16-17. High freezing levels and extremely moist soil conditions contributed to the excessive runoff that lead to the rapid rise of many of the small streams in the Susitna Valley. Four inches of water was reported along the Parks Highway at Honolulu Creek. Some erosion occurred at the approaches to the bridge across Honolulu Creek. Susitna Landing had water in the parking lot and campground. Railroad tracks sustained washout damage near Curry, about 20 miles north of Talkeetna.
November 8-9, 2003	Heavy Snow	A front pushed through Southcentral, resulting in heavy snowfall along the Chugach Mountains and along the maritime polar boundary inland of the coast. Snowfall in the northern Susitna Valley fell at a rate of over an inch an hour, resulting in 18 inches of snow over an 11-hour period. Total snowfall reached 25 inches in the northern Susitna Valley.

November 23-24, 2003	Heavy Snow	A strong low in the northern Bering Sea had a trailing front that extended across the eastern Bering Sea and pushed into Southwest Alaska Sunday, November 23rd. Cold air already in place over Southcentral coupled with the inflow of moisture associated with this front, and formation of a low along the front resulted in localized areas of heavy snowfall in the Matanuska Valley. The Alaska and West coast Tsunami Warning center reported a storm total of 20 inches over a 16-hour period.
January 6-7, 2004	High Wind, Drifting Snow	Strong high-pressure over Interior Alaska combined with a rapidly deepening low in the Gulf of Alaska, resulted in strong northerly wind across Southcentral and the northern gulf coast of Alaska. The north wind reached 86 mph in the Palmer and Wasilla area as a result of channeling down the Matanuska Valley. Drifting snow and sand resulted in the derailment of the Alaska Railroad train at the junction of the Parks Highway, resulting in closing the Parks Highway for several hours.
March 19, 2004	High Wind	Strong high-pressure in the Bering Sea along with a developing low in the Gulf of Alaska increased the pressure gradient over much of the area during the period, creating high winds over the North Gulf Coast. Wasilla reached a peak wind of 72 mph with estimated wind gusts to 75 mph across the Matanuska Valley.
September 29-30, 2004	Heavy Snow	A low moved from the southwest Gulf of Alaska into the Susitna Valley. This resulted in a strong push of moisture into the Susitna Valley over the colder air in the northern Susitna Valley. The orographic lift typical of the "bench" near Chulitna resulted in heavy snow beginning late Wednesday night that continued until the snow changed over to rain Thursday afternoon. The cooperative observer reported that 12 inches of snow fell from 10 p.m. Wednesday night through Thursday morning.
October 1, 2004	Heavy Rain	A strong Bering Sea storm pushed extremely moist air into Southcentral. Heavy rain and snow occurred over the previous weekend, resulting in saturated soil throughout the region. Rainfall of moderate to heavy rates was reported by observation sites in the Susitna Valley south to the Anchorage bowl. Amounts of 2 to 3 inches were observed across this region with higher estimated amounts along the Chugach and Talkeetna Mountains. This resulted in the small streams in the Anchorage Bowl and in the central Susitna Valley, which were already elevated from the weekend storm, to rise above bank full stage and cause minor flooding.
November 26-28, 2004	Heavy Snow	This storm was associated with a pronounced southerly fetch which brought warm moist air into Southcentral. Rain fell throughout much of Southcentral except in the northern zones where orographically enhanced snowfall rates left several feet of wet snow over the Northern Susitna Valley. Some residents reported snowfall rates of upwards of 3 to 4 inches per hour on the 27th and 28th.
December 22-24, 2004	Heavy Snow	The peak wind was 102 mph gust at Glen Alps trail head at 4 am Wednesday morning, December 22nd. The strong southeast flow pushed deep moist air into the Susitna Valley, resulting in heavy snow north of Talkeetna. Spotter reports were of at least 13 inches of snow overnight at Gate Creek Lodge near Trapper Creek.
January 3-4, 2005	Heavy Snow	A storm system south of the Gulf of Alaska merged with a front moving eastward off the central Bering Sea. The southerly flow and abundant moisture supply brought up to 35 inches of snow in 24 hours to areas north of Talkeetna. The influx of warm air also produced mixed precipitation in southern portions of the zone with freezing rain.

January 17-18, 2005	High Wind	Strong high-pressure and deep cold air over the eastern interior of Alaska along with a large low-pressure system in the Gulf of Alaska resulted in strong outflow wind through the channeled terrain of the Chugach Mountains. The wind peaked at 93 mph in the Wasilla area at the Cottonwood Creek Public Safety building. A tractor trailer was blown on to its side on the north bound off-ramp of the Parks Highway onto Trunk Road.
March 20-21, 2005	High Wind	Strong high-pressure over interior Alaska coupled with an intensifying low in the Gulf of Alaska resulted in strong gap outflow wind through the Chugach Mountains. The wind peaked at 81 mph at the Wasilla airport. The strong wind blew the McDonalds sign down and also knocked trees down in the Palmer-Wasilla area, causing localized damage.
June 14, 2005	Hail	Hail potential of 3/4 inch or more with this thunderstorm. This thunderstorm occurred over a relatively uninhabited region. A report was received from the Alaska Railroad that "ping-pong ball" size hail was observed near Curry.
June 15, 2005	Hail	A strong thunderstorm moved off the Alaska Range and merged with a weaker thunderstorm that moved off the Talkeetna Mountains 10 miles east of Talkeetna. A spotter reported golf ball size hail and trees blown down along with flooding basements of a couple of local businesses, but this did not result in any property damage.
February 10, 2006	Ice Rain	Very light freezing rain and moderate rainfall in the Palmer and Wasilla areas created treacherous driving conditions along the Glenn Highway. Numerous cars went off the road, and one accident required medical attention.
August 18-24, 2006	Extreme Rain	Widespread heavy rain fell over much of Central and Southcentral, beginning August 17 and continuing through August 23. Heavier rains Friday caused rises on both gauged and un gauged rivers throughout this area. 24-hour rainfall amounts of up to 6 inches were reported through the Susitna River valley by Saturday morning along with widespread reports of flooding and road wash outs. This event resulted in the tentative flood of record for the river gauge on the Little Susitna River at the Parks highway with a preliminary crest near 14 ft. Moderate rain fell earlier in the week beginning on the 12th and 13th in the Susitna Valley. Total rainfall measured at the Ruth Glacier remote automated warning system (RAWS) was 16.42 inches for this event, and the Hatcher Pass RAWS measured 14.86 inches of rain.
October 9-10, 2008	Heavy Snow	An intense north Pacific storm produced high wind across Southcentral along with heavy snow along the Alaska Range. Snowfall totals were as high as 2.5 feet in the Susitna Valley at Skwentna and two feet at Puntilla and Hayes River lodges. Calls from observers at Skwentna, Puntilla, and Hayes reported 2 to 2.5 feet of snow fell overnight.
January 10-11, 2010	High Wind	A strong low in the Gulf of Alaska combined with deep cold arctic air over the Interior produced strong gap wind through the Chugach Mountains. High wind in the Palmer-Wasilla area caused significant damage.
March 8-9, 2010	Winter Storm	An intense storm moved into the Gulf of Alaska March 8th resulting in heavy snow and blizzard conditions from Southwest Alaska to Prince William Sound and inland into the Copper River Basin. Spotters reported over 17 inches of snow along Fishhook Road from this storm.

August 5-6, 2010	Freezing Rain	High freezing levels combined with moderate rain in the Susitna Valley resulted in the Yentna River rising above flood stage August 5th. Rainfall in the Susitna Valley was 1 to 1.5 inches prior to the rising water.
September 24, 2010	High Wind	A strong low moved into the Gulf of Alaska. This storm, coupled with high-pressure over Interior Alaska, produced strong north winds across the region and through the channeled terrain of Southcentral Alaska. Over 10,000 people lost electric power in the Southcentral region as a result of the high wind. The strongest wind observed was a 78-mph gust in the Palmer/Wasilla area. This strong wind event occurred early in the fall while trees still had leaves on them. This resulted in an uncharacteristically high number of trees being blown down, some of which fell across power-lines causing the unusually high number of power outages. Based upon insurance company information, it is estimated that $500,000 of damage occurred from this storm in the Matanuska Valley to the Anchorage area.
December 15, 2010	High Wind	A strong storm in the Gulf of Alaska combined with deep cold arctic air and high-pressure over Interior Alaska resulted in strong north gap winds across Southcentral. Along with the strong wind, low temperatures resulted in low wind chills across much of the Southcentral and Southeast. The peak measured wind was 87 mph in the Wasilla area. Gusts very likely reached around 100 mph during this event based upon the damage and power outages associated with this event in the Palmer and Wasilla area. Wasilla Airport observed a peak gust of 87 mph.
November 16-17, 2011	High Wind	Strong north wind blew down the Matanuska Valley, causing some damage in the Palmer area. A sign at a local gas station blew over due to the high wind. Several trees were blown down across the road.
November 29, 2012	High Wind	A strong Gulf of Alaska low coupled with deep cold arctic air and high-pressure of the Alaska mainland produced the typical strong cold advection outflow gap winds along the coast. Winds peaked at 97 mph in Valdez. Strong wind in Palmer blew the roof off one house and blew over a stop light. Along with the strong wind, humidity was extremely low, and the lack of snow cover resulted in extreme wild fire danger. A vehicle crash and fire spread to the grass and neighboring homes and forest. A downed power line started a fire.
December 20, 2012	High Wind	Strong deep cold air over Interior Alaska coupled with low-pressure in the Gulf of Alaska produced the typical strong gap winds through the mountain passes and channeled terrain of the Chugach Mountains. The wind peaked at 97 mph during this event.
March 12, 2013	High Wind	A large area of high-pressure centered near the Arctic Coast combined with a low in the Gulf of Alaska produced a strong pressure gradient over Southern Alaska. This strong pressure gradient produced warning level winds in the Matanuska Valley and in various places along the north coast of the Gulf of Alaska. Strong winds coming out of the Matanuska River valley reached the intersection of the Glenn and Parks highways near Palmer. The Glenn Highway Milepost 35 weather information sensor reported peak wind gusts of 78 and 84 mph the afternoon of March 12. The wind blew down trees and knocked down a traffic sign six miles southwest of Palmer.
November 22, 2013	Winter Storm	A strong North Pacific storm moved into the Gulf of Alaska November 21, pushing copious moisture and warm air aloft over the southern mainland of Alaska. This storm produced blowing snow across the Chugach Mountains, freezing rain over the Kenai Peninsula to the southern Susitna Valley, and areas of snow and freezing rain across

		Southwest Alaska. The freezing rain resulted in school closures from Anchorage to the Palmer and Wasilla area. Several school buses slid off the road and one bus flipped on its side in the Wasilla area due to icy roads. Blizzard conditions in Thompson Pass resulted in the Alaska DOT closing the road during this event. Wasilla school district transportation department reported significant ice accumulation.
February 5-6, 2015	High Wind	On February 5 and 6, an Arctic high-pressure ridge extended from the Alaska Interior into the Yukon at around 1,040 millibars. This ridge, combined with a low-pressure system around 966 millibars located in the Eastern Gulf of Alaska created a strong pressure gradient over Prince William Sound and the northern extent of Cook Inlet. Gap winds developed and damaged vessels in harbor and buildings in the region. The peak gust of 75 mph occurred at 10 pm February 6. DOT Station GTFA2 measured a peak gust of 71 mph. An unoccupied single engine plane was damaged at the Palmer airport.
March 6-7, 2015	Heavy Snow	The Susitna Valley's largest snow event of the season occurred in early March as a storm from the Bering Sea moved east across mainland Alaska. The associated cold front, and southerly flow ahead of the front, provided the necessary moisture and lift to bring nearly one and a half feet of snow to the most populated areas of the northern Susitna. Elsewhere in Southcentral, precipitation was rather mixed. Southeast downslope winds warmed surface temperatures into the low forties. in Anchorage, rain fell. Higher elevations of Homer received up to two inches of wet snow. Peak snowfall in the northern Susitna Valley occurred between midnight and 6:00 am on March 7. The DOT near Trapper Creek reported 12 inches of snowfall by 4:00am from the Talkeetna Spur road to Mile 163 of the Parks Highway. The highest snowfall amount was reported by a spotter in Chulitna with 16 inches of snow by the afternoon of March 7th. Early on the morning of March 7, a power outage occurred, impacting approximately 2,500 members in greater Willow, Talkeetna, Petersville, and the Trapper Creek area. The outage was blamed on heavy snow.
April 16, 2015	Lightning Strike	A lightning strike near Houston knocked out power for more than 28,000 people. The lightning strike at 5:42 p.m. affected the Intertie between Anchorage and Fairbanks, knocking out power from Willow to as far as North Pole and Salcha. According to Golden Valley Electric Association, the strike knocked out 11 substations.
August 18, 2015	Hail	Severe thunderstorms developed over the Matanuska and Susitna Valleys before moving over Cook Inlet and dying out. One storm over populated areas produced large hail. Another thunderstorm appeared severe on radar but was not in a populated area and did not produce any local storm reports. Largest hail reports were estimated from social media to be around 1.0 inch. A NWS employee reported 1.0-inch drifts of pea-sized hail.
September 27-30, 2015	Heavy Rain	A strong low-pressure system moved across the state from the northwest, bringing heavy precipitation to the Southcentral area. The precipitation started as rain, then switched to snow as cold temperatures moved in behind the front. Heavy rain overnight caused minor flooding of the streams and rivers in the central Susitna Valley. A cooperative observer at Amber Lake recorded 1.55 inches of rainfall in 24 hours on Sept. 27. Willow Creek reached one foot above minor flood stage, and Montana Creek reached 1.5 feet above minor flood stage. Ten homes were impacted by the water, with water surrounding them but not flooding the homes. One road was washed out.

October 24-26, 2017	Heavy Snow	A negatively-tilted trough over the Kenai Peninsula shifted to the northeast and allowed precipitation to overspread Southcentral. An antecedent cold air mass allowed for snowfall over inland locations while coastal locations remained in a rain/snow mix. The greatest snow accumulations were observed over the Susitna Valley. Multiple reports of 9 to 12 inches of snowfall fell near and east of Skwentna. The base of Mount Susitna reported seven inches of snow while Talkeetna reported 8.5 inches of snow. Storm total reports: 11 inches at Bentalit Lodge, 12 to 18 inches at the Cantwell DOT, and 12.5 inches at the Chulitna DOT.

Source: NWS, 2019

5.3.5.4 Location, Extent, Impact, and Recurrence Probability

Location

The entire Borough is affected. Wind gusts have peaked at 100 mph.

Severe weather is a normal part of living in Alaska. However, sometimes the confluence of elements produces extreme conditions. Being prepared is the key to survival. Alternate forms of home heat and lighting, stored food, appropriate clothing, and advance planning are critical.

In the Borough, there is potential for weather disasters. High winds can topple trees, damage roofs and windows, and result in power outages. Heavy snow can cause power outages or collapse roofs of buildings. Storms can make commuter travel to Anchorage difficult. Extreme weather is most prevalent during the winter with any combination of cold temperatures, strong winds, storm surge, and heavy snow.

Extent

The most common forms of damage to structures as a result of severe wind includes loss of roofing materials, damage to doors and hinges, broken water lines due to freezing, fallen trees, structural failure of out-buildings, fallen or damaged exterior lights, flag poles, and antennae. Overhanging signs on businesses and satellite dishes become airborne projectiles under certain conditions.

Heavy snow brings another set of damages. Structural deflection or collapse of structures is common. Deflection causes cracks or breakage of interior walls and finishes. Falling ice from roof eaves can knock out electric meters, damage vehicles, break windows, and threaten injury to passersby. Sliding snow can cause damages described above plus cause damage to roof-mounted vents and other equipment. Wind-packed snow and ice can block windows and emergency exits.

Impact

Heavy snowfall can also damage infrastructure and critical facilities. Heavy snowfalls make transportation difficult, especially by road, and result in more money spent on snow plow services. High numbers of injuries and fatalities are not expected with a heavy snow event. Heavy snow can have a greater impact on people who need access to medical services, emergency services, pedestrians, and people who rely on public transportation. The cost of fuel to heat homes during times of heavy snow can be a financial burden on populations with low or fixed incomes. Borough residents most vulnerable to the hazard of severe weather are the

homeless who lack adequate shelter and those on fixed incomes who may not be able to adequately heat their homes.

Extreme weather interferes with community infrastructure and its proper functions. It can cause fuel to congeal in storage tanks and supply lines, stopping electric power generation, which in turn causes heaters and furnaces to stop. Without electricity, heaters and furnaces do not work, causing water and sewer pipes to freeze or rupture. If extreme cold conditions are combined with low or no snow cover, the ground's frost depth can increase, disturbing buried pipes.

The greatest danger from extreme cold is its effect on people. Prolonged exposure to the cold can cause frostbite or hypothermia and become life-threatening. Infants and elderly people are most susceptible. The risk of hypothermia due to exposure greatly increases during episodes of extreme cold, and carbon monoxide poisoning is possible as people use supplemental heating devices not intended for indoor use during extreme weather events.

Recurrence Probability

Alaska will continue to experience diverse and seasonal weather events. Severe wind and rain are becoming more likely with climate change, while extreme snow and cold are becoming less likely. While the trend is toward warming, periods of extreme cold persist. January 2020 is an example of that. Climate change is causing extremes of both heat and cold, resulting in unpredictability in how current and future residents prepare. Severe winter storms, rain events, and high wind events occur annually; therefore, the probability of a severe winter storm impacting the Borough is highly likely based on an annual occurrence.

5.3.6 Wildfire and Conflagration Fire

During the five-year period spanning 2013 through 2018, over 82 fire-related fatalities were recorded in Alaska. Since 2013, the State has declared over 3,077 fire-related emergencies or disasters. Firefighter and public safety are the primary concern of each local and fire response agency. In Alaska, thousands of acres burn every year in 300 to 800 fires, primarily between the months of March and October. According to the Alaska Interagency Coordination Center (AICC), Alaska lost 7,815,368 acres from 2013 to 2017. This figure consisted of the 2,408 wildland fires that started throughout that same time period. This is an average of 3,246 acres per wildland fire (DHS&EM, 2018a).

For the purposes of profiling this hazard, fires are characterized by their primary fuel sources into two categories:

- Wildland fire, which consumes natural vegetation.
- Community fire conflagration, which propagates among structures and infrastructure.

Fires in the Borough tend to be wildland fires that consume structures. Fires in the Cities of Wasilla and Houston are predicted to be conflagration fires due to the presence of spruce trees up to structures.

Additionally, the Borough has experienced a regional spruce-bark beetle outbreak. Fire risk has increased in recent years due to these infestations which have affected both white and black

spruce forest stands. These infestations have impacted an estimated 309,746 acres (nearly 500 sq. miles) of spruce forest in the Borough. Dead and dying spruce trees present a wildfire hazard when standing because they can support intense, rapidly moving crown fires. These insect-killed trees also present a hazard after they have fallen because they can support very intense surface fires. Wildfire in either fuel type is very difficult for firefighters to control by direct attack. As of 2004, an estimated four million acres of spruce in Southcentral Alaska have been affected. While spruce-bark beetle outbreaks are natural events, the magnitude of spruce mortality during historic episodes was typically much less (20% to 30%) than the current infestation in which mortality rates exceed 90% (DOF, 2008). Figure 32 illustrates observed spruce-bark beetle damage from 2015 to 2018.

5.3.6.1 Management in Alaska

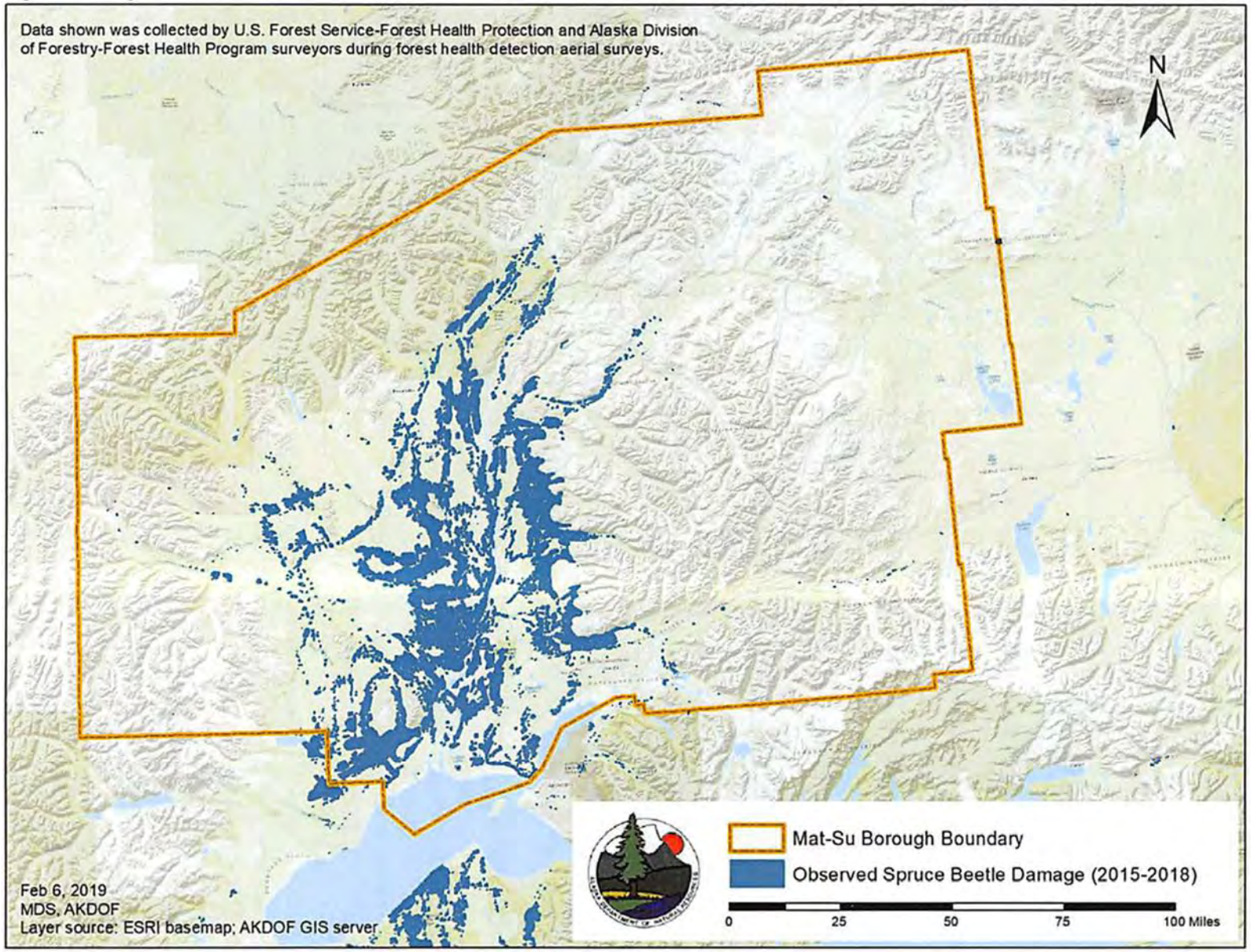
Alaska has a Master Cooperative Wildland Fire Management and Stafford Act Response Agreement. As a result, fire management is the responsibility of three agencies: DOF, BLM (through the Alaska Fire Service [AFS]), and U.S. Forest Service (USFS). See Figure 33. Each agency provides firefighting coverage for a portion of the State regardless of land ownership. These agencies have cooperated to develop a state-wide interagency wildland fire management plan. In the Borough, the DOF has the responsibility to manage fire response.

In 2008, the Borough adopted a Community Wildfire Protection Plan (CWPP) for its entire acreage. The majority of wildland fires that occur in the Borough are human-caused, and most of these fires are located within the wildland urban interface (WUI). These fires have the potential to threaten life and property because of their proximity to habitation. The Alaska Interagency Fire Management Plan has mapped all areas in the Borough into one of four fire protection designations or levels: Critical, Full, Modified, or Limited. The CWPP designates almost all of the burnable land in the Borough as Limited, with land in the "core area" designated as Full. Wildfire risk includes damage to structures, property, and loss of life in every community in the Borough.

In July 2019, the Horseshoe Lake Community Assessment and Wildfire Protection Plan was developed (Appendix G). This is the first area-specific CWPP within the Borough, and other communities are encouraged to develop their own CWPPs.

Alaska's statutory wildfire season normally begins on April 1 and ends on August 31. Extension of the fire season under State law means that small- and large-scale burn permits will be required for open debris burning or the use of burn barrels through September 30. With several wildfires burning in Southcentral Alaska and high fire danger persisting due to continued warm, dry conditions, the Department of Natural Resources (DNR) Commissioner announced that Alaska's statutory wildfire season in 2019 would be extended from August 31 to September 30. This was the first time that the fire season was extended since 2006 legislation shifted the five-month season to start and finish one month earlier. The one-month extension was necessary to ensure public safety. While acreage burned in the 2019 fire season falls well below the record season of 2004, when approximately 6.6 million acres burned, it marked the fifteenth time in 80 years of records that Alaska saw more than two million acres burn in a single season. As of November 23, 2019, more than 2.68 million acres burned in Alaska in the 2019 season (ADN, 2019a).

Figure 32. Spruce-Bark Beetle Areas



5.3.6.2 Hazard Characteristics

A wildland fire is a type of wildfire that spreads through consumption of vegetation. It often begins unnoticed, spreads quickly, and is usually signaled by dense smoke that may be visible for miles around. Wildland fires can be caused by human activities (such as arson or unattended campfires) or by natural events such as lightning. Wildland fires often occur in forests or other areas with ample vegetation. In addition to wildland fires, wildfires can be classified as tundra fires, urban fires, interface or intermix fires, and prescribed burns.

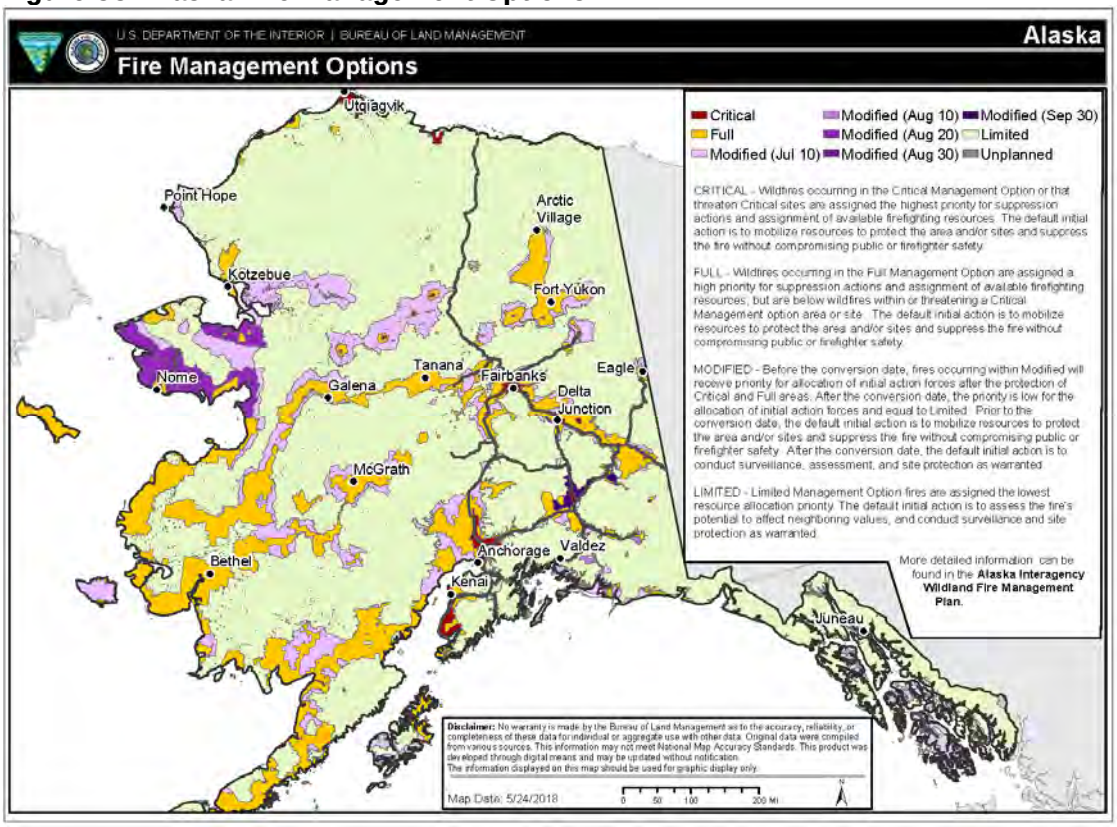
The following three factors contribute significantly to wildland fire behavior and can be used to identify wildland fire hazard areas.

- **Topography:** As slope increases, the rate of wildland fire spread increases. South-facing slopes are also subject to more solar radiation, making them drier, and thereby, intensifying wildland fire behavior. However, ridgetops may mark the end of wildland fire spread since fire spreads more slowly or may even be unable to spread downhill.
- **Fuel:** The type and condition of vegetation plays a significant role in the occurrence and spread of wildland fires. Certain types of plants are more susceptible to burning or will burn with greater intensity. Dense or overgrown vegetation increases the amount of combustible material available to fuel the fire (referred to as the "fuel load"). The ratio of living to dead plant matter is also important. Climate change is deemed to increase wildfire risk significantly during periods of prolonged drought as the moisture content of both living and dead plant matter decreases. The fuel load continuity, both horizontally and vertically, is also an important factor.
- **Weather:** The most variable factor affecting wildland fire behavior is weather. Temperature, humidity, wind, and lightning can affect chances for ignition and spread of fire. Extreme weather, such as high temperatures and low humidity, can lead to extreme wildland fire activity. By contrast, cooling and higher humidity often signal reduced wildland fire occurrence and easier containment. Climate change increases the susceptibility of vegetation to fire due to longer dry seasons.

The frequency and severity of wildland fires is also dependent on other hazards, such as lightning, drought, human causes, and infestations (spruce-bark beetle infestations or spruce needle aphids). The risk of wildfire has increased significantly over the past two decades, due in large part to the spruce-bark beetle infestation. If not promptly controlled, wildland fires may grow into an emergency or disaster. Even small fires can threaten lives and resources and destroy improved properties; they can also impact transportation corridors and/or infrastructure. In addition to affecting people, wildland fires may severely affect livestock and pets. Such events may require emergency water, food, evacuation, and shelter.

The indirect effects of wildland fires can be catastrophic. In addition to stripping the land of vegetation and destroying forest resources, large, intense fires can harm the soil, waterways, and the land itself. Soil exposed to intense heat may lose its capability to absorb moisture and support life. Exposed soils erode quickly and enhance rivers and stream siltation, thereby increasing flood potential, harming aquatic life, and degrading water quality. Lands stripped of vegetation are also subject to increased debris flow hazards.

Figure 33. Alaska Fire Management Options



Conflagration fires are very difficult to control. Complicating factors are wind, temperature, slope, proximity of structures, and community firefighting capability, as well as building construction and contents. Additional factors facing response efforts are hazardous substance releases, structure collapse, water service interruptions, unorganized evacuations, and loss of emergency shelters. Historical national conflagration examples include the Chicago City Fire of 1871 and the San Francisco City Fire following the 1906 earthquake. In 2018, the deadliest and most destructive wildfire and conflagration fire in California encompassed 20,000 acres, killed 85 people, and almost completely incinerated the town of Paradise. The fire was sparked by transmission lines owned by Pacific Gas & Electric. Dry vegetation and high winds caused extreme rates of spread.

Many wildland firefighters are neither equipped nor trained for conflagration fires. When wildland firefighters encounter structure, vehicle, dump or other non-vegetative fires during the performance of their wildland fire suppression duties, firefighting efforts are often limited to wildland areas.

Structural fire suppression within defined service areas is the responsibility of the Borough and Palmer Fire Departments. The Cities of Houston and Wasilla fund their own independent fire departments and have inter-departmental agreements within the Borough area.

5.3.6.3 Climate Factors

According to the *Global Climate Change Impacts in the U.S.*, published in 2009 by the U.S. Global Change Research Program, "Under changing climate conditions, the average area

burned per year in Alaska is projected to double by the middle of this century. By the end of this century, area burned by fire is projected to triple under a moderate greenhouse gas emissions scenario and to quadruple under a higher emissions scenario" (DHS&EM, 2018a).

Since 1990, Alaska has experienced nearly twice the number of wildfires per decade compared to the period from 1950 to 1980. For example, the sparsely-populated arctic region experienced only three wildfires over 1,000 acres from 1950 to 1970. Since 2000, there have been over 33 large wildfires in this same region.

Wind blows down dead trees that have been affected by spruce-bark beetles. As air temperatures warm, spruce-bark beetles spread; typically, this occurs when temperatures are over 60 °F.

5.3.6.4 History

The Borough has a history of fire events described in the DHS&EM *Disaster Cost Index* (DHS&EM, 2018b). These events are listed below and shown on Figure 34.

1996 Prator Lake Fire: "In 1996, one week before the devastating Millers Reach Wildfire, No. 2, Houston found itself fighting a wildfire in Houston on the south side of Prator Lake. Most area firefighters were fighting other wildfires throughout the Borough. Firefighting was performed with a skeleton crew from Houston as well as the Fire Department's Explorer post consisting of local teenagers. The fire was extinguished and kept around 12 acres in size. This fire was combined with the Millers Reach Wildfire No. 2 in the State and Federal disaster declarations." (Houston, 2018).

96-181 Millers Reach Fire declared June 4, 1996 by Governor Knowles, then FEMA-declared (DR-1119) on June 8, 1996: A fire which began on June 2, 1996, near Houston, Alaska on Millers Reach Road spread rapidly, destroying 344 structures and burning 37,366 acres in the Houston-Big Lake area (see Figure 35). Command and control of this fire was initially controlled from the Houston High School with a Type I Incident Management Team. Later, a Unified Command structure was established at the Creekside Plaza Mall in Wasilla which consisted of Local, State, and Federal representatives. On June 4, 1996, Governor Knowles declared a State Disaster Declaration, and President Clinton signed the Federal Disaster Declaration (AK-1119-DR) on June 8, 1996. This provided the State with Federal Disaster relief funding for the incident. This fire involved 37 fire departments and over 100 different agencies and organizations. In addition, 18,000 fire-fighting and support personnel responded within the first 48 hours. It took almost two weeks for the fire to be contained, and during this time, it burned 37,336 acres and destroyed 344 structures. The fire was contained on June 10 and declared under control on June 15. Individual Assistance totaled $1.87 million for 425 applicants. Public Assistance totaled $5.1 million for seven applicants with 50 DSRs. Hazard Mitigation totaled $1.75 million. The total for this disaster was $9.35 million. Per DNR, no definitive cause of the fire was determined.

Mitigation measures valued at $1.3 million were instituted as a result of the Millers Reach Fire. Among the most successful, and models for future measures are:

- Creation of defensible space around critical facilities in the City of Houston;

- Defensible space demonstrations in and around the Big Lake community;
- Development of dependable year-round water supply for the South Houston area;
- Fire breaks which can be used as evacuation routes;
- Widened access to the Prator Lake fire tanker fill site;
- Installation of metal siding and roofing on several community center buildings;
- An advertising campaign including television; and
- Video and printed brochures informing the public about fire hazards.

AK-15-249, 2015 Sockeye Wildfire declared by Governor Walker on June 15, 2015: Beginning on June 14, 2015 and continuing, a large urban interface wildfire exacerbated by record high temperatures caused widespread damage to the community of Willow and surrounding areas of the Borough (see Figure 36).

The response to the wildfire was hampered by conditions leading to red flag warnings for record warm temperatures, strong winds, low humidity, and dry thunderstorms that affected the entire central portion of the state, including the Borough. The wildfire damaged or destroyed at least 50 private homes and/or secondary structures and damaged several more, and resulted in 175 residents and hundreds of pets/work animals seeking refuge in temporary shelters. Open debris burning was the cause of the 7.22-acre fire. The following conditions existed as a result of this disaster: a robust emergency response and management operation requiring substantial additional labor, equipment, and support costs to combat the fire; activation of the emergency operations center; severe damage to personal and real property; and disruption of power, natural gas, communications, and other utility infrastructure.

On August 23, 2019, the Governor issued a Disaster Declaration for the Matanuska-Susitna Borough to provide aid to those who have been affected by the McKinley and Deshka Landing wildfires. As of December 31, 2019, the State DHS&EM's *Disaster Cost Index* had not been updated with information pertaining to these fires. Both the McKinley and Deshka Landing fires were human-caused.

Figure 37 provides an overview of the 3,288-acre McKinley and 1,318-acre Deshka Landing wildfire areas. The 367-acre Montana Creek and 85-acre Malaspina Fires occurred in July 2019; fire information for both fires are summarized on Figures 38 and 39. Both the Montana Creek and Malaspina Fires causes are unknown and under investigation.

The McKinley Fire started near Milepost 91 of the Parks Highway on August 17, 2019. This human-caused fire consumed 3,288 acres and was 95% contained on September 26 (see Figure 40). The fire began 18 miles north of Willow, and fuels were timber (grass and understory) and two feet of brush. Fifty-two primary residences, three commercial structures, and 84 outbuildings were destroyed in the fire by the evening of August 18 and morning of August 19. The Alaska Department of Public Safety, State Fire Marshal, and Alaska State Troopers, and the Community Organizations Active in Disasters worked with the DOF and the Borough to assist the communities in dealing with effects of the fire.

Figure 34. Borough Historical Wildfires

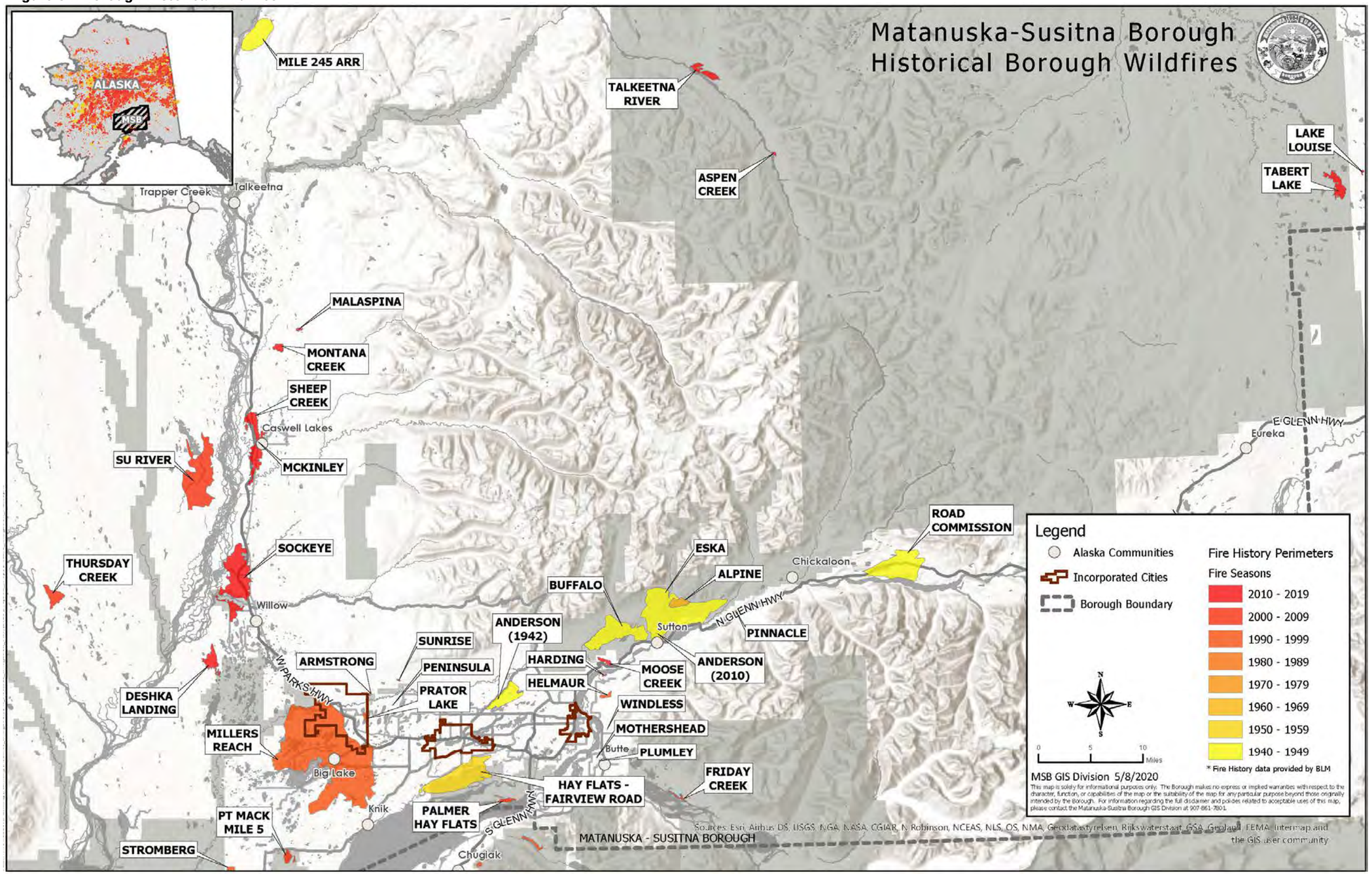


Figure 35. 1996 Millers Reach Fire

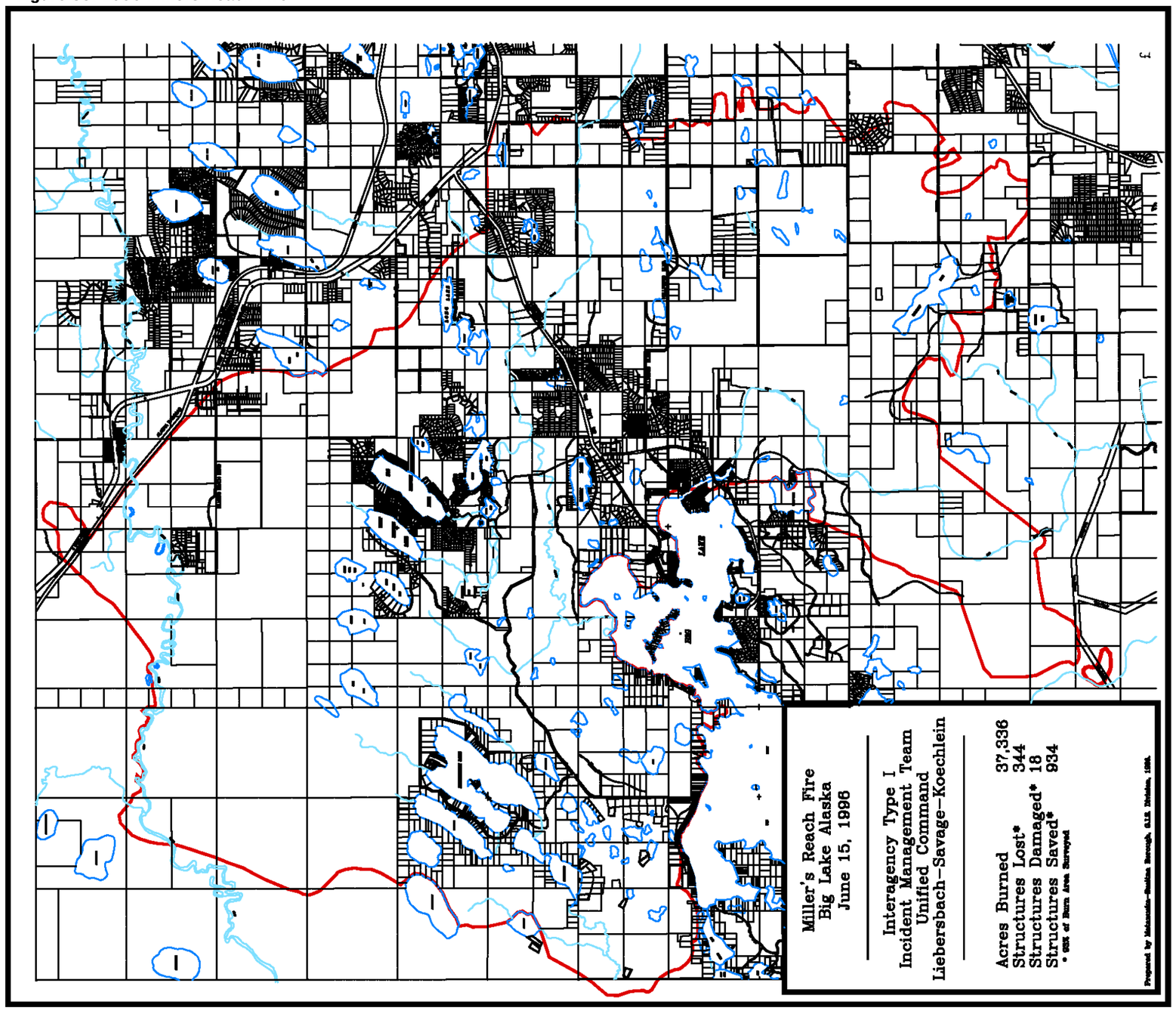


Figure 36. 2015 Sockeye Fire

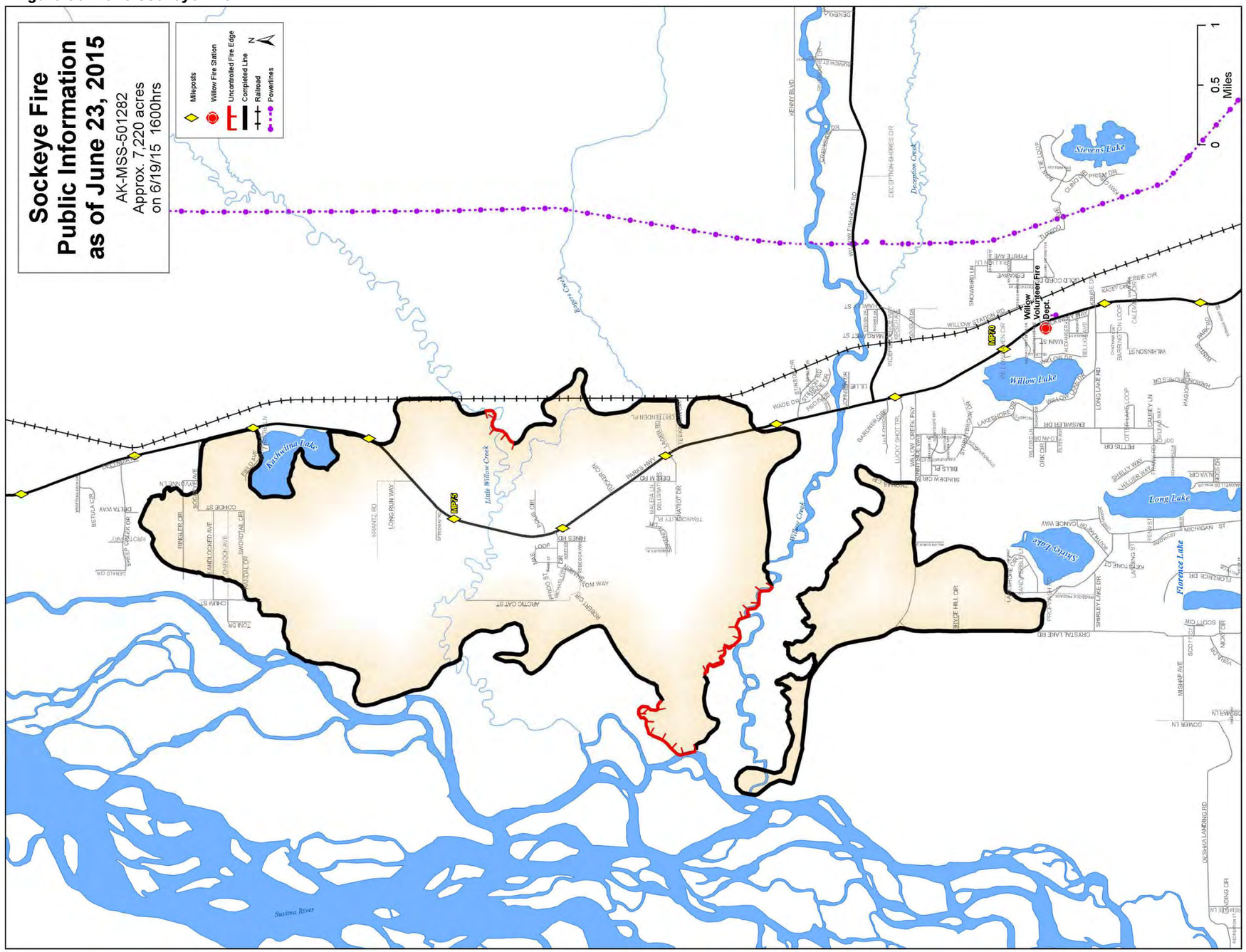


Figure 37. 2019 McKinley & Deshka Landing Fires

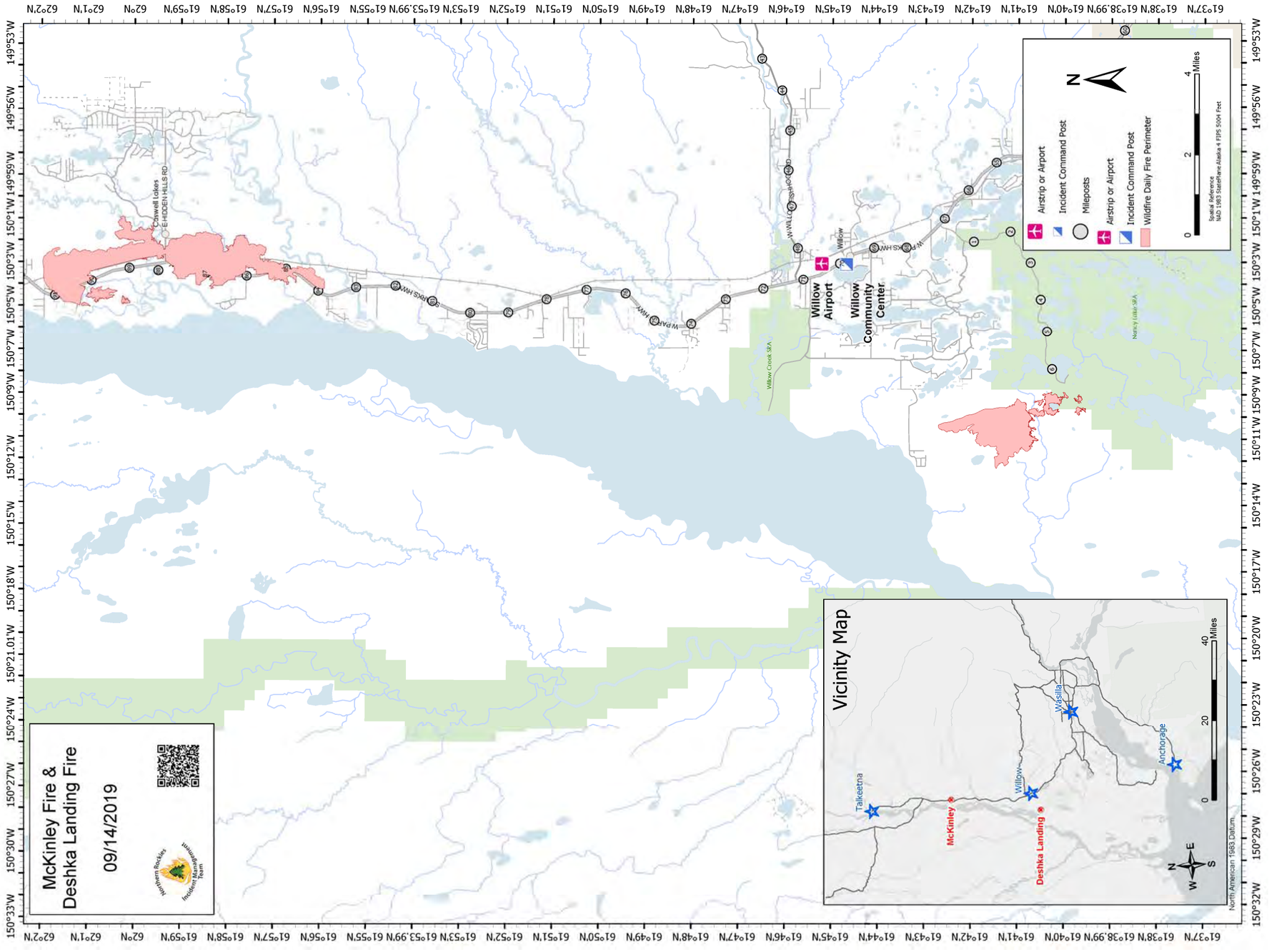


Figure 38. Public Information Map for Montana Creek and Malaspina Fires

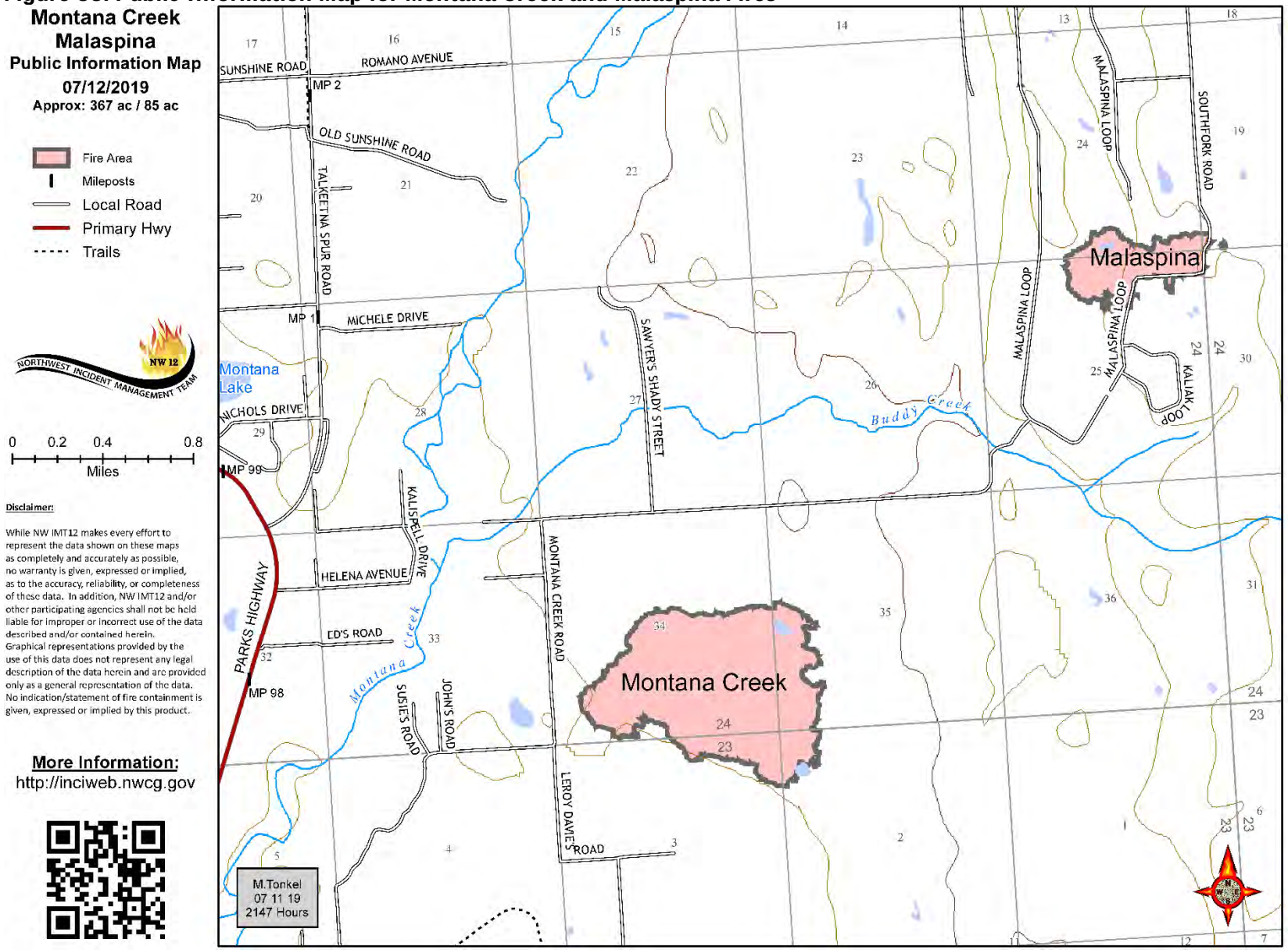


Figure 39. Summary for Montana Creek and Malaspina Fires

MONTANA CREEK AND MALASPINA FIRES SUMMARY

INFORMATION STATS:

⇒ The Montana Creek-Malaspina Fire Facebook posts with videos were viewed on twice as many screens on average compared to posts without video during NVA IMT 12's time here.

⇒ The average number of screens which viewed posts on the page during the fire was 6,988 views. The post announcing the Level 3-"Go" evacuations was viewed on 55,549 screens.

FINANCE:

⇒ Financial operations were in compliance with direction from agency representatives.
⇒ Costs were updated daily and kept current.
⇒ Local resources such as hotels, restaurants, equipment, crews, overhead, fuel and supplies injected $533,005.00 into the local economy.
⇒ As of July 15, 2019 the total cost of Montana Creek and Malaspina Fire is $2.9M.

BAKER RIVER HOTSHOTS

July 4 at 8:37 PM



"A couple shots from the Montana Creek Fire on this 4th of July. Crew working hard to contain the fire with limited resources available. Sadie's mod hauling hose into the line... Al, Jack, and Nick using Alaska style spruce swatters to knock down the fire in the muskeg.... a CL-215 water scooping plane trying to slow the fire on the south flank."



BAKER RIVER HOTSHOTS

July 9 at 10:24 AM



"Crew nearing the end of our tour in Alaska. A couple pics of our most recent initial attack fire near Talkeetna, the Malaspina Fire."



MONTANA CREEK FIRE STARTED

July 3, 2019
Final Fire Acreage:
367 Acres

MALASPINA FIRE STARTED

July 7, 2019
Final Fire Acreage:
85 Acres

PEAK OPERATIONAL RESOURCE COUNT (ON JULY 12TH)

⇒ 2 Type 2IA Crews
⇒ 4 Type 2 Crews
⇒ 4 Engines
⇒ 4 Water Tenders
⇒ 1 Dozer
⇒ 15 Line Overhead

MONTANA CREEK AIR SUMMARY

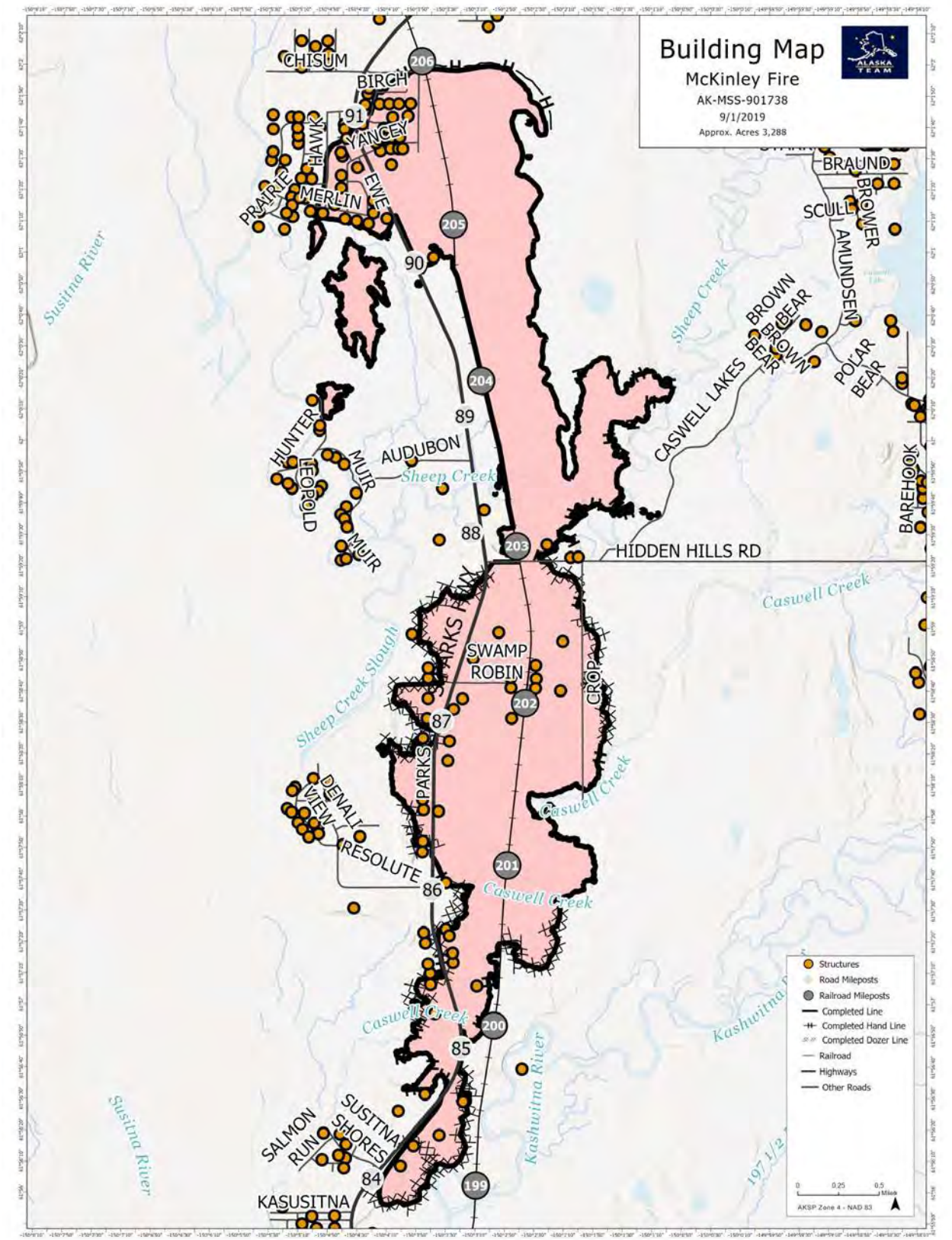
⇒ 174,596 gallons of water dropped
⇒ 46,307 gallons of retardant dropped
⇒ 67.5 flight hours
⇒ 33.5 rotor wing
⇒ 34.0 fixed wing
⇒ UAS FLIR

MALASPINA AIR SUMMARY

⇒ 58,408 gallons of water dropped
⇒ 23,528 gallons of retardant dropped
⇒ 35.3 flight hours
⇒ 11.6 rotor wing
⇒ 23.7 fixed wing
⇒ UAS FLIR

Photos retrieved from Baker River Hotshots Facebook page on 7/17/2019. Information Stats and Financials provided by Northwest Incident Management Team 12 working for Department of Natural Resources- Division of Forestry.

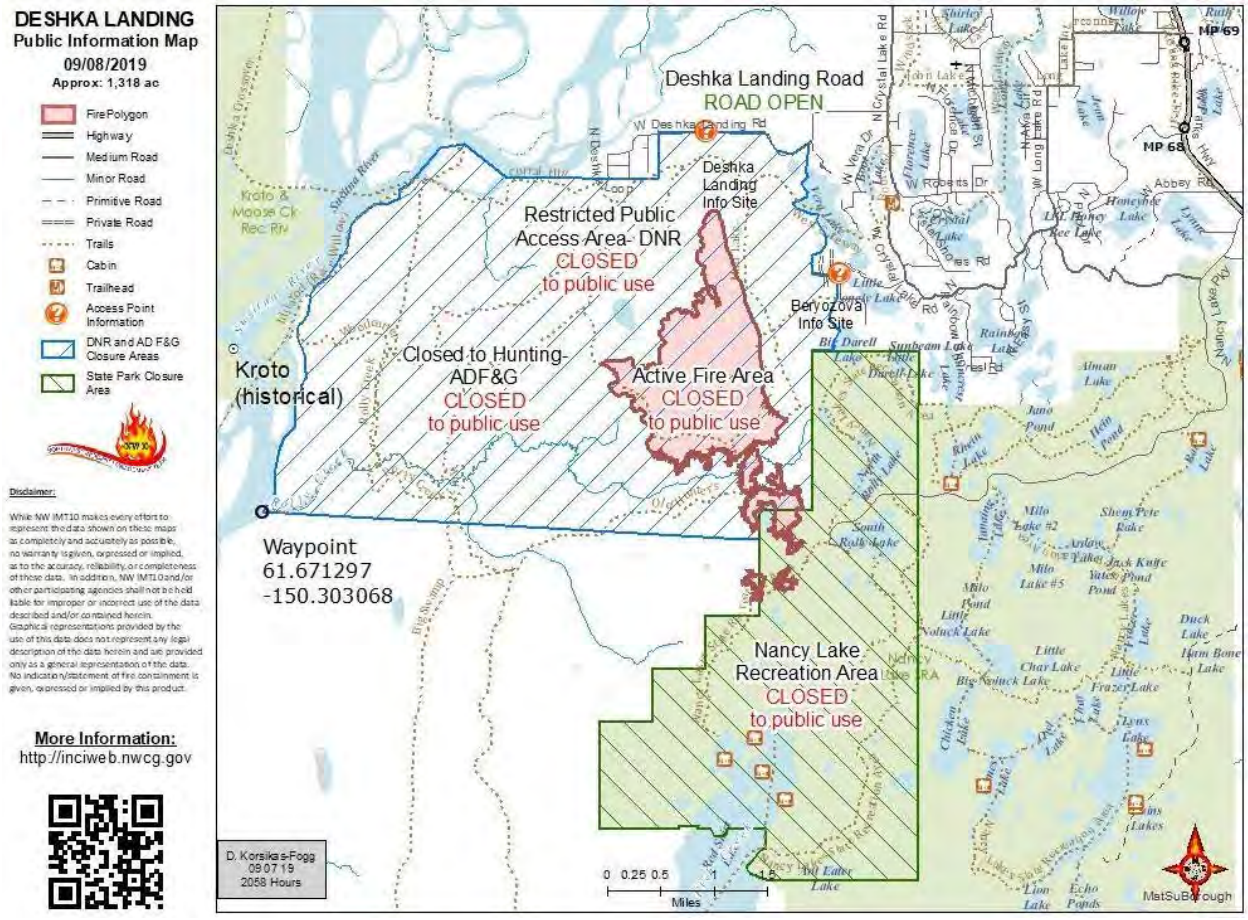
Figure 40. Building Map for McKinley Fire



A story map of the fire can be viewed at: https://nifc.maps.arcgis.com/apps/MapSeries/index.html?appid=efa18adc74714e089dd91fd3a9bb70bf. There is a link on the first page of the story map with the McKinley Fire drone footage showing burn intensities, blowdown, and damage. There is also an 11-minute video of the fire that can be viewed at: https://www.youtube.com/watch?v=5j1LRvPGO7Y&feature=youtu.be. Pictures of the fire can be viewed at: https://akfireinfo.com/2019/09/24/mckinley-fire-final-slideshow-management-back-to-palmer-forestry-thursday-26-2019/.

The 1,318-acre Deshka Landing Fire, which started August 17, 2019, five miles south of Willow remained at 95% containment as of September 9, 2019 when management of the fire was turned over to the Alaska DNR, DOF's Borough Forestry Office. The Deshka Landing Fire was a human-caused fire which spread rapidly to the south with a strong wind event. The initial attack involved smoke jumpers aided by two Alaska hand crews, the Tanana Chiefs (Figure 41) and the Gannett Glacier Crew. Fuels involved were timber, brush, and short grass as well as beetle killed spruce and mixed hardwoods.

Figure 41. Public Information Map for Deshka Landing Fire



5.3.6.5 Location, Extent, Impact, and Recurrence Probability

Location

Nearly every community in the Borough contains an area designated for limited protection from fire. Fire risk includes damage to structures, property, and loss of life in every community. Figure 42 shows the State's wildfire hazard areas.

Extent

Generally, fire vulnerability dramatically increases in the late summer and early fall as vegetation dries out, decreasing plant moisture content, and increasing the ratio of dead fuel to living fuel. However, various other factors, including humidity, wind speed and direction, fuel load and type, and topography can contribute to the intensity and spread of land fires. The common causes of land fires in Alaska include lightning strikes and human negligence.

Climate and fire data confirm that fire season length and fire severity have increased with the recent ambient temperature increases. Another outcome of the warmer climate trend is the arrival of earlier than normal "snow-free" dates. This translates to an earlier spring fire season. The fire season for the Borough typically occurs from April to September, with the greatest fire activity occurring between May and June, when live fuel moisture is dry from the winter freeze, and high-pressure weather systems bring higher temperatures and lower humidity conditions (DOF, 2008).

Fuel, weather, and topography influence fire behavior. Fuel (e.g., slash, dry undergrowth, flammable vegetation) determines how much energy the fire releases, how quickly the fire spreads, and how much effort is needed to contain the fire. Weather is the most variable factor. High temperatures and low humidity encourage fire activity while low temperatures and high humidity retard fire spread. Wind affects the speed and direction of fire spread. Topography directs the movement of air, which also affects fire behavior.

The fuels in the Borough are mostly in transition from thick, green forests to decaying dead spruce. Spruce forests, whether live or dead, are both flammable and provide radiant heat and ember spot fires that advance fire through air convection.

Impact

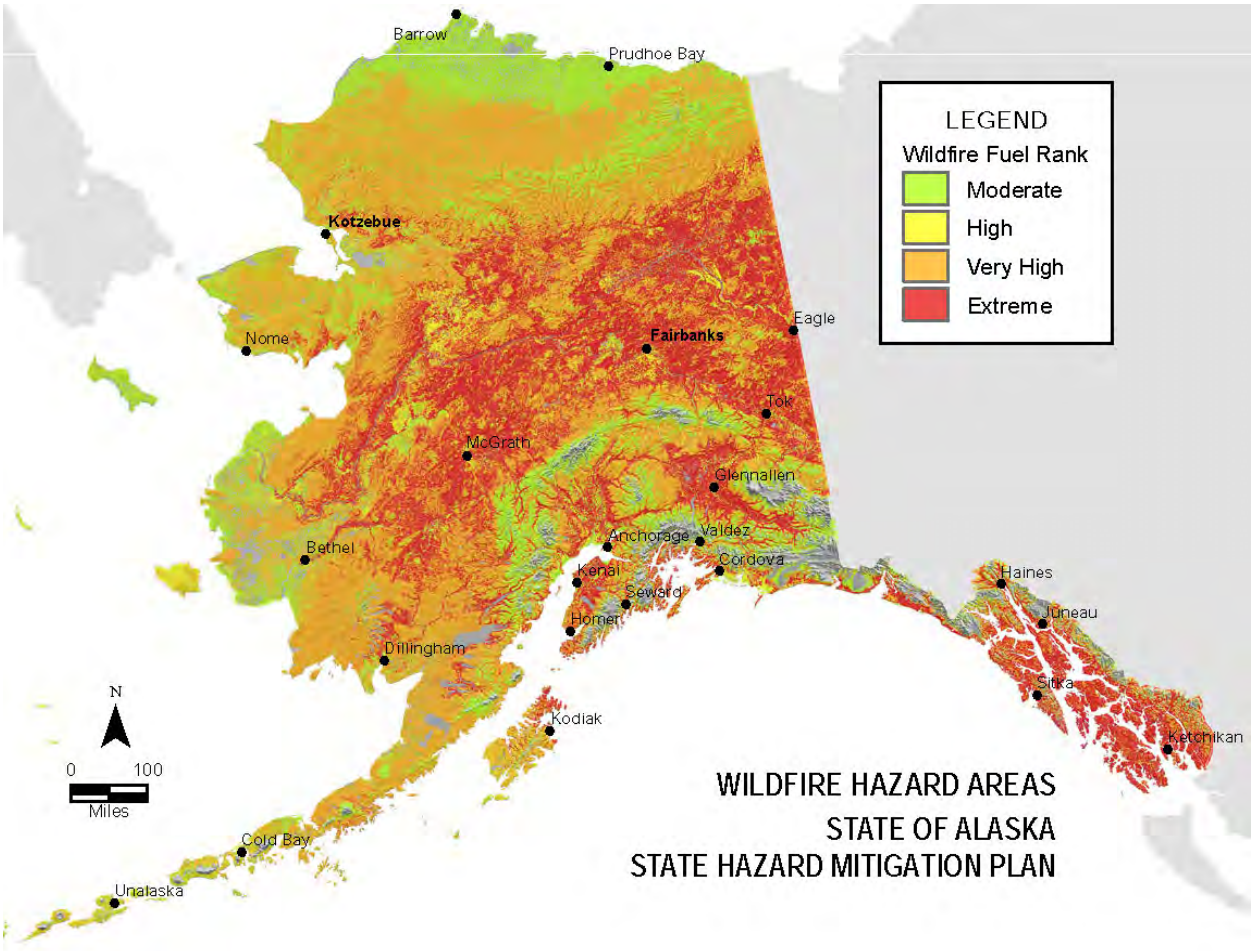
As of November 23, 2019, wildfires burned more than 2.68 million acres in the 2019 wildfire season in Alaska. The cost of fighting 2019's wildfires topped $300 million, and state and local officials say the final tally may not be known for years (ADN, 2019a). This total does not include the cost to Alaskans who saw their land torched and their homes burned. Through November 21, DOF recorded $224.9 million in firefighting expenses for 2019. The U.S. Department of Interior reported $72 million.

Recurrence Probability

Increased community development, fire fuel accumulation, and weather pattern uncertainties indicate that seasonal fires will continue into the future. Future residents will experience similar experiences at an increased rate than current residents due to changes in the

cryosphere and an increase in spruce-bark beetle. The probability of future events is highly likely based on an annual occurrence.

Figure 42. Borough's Wildland Fire Risk



6.0 Vulnerability Analysis

This section provides an overview of the vulnerability analysis.

6.1 Overview of a Vulnerability Analysis

A vulnerability analysis predicts the exposure extent that may result from a given hazard event and its impact intensity within the Borough. This qualitative analysis provides data to identify and prioritize potential mitigation measures by allowing the community to focus attention on areas with the greatest risk. A vulnerability or risk analysis is divided into the following five focus areas:

1. Asset Inventory;
2. Infrastructure Risk, Vulnerability, and Losses from Identified Hazards;
3. Development Changes and Trends;
4. Data Limitations; and
5. Future Development Considerations.

DMA 2000 requirements for developing risk and vulnerability assessment initiatives are described below.

DMA 2000 Requirements: Risk Assessment, Assessing Vulnerability, Overview

Assessing Vulnerability: Overview

§201.6(c)(2)(ii): The risk assessment shall include a] description of the jurisdiction's vulnerability to the hazards described. This description shall include an overall summary of each hazard and its impact on the community. The plan should describe vulnerability in terms of:

§201.6(c)(2)(ii)(A): The types and numbers of existing and future buildings, infrastructure, and critical facilities located in the identified hazard areas;

§201.6(c)(2)(ii)(B): An estimate of the potential dollar losses to vulnerable structures identified in paragraph (c)(2)(ii)(A) of this section and a description of the methodology used to prepare the estimate.

§201.6(c)(2)(ii)(C): Providing a general description of land uses and development trends within the community so that mitigation options can be considered in future land use decisions.

Element

- Does the updated plan include a description of the jurisdiction's vulnerability to each hazard?
- Does the updated plan include an overall summary description of the jurisdiction's vulnerability to each hazard?
- Does the updated plan describe vulnerability in terms of the types and numbers of existing buildings, infrastructure, and critical facilities located in the identified hazard areas?
- Does the updated plan describe vulnerability in terms of the types and numbers of future buildings, infrastructure, and critical facilities located in the identified hazard areas?
- Does the updated plan estimate potential dollar losses to vulnerable structures?
- Does the updated plan describe the methodology used to prepare the estimate?

Source: FEMA, 2015.

DMA 2000 Requirements: Risk Assessment, Assessing Vulnerability, Addressing Repetitive Loss

Properties Assessing Vulnerability: Addressing Repetitive Loss Properties

Requirement §201.6(c)(2)(ii): [The risk assessment] must also address NFIP Insured structures that have been repetitively damaged by floods.

Element

- Does the updated plan describe vulnerability in terms of the types and numbers of repetitive loss properties in the identified hazard areas?
- Does the updated plan address each jurisdiction's participation in the NFIP and continued compliance with NFIP requirements as appropriate?

Source: FEMA, 2015.

6.2 Current Asset Exposure Analysis

6.2.1 Critical Asset Infrastructure

Assets that may be affected by hazard events include population (for community-wide hazards), residential buildings, and critical facilities and infrastructure. Assets are grouped into two structure types: critical infrastructure and residential properties. The assets and associated values throughout the Borough are identified and discussed in detail in the following subsections.

DMA 2000 Recommendations: Risk Assessment, Assessing Vulnerability, Identifying Structures

Assessing Vulnerability: Identifying Structures

Requirement §201.6(c)(2)(ii)(A): The plan should describe vulnerability in terms of the types and numbers of existing and future buildings, infrastructure, and critical facilities located in the identified hazard area.

Element

- Does the updated plan describe vulnerability in terms of the types and numbers of existing buildings, infrastructure, and critical facilities located in the identified hazard areas?
- Does the updated plan describe vulnerability in terms of the types and numbers of future buildings, infrastructure, and critical facilities located in the identified hazard areas?

Source: FEMA, 2015.

6.2.1.1 Critical Infrastructure

Critical infrastructure is defined as a facility that provides essential products and services to the general public, such as preserving quality of life while fulfilling important public safety, emergency response, and disaster recovery functions. Critical facilities and infrastructure for the Borough are profiled in this HMP Update and include the following (see also Table 17):

- Government: Borough administrative offices, departments, or agencies;
- Emergency Response: fire personnel services and fire-fighting equipment;
- Health Care: hospitals, medical clinics, congregate living, health, residential and continuing care, and retirement facilities; and
- Community Gathering Places.

Table 17. Alaska's Critical Infrastructure

• Hospitals, Clinics, & Assisted Living Facilities	• Satellite Facilities	• Power Generation Facilities	• Oil & Gas Pipeline Structures & Facilities	• Schools
• Fire Stations	• Radio Transmission Facilities	• Potable Water Treatment Facilities	• Service Maintenance Facilities	• Community Washeterias
• Police Stations	• Highways and Roads	• Reservoirs & Water Supply Lines	• Community Halls & Civic Centers	• National Guard Facilities
• Emergency Operations Centers	• Critical Bridges	• Waste Water Treatment Facilities	• Community Stores	• Landfills & Incinerators
• Any Designated Emergency Shelter	• Airports	• Fuel Storage Facilities	• Community Freezer Facilities	• Community Cemeteries
• Telecommunications Structures & Facilities		• Harbors / Docks / Ports		

DMA 2000 Recommendations: Estimating Potential Losses

Assessing Vulnerability: Estimating Potential Losses

Requirement §201.6(c)(2)(ii)(B): [The plan should describe vulnerability in terms of an] estimate of the potential dollar losses to vulnerable structures identified in paragraph (c)(2)(ii)(A) of this section and a description of the methodology used to prepare the estimate.

Element

- Does the updated plan estimate potential dollar losses to vulnerable structures?
- Does the updated plan describe the methodology used to prepare the estimate?

Source: FEMA, 2015.

6.2.1.2 Infrastructure Risk, Vulnerability, and Losses from Identified Hazards

Tables 18 and 19 provide a summary of critical facilities in the Borough and critical facilities located in the floodplain, respectively.

Table 18. Critical Facilities

Number of Critical Facilities	Property Acres	Land Appraisal	Building Appraisal	Total Land & Building Appraisal
188	9,615	$50,845,900	$1,217,196,766	$1,268,042,666

Table 19. Critical Facilities in Flood Zones

Flood Zone	Type	Name	Land Appraisal	Building Appraisal	Total Land & Building Appraisal
1% chance/yr	Utility	Talkeetna Lift Station at G & Gliska	N/A	N/A	N/A
1% chance/yr	Utility	Talkeetna Pump House Building	N/A	N/A	N/A
1% chance/yr	Utility	Talkeetna Water Treatment Plant	N/A	N/A	N/A
1% chance/yr	Train Depot	Talkeetna Winter Train Depot	N/A	N/A	N/A
0.2% chance/yr	Public Safety	Jones PSB 11-1	$117,100	$950,000	$1,067,100

0.2% chance/yr	Public Safety	NPS Talkeetna Ranger Station	$104,100	$999,600	$1,103,700
0.2% chance/yr	Airport	Talkeetna Airport	N/A	N/A	N/A
0.2% chance/yr	Utility	Talkeetna Lift Station at Airport 3rd & D	N/A	N/A	N/A
0.2% chance/yr	Utility	Talkeetna Lift Station at Latitude 62 Restaurant	N/A	N/A	N/A
0.2% chance/yr	Utility	Talkeetna Sewer & Water Lagoons	$100,000	$9,300,000	$9,400,000
0.2% chance/yr	Train Depot	Talkeetna Summer Train Depot	N/A	N/A	N/A

See Figure 43 for a critical facilities map. Table 20 summarizes the results of the vulnerability analysis. Table 21 shows landownership within the Borough. Tables 22 and 23 identify property values based on community area within the Borough and their vulnerabilities to hazard events. Table 24 breaks out the number of residential structures within the Borough by structure type.

6.2.1.3 Land Use and Development Trends

Requirements for land use and development trends, as stipulated in DMA 2000 and its implementing regulations, are described below.

DMA 2000 Recommendations: Risk Assessment, Assessing Vulnerability, Analyzing Development Trends

Assessing Vulnerability: Analyzing Development Trends

Requirement §201.6(c)(2)(ii)(C): [The plan should describe vulnerability in terms of] providing a general description of land uses and development trends within the community so that mitigation options can be considered in future land use decisions.

Element

- Does the updated plan describe land uses and development trends?

Source: FEMA, 2015.

Lands within the Borough are subject to subdivision and zoning ordinances contained in Borough Code Section 17. There is one Aviation Overlay District and 14 Residential Overlay Districts that have elected to form residential land use districts that restrict development. Prime farmland is located around Palmer, Point MacKenzie, and the Fish Creek Area. There are three Single Family Residential Land Use Districts, nine Special Zoning Districts (SpUDs) (three have subdistrict SpUDs in the Borough, each with its own Comprehensive Plan). See Figures 44-46.

The Borough is expected to continue to expand as the fastest growing area in Alaska, increasing 58% by 2045, according to state labor practices (ADN, 2019b). The state's population grew by 0.4% on average each year from 2010 to 2018, with the majority of growth in the Anchorage/Borough regions. The Borough's growth rate was the fastest at an average of 2.1% annually during the past eight years — more than five times the statewide average (ADOL, 2019). Housing units continue to be constructed. Table 24 lists the number of structures identified by the Borough Assessor's Office from 2013-2019 by structure type.

Figure 43. Critical Facilities Map

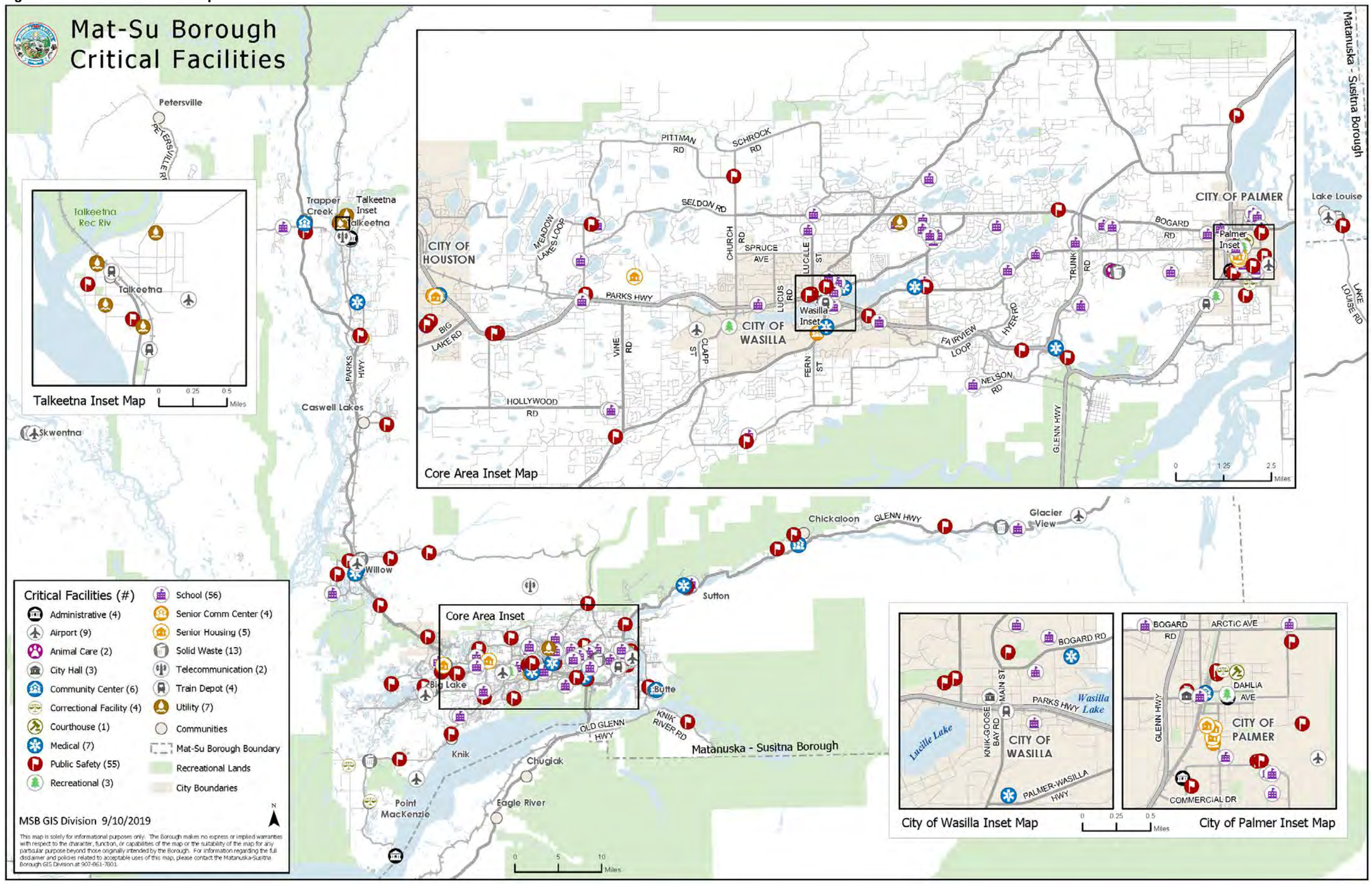


Table 20. Hazard Vulnerability Analysis

	Earthquake	Severe Weather	Wildland & Conflagration Fires	Volcanic Ash Fall	Flood/ Erosion	Changes to the Cryosphere
History	High	Moderate	High	Low	High	Low
Vulnerability	High	Moderate	High	Moderate	High	High
Probability	Highly Likely	Highly Likely	Highly Likely	Likely	Low throughout most of Borough with a few likely hazard areas	Low throughout most of Borough with a few highly likely hazard areas
Location	Structures within the 100 sq. mile "core area" have the most intense Modified MMI levels on the shake maps. In 2019, 86% of Borough residents lived in subdivisions and neighborhoods outside the City Limits of Wasilla and Palmer.	Entire Borough	Entire Borough	Mostly within the "core area" near the southern boundary	Flooding is in valleys. Erosion for wind is valleys. Erosion for water is river, creek, and stream banks.	The slopes throughout the Hatcher Pass area and the slope of Pioneer Peak between Goose Creek and the Knik River Bridge are well-known avalanche areas in the Borough. There are no homes at Hatcher Pass. Homes along the Old Glenn Highway outside of Palmer have been relocated out of the danger zone. Droughts and an increase of spruce-bark beetle could increase the fire risk Borough-wide.
At-Risk Pop. **At-Risk Buildings** **At-Risk Building Value**	In general, the entire Borough is at risk depending on the community's location to the known fault lines. Refer to the shake maps that show differing results across the Borough (Figures 16-20).	In general, the entire Borough is at risk regardless of location. The January 2020 cold snap of below zero temperatures was non-discriminating.	Some areas within the Borough have higher propensities to fire based on spruce-bark beetle infestation (Figure 32). Fire could occur in other	Wind direction is an important factor on which areas of the Borough would be affected. At this moment based on current volcano eruptions, the "core area" is most at risk, but this could change	Special flood hazard areas show areas vulnerable to flooding.	This is very difficult to quantify.

			areas, but the blue highlighted areas have the most fuel.	depending on the wind direction and location of the erupting volcano.		

Risk Assessment						
Consequence to People	Injuries or death from structural collapse; fires; secondary diseases due to poor sanitation.	Injuries or death from structural collapse, prolonged exposure to low temperatures. Injury caused by flying debris; hardship due to disruption of vital services, transportation, utilities.	Injuries or death due to fire, heat, smoke and structure collapse.	Illness & death from respiratory distress; injuries & death caused by accidents due to lower visibility.	Respiratory distress due to flying dust, reduced visibility may cause injury & death; sudden water erosion.	Injury & death, hardship due to disruption of essential services, loss of shelter.
Consequence to Property	Structural damage to buildings, fuel supplies, communications, utilities, emergency facilities.	Damage to roofs, utility lines, disruption of fuel and essential supplies, disruption of communications.	Structural damage to buildings, loss of critical facilities, loss of power lines.	Structural damage due to weight of ash, damage to electronic equipment & machinery.	Wind erosion removes top soil; Water erosion under cuts foundations, footings, and stream banks.	Downed utility lines, damage to structures, vehicles & equipment.
Consequence to Environment	Alteration of landforms, water degradation due to fuel spills; fire, landslides.	Possible damage to flora & fauna.	Pollution of streams and lakes, loss of vegetative cover; injury & death of fauna.	Damage to plants caused by lower solar penetration, or suffocating layer of ash.	Pollution of streams and lakes.	Damage to flora & fauna; degradation of water quality.

Table 21. Borough Land Ownership

Owner	Acre	Percent of Total Area
State Government & Other	15,170,726	94%
Borough Government	215,040	1%
Private	413,722	3%
Alaska Native	324,265	2%
Total	16,123,753	100%

Due to an increased awareness of hazards on a national level and increased public education by the Borough, the vulnerability of the Borough since the last HMP was approved may have slightly decreased. However, not all flood hazards have been mapped. Best practices are encouraged in floodplain areas that haven't yet been mapped due to unintended consequences elsewhere. The Borough continues to educate its population on hazards with no regulations in the hope of its residents making wise decisions when constructing residential homes. Building inspections are conducted in regard to earthquake hazards if the building is being financed. If private funding is used, the Borough has no enforcement capability to ensure construction occurs to code. Building compliance is of concern when selling properties. Deconstruction inspections, although useful in identifying some deficiencies, is a sampling, and is not representative of a complete inspection.

6.2.1.4 Data Limitations

The vulnerability estimates provided herein use the best data currently available, and the methodologies applied result in a risk approximation. These estimates may be used to understand relative risk from hazards and potential losses. However, uncertainties are inherent in any loss estimation methodology, arising in part from incomplete scientific knowledge concerning hazards and their effects on the built environment as well as the use of approximations and simplifications that are necessary for a comprehensive analysis.

It is also important to note that the quantitative vulnerability assessment results are limited to the exposure of people, buildings, and critical facilities and infrastructure to the identified hazards. It was beyond the scope of this HMP to develop a more detailed or comprehensive assessment of risk (including annualized losses, people injured or killed, shelter requirements, loss of facility/system function, and economic losses). Such impacts may be addressed with future updates of this HMP.

Table 22. Property Value by Borough Community Area in 2019

City & Community Council Names	Parcel Count	Acres	Land Appraisal	Building Appraisal	Total Land & Building Appraisal	Number of Structures
Big Lake	5,999	82,632	$225,249,200	$392,717,909	$617,967,109	3,641
Buffalo Mine/Soapstone	674	17,242	$27,828,000	$55,875,550	$83,703,550	587
Butte	2,252	169,258	$68,376,700	$241,853,202	$310,229,902	1,737
Chase	1,538	227,730	$11,330,100	$3,858,234	$15,188,334	241
Chickaloon	922	94,817	$22,055,600	$19,672,996	$41,728,596	408
Farm Loop	1,174	6,164	$74,478,500	$220,113,196	$294,591,696	1,107
Fishhook	2,381	41,837	$123,092,400	$371,622,168	$494,714,568	2,209
Gateway	2,562	16,228	$212,579,100	$716,621,625	$929,200,725	2,229
Glacier View	2,115	917,215	$26,462,200	$37,845,950	$64,308,150	463
Greater Palmer	1,903	6,104	$109,328,900	$400,480,840	$509,809,740	1,855
Houston	2,094	16,158	$49,880,900	$153,654,828	$203,535,728	1,158
Knik-Fairview	9,177	54,645	$375,716,700	$1,441,439,778	$1,817,156,478	7,612
Lazy Mountain	984	25,819	$41,842,000	$108,193,600	$150,035,600	809
Louise, Susitna, & Tyone Lakes	1,117	183,377	$23,822,800	$10,871,850	$34,694,650	503
Meadow Lakes	5,936	40,857	$229,288,100	$671,165,692	$900,453,792	4,718
North Lakes	3,992	10,286	$228,067,500	$804,770,956	$1,032,838,456	3,895
Palmer	2,555	4,110	$153,468,100	$640,842,071	$794,310,171	2,189
Petersville	906	133,967	$7,081,100	$6,826,383	$13,907,483	261
Point Mackenzie	1,655	103,986	$65,612,900	$281,979,850	$347,592,750	439
Skwentna	4,484	710,048	$25,398,000	$16,925,750	$42,323,750	864
South Knik River	890	58,803	$14,362,700	$38,397,300	$52,760,000	474
South Lakes	2,127	4,638	$169,167,300	$539,773,725	$708,941,025	2,172
Susitna	5,870	389,173	$111,469,600	$141,700,450	$253,170,050	2,090
Sutton	1,127	22,471	$25,518,100	$73,997,800	$99,515,900	632
Talkeetna	2,727	269,694	$66,924,600	$116,947,688	$183,872,288	1,333
Tanaina	3,337	14,810	$152,924,700	$593,824,300	$746,749,000	3,359
Trapper Creek	2,247	181,684	$40,915,300	$32,968,408	$73,883,708	790
Wasilla	4,080	9,081	$356,405,900	$1,114,760,089	$1,471,165,989	3,565
Willow	6,133	299,608	$197,411,000	$242,290,900	$439,701,900	3,094
None	25,189	12,011,306	$162,010,800	$102,792,983	$264,803,783	1,715
Borough Totals	**108,147**	**16,123,747**	**$3,398,068,800**	**$9,594,786,071**	**$12,992,854,871**	**56,149**

Table 23. Property Value by General Ownership within the Borough in 2019

General Ownership	Parcel Count	Acres	Land Appraisal	Building Appraisal	Total Land & Building Appraisal	Number of Structures
Borough	1,905	215,042	$160,431,100	$1,019,634,500	$1,180,282,547	236
City	218	2,173	$27,127,300	$74,531,100	$101,660,791	114
Cooperative	84	265	$5,418,700	$20,572,000	$25,991,049	20
Federal	80	4,420	$7,750,000	$9,902,400	$17,656,900	14
Mental Health	230	39,123	$31,122,500	$292,700	$31,454,553	5
Native Corporation	1,128	324,265	$124,714,700	$63,700	$125,103,793	8
Private	72,560	413,722	$2,891,110,900	$8,408,656,676	$11,300,253,858	55,516
Public University	141	24,767	$34,298,800	$15,030,132	$49,353,840	8
State	2,068	161,522	$115,981,300	$46,102,863	$162,247,753	228
Other	29,732	14,938,454	$113,500	$0	$15,081,686	0
Totals	108,146	16,123,753	$3,398,068,800	$9,594,786,071	$13,009,086,770	56,149

Table 24. Number of Structures within the Borough by Type, 2013-2019

Year	Single Family	Residential with Garage	Mobile Home	Duplex	Triplex	Four-Plex	Detached Four-Plex	Group Quarters	Residential Under Construction	Commercial/Other
2013	40,834	5,876	1,438	745	505	401	170	9	198	4,004
2014	41,004	5,899	1,444	749	522	458	170	9	199	4,071
2015	41,463	5,947	1,458	771	543	596	170	9	207	4,135
2016	41,880	5,988	1,461	806	568	794	171	9	214	4,184
2017	42,063	6,016	1,473	815	573	830	174	9	216	4,283
2018	42,409	6,057	1,481	816	578	850	174	9	225	4,348
2019	42,574	6,086	1,484	834	579	863	178	9	233	4,388

Figure 44. Borough SpUDs

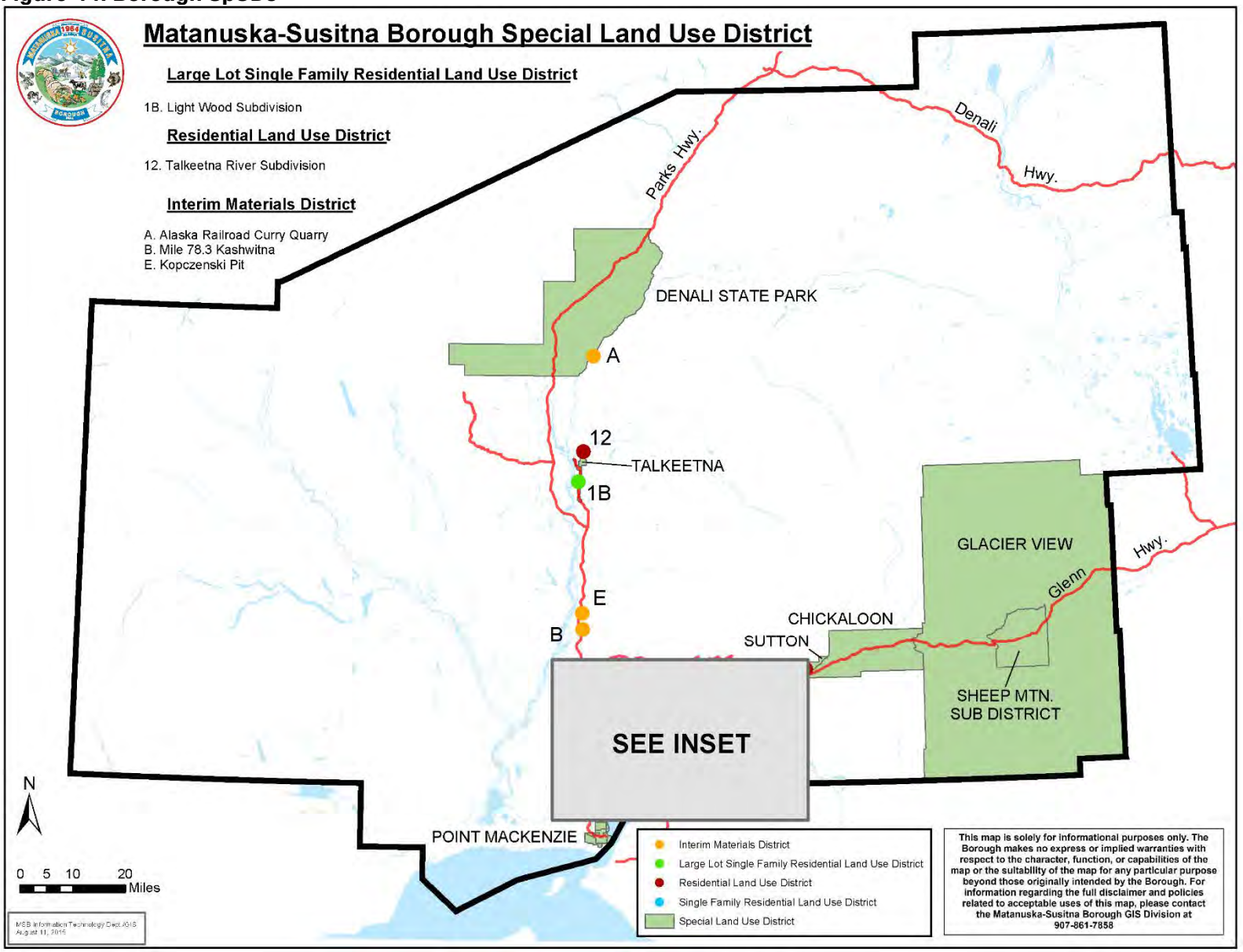


Figure 45. Inset for Figure 44

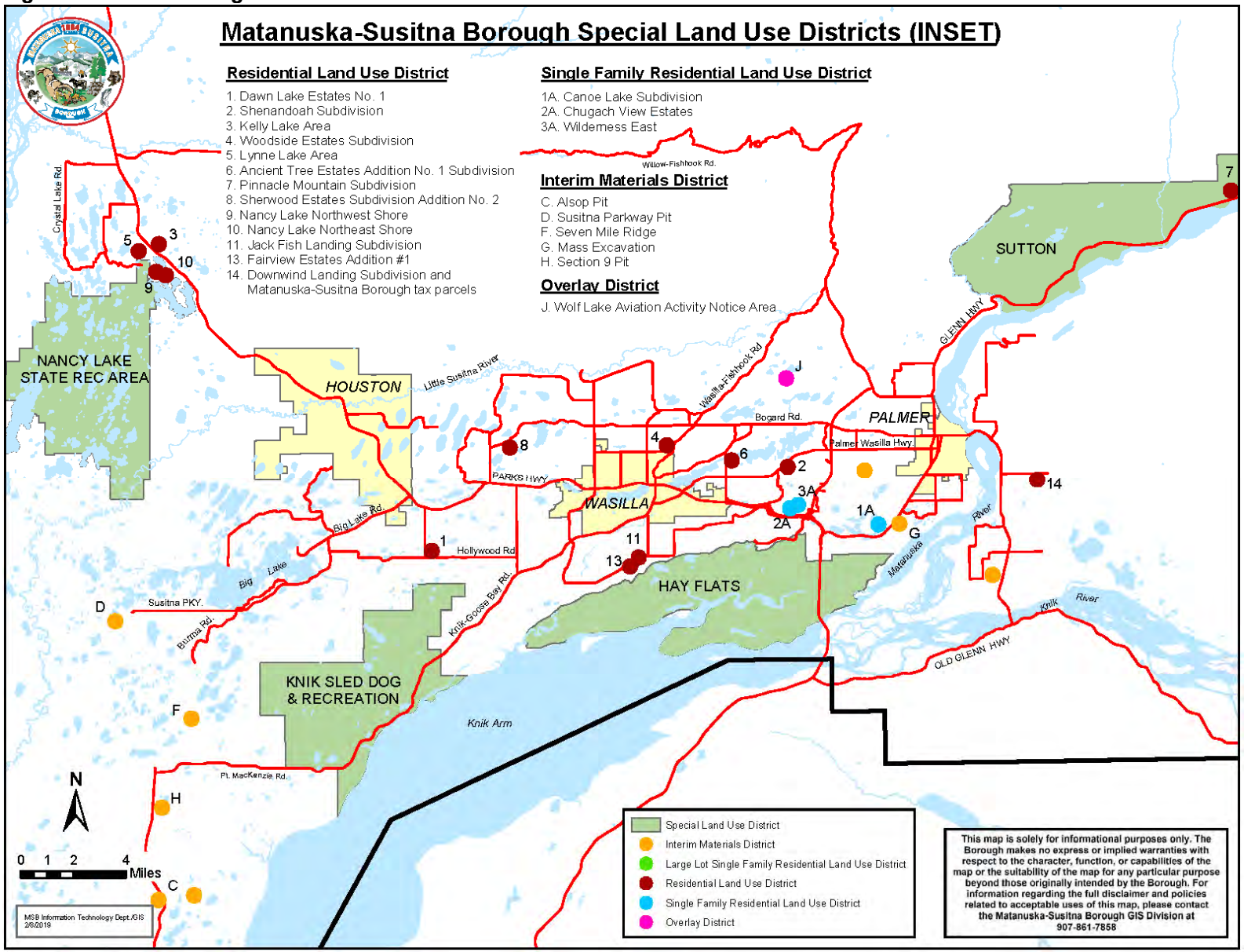
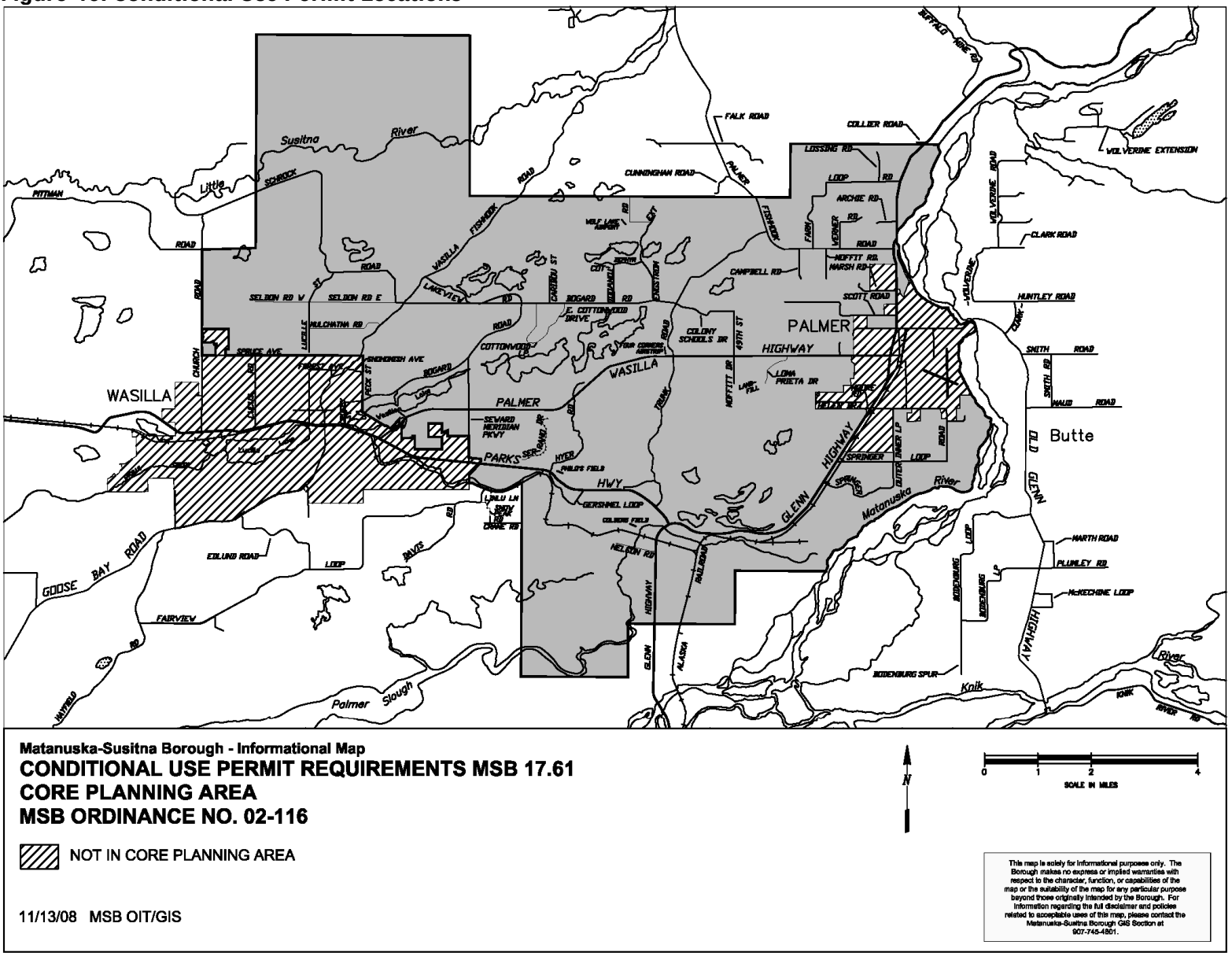


Figure 46. Conditional Use Permit Locations



7.0 Mitigation Strategy

A mitigation strategy provides the blueprint for implementing desired activities that will enable the Borough to continue to save lives and preserve infrastructure by systematically reducing hazard impacts, damages, and community disruptions. This section outlines the process for preparing a mitigation strategy including:

1. Develop Mitigation Goals to mitigate the hazards and risks identified (see Sections 5 and 6).
2. Identify Mitigation Actions to meet the Mitigation Goals.
3. Evaluate Mitigation Actions.
    a. Describe and analyze Local mitigation policies, programs, and funding sources.
    b. Evaluate Federal and State hazard management policies, programs, capabilities, and funding sources.
4. Implement the MAP.

The goal of all mitigation is the reduction of risk. Accordingly, the primary purpose of this HMP Update is to identify strategies for increasing the level of protection from vulnerability to natural hazards experienced by residents and visitors within the Borough. All other goals and objectives are in support of this purpose.

It is challenging to address a comprehensive HMP for the entire Borough considering that it encompasses a land mass larger than the state of West Virginia but lacking some of the infrastructure normally expected in a jurisdiction of that size. A “do-it-yourself” frontier attitude, typical of most Alaskan communities prevails. Residents tend to consider the Borough to be made up of small rural communities without much need for government intervention. This is beginning to change. Increasing pressures caused by growing population, especially the increased number of commuters who, rather than seeing much of the Borough as rural, have turned the southern, more densely populated areas into a suburban bedroom community. This has shaped their expectations regarding services and amenities.

Portions of the Borough have experienced the negative repercussions of not having a mitigation strategy. Repetitive losses, such as the continual erosion of the banks of the Matanuska River require long range planning. The challenge of securing funding for these projects is as constant as the river. In 1970, the first Borough-wide Comprehensive Plan was developed and adopted by the Assembly. Alaska statute requires that a local community’s comprehensive plan address, at a minimum, three issues: land use, transportation, and public facilities. The 2005 update to the Comprehensive Plan addressed those issues and added six others, including natural and man-made hazards. Comprehensive plans have been developed for distinct regions of the Borough with regard to land use development, infrastructure, and the economy. SpUDs have been established to identify and meet specific, local needs. The Borough’s planners and land use managers are working closely with each community, maintaining an open dialogue to identify shared goals.

Hazard mitigation considerations are integrated into future planning activities in accordance with the goals and policies set forth in Policy PM-1 as set forth in the Planning Method section

of the Borough's Comprehensive Plan which states: "Continue the use of four general planning categories to address the various planning needs of residents and communities; the general planning categories being: state and federal, Borough-wide and regional, community, and specialty or functional plans." Long- and short-range strategies were identified in the 2013 HMP to reflect the 2005 Comprehensive Plan's goal to address the issue of mitigation from Borough-wide and specialty/functional perspectives and updated in this 2020 HMP Update.

Planners, public works managers, and emergency coordinators from each of the Borough's jurisdictions collaborated in all aspects of this HMP Update. Corresponding Borough personnel assisted in development of plans for each jurisdiction as well. Because hazards do not stop at the city limits, these entities will continue to work collaboratively to implement common plans to mitigate common hazards. Funding will be applied accordingly to support mitigation projects that benefit all Borough residents.

Because the following goals, objectives, and actions were formulated by a multi-jurisdictional team, they are meant to apply to all jurisdictions within the Borough unless otherwise designated. They also apply to all hazards identified. Objectives are identified as short-range: achievable within three to five years; long range: requiring from five to ten years to accomplish; and ongoing.

Currently, selection of Capital Improvement Projects relies on a nomination process. Borough departments, Community Councils, and other entities are afforded the opportunity to nominate projects utilizing a standard format. The projects are reviewed annually by the Planning Department and prioritized by the Borough Assembly. Funding is predicated on a project's position on the annual Capital Improvement Projects priority list.

7.1 Developing Mitigation Goals

Requirements of hazard mitigation goals, as stipulated in DMA 2000 and its implementing regulations, are described below.

DMA 2000 Requirements: Mitigation Strategy – Hazard Mitigation Goals

Local Hazard Mitigation Goals

Requirement §201.6(c)(3)(i): [The hazard mitigation strategy shall include a] description of mitigation goals to reduce or avoid long-term vulnerabilities to the identified hazards.

Element

- Does the plan include a description of mitigation goals to reduce or avoid long-term vulnerabilities to the identified hazards?

Source: FEMA, 2015.

The exposure analysis results were used as a basis for developing the mitigation goals and actions. Mitigation goals are defined as general guidelines that describe what a community wants to achieve in terms of hazard and loss prevention. Goal statements are typically long-range, policy-oriented statements representing community-wide visions. As such, goals were developed to reduce or avoid long-term vulnerabilities to identified hazards (Table 25).

Table 25. Mitigation Goals

No.	Goal Description
Multi-Hazards (MH)	
MH 1	Ensure residents of and visitors to the Borough are aware of their vulnerability to natural hazards and know how to mitigate the effects and prepare for emergency response.
MH 2	Strengthen partnerships between the Borough, other jurisdictions, and agencies serving Borough residents.
MH 3	Utilize Borough governmental powers to integrate hazard mitigation into all development planning.
MH 4	Reduce vulnerability to repetitive power outages.
Natural Hazards	
FL 1	Eliminate vulnerability to flooding (FL) within the Borough.
FL 2	Decrease the financial losses caused by floods.
FL 3	Improve habitat preservation and stream enhancement.
ER 1	Reduce property damage caused by wind or water erosion (ER).
SW 1	Mitigate vulnerability to severe weather (SW) within the Borough.
SW 2	Strengthen the ability of public facilities to withstand SW.
WF 1	Reduce the fire (F) danger in the WUI.
WF 2	Improve the fire suppression capability of Borough firefighters.
WF 3	Use the Borough Assembly's legislative power to institutionalize fire mitigation measures in Borough code.
EQ 1	Increase public awareness of how to survive an earthquake (EQ).
EQ 2	Promote adoption of building codes to require earthquake-resistant construction practices and materials.
CC 1	Eliminate the loss of life and assets due to changes in the cryosphere.
V 1	Reduce health problems caused by volcanic ash (V).
V 2	Reduce property damage caused by volcanic ash.

7.2 Identifying Mitigation Actions

Requirements for identification and analysis of mitigation actions, as stipulated in DMA 2000 and its implementing regulations, are described below.

DMA 2000 Requirements: Mitigation Strategy - Identification and Analysis of Mitigation Actions

Identification and Analysis of Mitigation Actions

Requirement §201.6(c)(3)(ii): [The mitigation strategy shall include a] section that identifies and analyzes a comprehensive range of specific mitigation actions and projects being considered to reduce the effects of each hazard, with particular emphasis on new and existing buildings and infrastructure.

Element

- Does the updated plan identify and analyze a comprehensive range of specific mitigation actions and projects for each hazard?
- Do the identified actions and projects address reducing the effects of hazards on new buildings and infrastructure?
- Do the identified actions and projects address reducing the effects of hazards on existing buildings and infrastructure?

Source: FEMA, 2015.

After mitigation goals and actions were developed, the Project Team assessed the potential mitigation actions to carry forward into the mitigation strategy. Mitigation actions are activities,

measures, or projects that help achieve the goals of an HMP. Mitigation actions are usually grouped into three broad categories: property protection, public education and awareness, and structural projects. The Project Team placed particular emphasis on projects and programs that reduce the effects of hazards on both new and existing buildings and infrastructure. These potential projects are listed in Table 27.

The Project Team reviewed the simplified social, technical, administrative, political, legal, economic, and environmental (STAPLEE) evaluation criteria (Table 26) and the Benefit-Cost Analysis Fact Sheet (Appendix E) to consider the opportunities and constraints of implementing each particular mitigation action. For each action considered for implementation, a qualitative statement is provided regarding the benefits and costs and, where available, the technical feasibility. A detailed cost-benefit analysis is anticipated as part of the application process for those projects the Borough chooses to implement.

Table 26. Evaluation Criteria for Mitigation Actions
Social, Technical, Administrative, Political, Legal, Economic, and Environmental (STAPLEE)

Evaluation Category	Discussion "It is important to consider…"	Considerations
Social	The public support for the overall mitigation strategy and specific mitigation actions.	Community acceptance Adversely affects population
Technical	If the mitigation action is technically feasible and if it is the whole or partial solution.	Technical feasibility Long-term solutions Secondary impacts
Administrative	If the community has the personnel and administrative capabilities necessary to implement the action or whether outside help will be necessary.	Staffing Funding allocation Maintenance/operations
Political	What the community and its members feel about issues related to the environment, economic development, safety, and emergency management.	Political support Local champion Public support
Legal	Whether the community has the legal authority to implement the action, or whether the community must pass new regulations.	Local, Tribal, State, and Federal authority Potential legal challenge
Economic	If the action can be funded with current or future internal and external sources, if the costs seem reasonable for the size of the project, and if enough information is available to complete a FEMA Benefit-Cost Analysis.	Benefit/cost of action Contributes to other economic goals Outside funding required FEMA Benefit-Cost Analysis
Environmental	The impact on the environment because of public desire for a sustainable and environmentally healthy community.	Effect on local flora and fauna Consistent with community environmental goals Consistent with Local, Tribal, State, and Federal laws

On January 15, 2020, the Project Team considered each hazard's history, extent, and probability to determine each potential action's priority. A rating system based on high, medium, or low was used. High priorities are associated with actions for hazards that impact the community on an annual or near annual basis and generate impacts to critical facilities and/or people. Prioritizing the mitigation actions in the MAP Matrix was completed after the online open house to provide the Borough with an approach to implementing the MAP. Table 28 defines the mitigation action priorities.

Table 27. Mitigation Goals and Potential Actions

Goals		Actions	
No.	**Description**	**ID**	**Description**
MH 1	Ensure residents of and visitors to the Borough are aware of their vulnerability to natural hazards and know how to mitigate the effects and prepare for emergency response.	1.1. Provide educational materials directly to the public. Implementation of these projects is achievable within the short-term and is ongoing.	Develop portable, durable, and professional quality displays for use at fairs and special events.
			Partner with community service agencies to identify and learn how to best reach populations with special needs.
			Target the business community through the Think AHEAD program in partnership with the Small Business Development Council and the Red Cross. 2020 Update: This program has ended. This action will be deleted in the 2025 HMP Update.
			Use the Citizen Corps programs, Community Emergency Response Team, and Neighborhood Watch, as a means of disseminating information and training.
			Continue to use the Alaska State Fair as a major educational opportunity.
			Re-design the exhibits in the Project Impact trailer and ask a pro-active group to bring it to fairs and schools, expanding the hazard education outreach program. 2020 Update: This program has ended. This action will be deleted in the 2025 HMP Update.
			Distribute materials at special events such as Iditarod Days, Fourth of July, Emergency Preparedness Expo annually in September, Colony Days, Founders' Days, Earth Day, Willow Winter Carnival, and Health Fairs.
			Commemorate Arbor Day, the anniversary of the Good Friday Earthquake, or Millers Reach Fire or Sockeye Fire with appropriate public education messages in local media.
			Place literature in venues visited by tourists and residents.
			Review all development applications for flood zone designations.
			Disseminate flood preparedness information through fire stations, public libraries, and other Borough offices.
			Attend community meetings to discuss hazards, mitigation, and recovery.
		1.2. Utilize the internet as a tool for reaching target audiences (short-term and on-going actions).	Strengthen the presence of disaster mitigation and emergency preparedness information on the Borough's website.
			Maintain sampling of residents' opinions on mitigation issues utilizing an interactive version of the mitigation survey.
			Update Borough information on social media outlets such as Facebook and Twitter to keep the public advised on pending storms and current disaster events.

Goals		Actions	
No.	**Description**	**ID**	**Description**
			Provide emergency information to include issues of seasonal urgency such as flood watch, weather, fire danger, etc.
			Provide links to other organizations and educational resources such as the LEPC, Red Cross, NOAA (weather), AVO (volcano), earthquake, etc.
MH 2	Strengthen partnerships between the Borough, other jurisdictions, and agencies serving Borough residents.	2.1. Work with the School District, private schools, and home school networks to introduce mitigation education into school curricula (long-range).	Identify needs for improvement of subject matter and delivery (short-range).
			Assist with development and provision of resources and materials (short-range).
			Encourage local community resident participation through Community Councils (short range).
		2.2. Work with the Red Cross and the Salvation Army to evaluate emergency shelters to ensure they are appropriately secured and supplied (short-range and ongoing).	Ensure emergency shelters have emergency power.
			Add functional needs shelters and pet-friendly shelters.
			Educate the public about shelters and evacuation protocols.
		2.3. Establish lines of communication with incorporated cities.	Work with cities to help ensure responsible development within flood-prone areas.
		2.4. Work with agencies to design, construct, and inspect flood protection infrastructure.	Develop mitigation actions.
		2.5. Work with FEMA to ensure accurate and complete mapping of flood-prone areas.	2020 Update: FIRMS were updated in 2019.
MH 3	Utilize Borough governmental powers to integrate hazard mitigation into all development planning.	3.1. Keep the HMP updated.	Make mitigation planning a regular part of the Planning Commission, Historic Preservation Commission, and Community Council activities.
			Incorporate mitigation measures into comprehensive development plans.
			Work with the Borough's GIS department to improve hazard mapping.
			Continue to involve Community Councils to solicit input for future mitigation projects, and anticipate future needs.
			Maintain a list of mitigation projects to enable taking advantage of funding opportunities on short notice.
MH 4	Reduce vulnerability to repetitive power outages.	4.1. Explore the feasibility of alternate power systems.	Implement a system of distributed power systems to provide individual incentives through the process of "net metering."
			Encourage localized power generation through alternative means such as wind turbines.
FL 1	Eliminate vulnerability to floods within the Borough.	1.1. Increase accuracy of flood zone maps (long range).	Apply for FEMA support to update FIRMs. 2020 Update: FIRMS were updated in 2019. Now complete. This action will be deleted in the 2025 HMP Update.

Goals		Actions	
No.	**Description**	**ID**	**Description**
			Determine new base flood elevation in "approximate A" zones. 2020 Update: FIRMS were updated in 2019. Now complete. This action will be deleted in the 2025 HMP Update.
			Re-map areas where erosion has changed floodplain characteristics. 2020 Update: FIRMS were updated in 2019. Now complete. This action will be deleted in the 2025 HMP Update.
			Track damage reports in unmapped areas during high water events.
			Identify and map areas outside of FIRMs that are subject to flooding.
		1.2. Maintain flood watch protocols for rivers and streams (ongoing).	Request that the State of Alaska include the Matanuska and Susitna Rivers. 2020 Update: There is now a Borough Flood Watch Program.
			Coordinate the chain of flood information including local observers, DOT, Public Works, and the media.
			Develop signs for installation at strategic river and creek road crossings whenever conditions threaten flooding.
			Monitor snowpack for advance awareness of possible flood conditions.
		1.3. Reduce the vulnerability of structures within flood zones (short- to long-range).	Survey existing structures at risk to identify ownership and feasibility of mitigation measures.
			Regulate all construction in known flood hazard areas.
			Ensure critical facilities are built above the 500-year (0.2% annual chance of flooding) floodplain.
			Encourage all structures to be elevated 2 feet above the Base Flood Elevation.
			Seek 100% compliance with Borough 17.29 Flood Damage Prevention.
		1.4. Identify mitigation measures to prevent flooding (short-range).	Survey culverts and perform needed upgrades and replacements.
			Clear debris from culverts and narrow stream passages.
			Increase level of storm drain management.
			Maintain revetments and dikes.
FL 2			Encourage owners of homes and businesses at risk to purchase flood insurance.

Goals		Actions	
No.	**Description**	**ID**	**Description**
	Decrease the financial losses caused by floods.	2.1. Participate in federal and state programs designed to aid communities such as the NFIP and the Community Rating System which adjusts insurance rates based on mitigation measures undertaken by the community (short-range).	Coordinate flood mitigation measures in compliance with DCEED's standards for participation in the programs.
FL 3	Improve habitat preservation and stream enhancement.	3.1. Support bank stabilization and debris clearance (short-range).	Encourage maintenance of a vegetative buffer adjacent to streams or rivers to help absorb flood waters and prevent erosion.
			Participate in state or federal programs which support this objective.
			Install adequately-sized culverts.
ER 1	Reduce property damage caused by wind or water erosion.	1.1 Limit construction in areas vulnerable to riverine erosion (long-range).	Adopt in Borough code restrictions on new building construction in areas vulnerable to erosion.
		1.2. Educate the public about actions they can take to reduce erosion on private property.	Provide information about public and government structural and nonstructural erosion control options.
		1.3 Establish state-appointed advisory boards for the Matanuska and Susitna Rivers similar to the advisory board for the Kenai River Special Management Area (long-term).	Charge the advisory boards with determining how to reduce erosion and flooding property damage.
SW 1	Mitigate vulnerability to severe weather within the Borough.	1.1. Adopt standards for residential construction for snow load and wind resistance for new construction on a regionally-appropriate basis throughout the Borough (long-range).	Enlist participation of building professionals and Borough resources to formulate standards appropriate to local conditions.
			Create a regional hazard map to show builders the varying wind, snow load, temperature, flood threats, and erosion hazards.
			Conduct an education campaign to develop a constituency in favor of adopting building codes for new construction.
			Empower a means for enforcing compliance with the codes.
		1.2. Encourage opportunities for builders and home remodelers to learn to build to snow load and wind-resistant standards (short-range).	Utilize methodologies identified in the all-hazards education portion of this HMP to disseminate information to target audiences.
			Provide classes in partnership with existing builders' groups.
		1.3. Educate the public about how to survive winter weather (short-range).	Support the initiatives described in the education component of this HMP.
SW 2		2.1. Initiate mitigation measures against wind damage (short- and long-range).	Conduct an engineering review of existing structures built with public funds including storage sheds, pavilions, and greenhouses.

Goals		Actions	
No.	**Description**	**ID**	**Description**
	Strengthen the ability of public facilities to withstand severe water.		Design new structures to higher wind speed standards for securing roofing materials and accessories beyond the International Building Code prescribed minimums. Consider alternatives to loose-laid roof membrane.
			Install wind deflection structures like tree screens or earth berms.
			Install stronger than code minimum light standards and flag poles in high wind areas.
			Convert hydronic heat media from water to glycol.
			Install auxiliary generators to power heating plants without loss of primary electric service.
			Install reinforced continuous hinges on all exterior doors. Add strapping or anchor systems to structures where needed.
		2.2. Initiate mitigation measures against snow and ice damage (short and long range).	Provide structural capacity in excess of UBC minimums over large clear-span areas such as school gyms with low-slope roofs.
			Provide structural roofs over meters and equipment exposed to falling ice and snow at exterior doors.
			In high snowfall areas of the Borough, design structures to mitigate damage of roof-mounted equipment. Similarly, decisions to hold snow on a roof or to allow it to shed must consider vulnerability of the area beneath the eaves.
WF 1	Reduce the wildfire danger in the WUI.	1.1. Support the Spruce-Bark Beetle Wildland Fire Mitigation Program (short range).	Identify areas of fuel loading in the wildland/urban interface.
			Clear the hazard trees in proximity to homes and right of way to provide line of defense in partnership with the State DOF and private sector businesses and land owners. Establish a means for homeowners to dispose of cleared brush in cooperation with the Borough landfill and transfer sites.
		1.2. Qualify the Matanuska-Susitna Borough as a FireWise community (short range).	Bring the concept of defensible space to every subdivision in the Borough.
			Assist homeowners in clearing fire hazards from around their homes.
			Create demonstrations of FireWise landscaping at public buildings.
			Ensure FireWise communities are no larger than the number of homes that can collaboratively clear fire hazards from the areas around their homes.
		1.3. Sensitize children to wildland fire issues (short range).	Develop a partnership with the School District.
			Reinforce concepts of FireWise through summer library programs and non-traditional learning opportunities.

Goals		Actions	
No.	**Description**	**ID**	**Description**
WF 2	Improve the fire suppression capability of Borough firefighters.	2.1. Ensure sufficient resources are available (ongoing).	Continue Borough Assembly appropriations to support necessary fire suppression capabilities throughout the Borough, including areas beyond the borders of current fire service districts.
			Support engineering study of dry hydrant system.
			Identify and improve alternate road access for fire suppression equipment.
			Require that subdivisions have more than one entry road.
WF 3	Use the Borough Assembly's legislative power to institutionalize fire mitigation measures in Borough code.	3.1. Encourage development of a Borough building code (long range).	Adopt fire safety building standards for materials and construction.
		3.2. Eliminate the sale and use of fireworks in the Borough (short and long range).	Enforce Borough code banning fireworks.
			Increase signage and advertising to alert the public to the illegality and danger of fireworks.
		3.3. Reduce fuel wood on Borough lands with salvage sales of beetle infested/killed spruce.	New in 2020.
EQ 1	Increase public awareness of how to survive an EQ.	1.1. Implement education strategies (short-range).	Distribute brochures to public venues, tourist centers, and health care facilities.
			Engage the school district as a partner to educate children.
EQ 2	Promote adoption of building codes to require earthquake-resistant construction practices and materials.	2.1. Work with government and private sector to draft realistic and enforceable building codes which address the ability of a structure to withstand a serious quake (short- and long-range).	Garner public support through public demonstrations of survivability and economic benefits of safe building practices.
			Promote dissemination of seismic retrofit information to owners of homes and commercial properties.
		2.2. Strengthen all public structures in the Borough against earthquake damage (short- and long-range).	Conduct a survey of all structures owned and utilized by Borough government to determine seismic survivability and retrofit as necessary.
			Pay special attention to seismic safety of coal bed methane distribution infrastructures.
CC 1	Eliminate the loss of life and assets due to changes in the cryosphere.	1.1. Support an aggressive avalanche education program (ongoing).	Utilize the local media to alert residents and visitors of danger and provide instruction for personal protection.
		1.2. Prohibit future development in known avalanche zones (short- and long-range).	Include this prohibition in Borough code.
V 1	Reduce health problems caused by volcanic ash.	1.1. Deliver public information about the dangers of volcanic ash fall and ways to remain safe (short range).	Distribute brochures to public venues, tourist centers, and health care facilities.
			Engage the school district as a partner to educate children about ash fall.
			Continue support of Air Quality Alert phone number (352-DUST).
			Utilize the local media to alert residents and visitors of danger and provide instruction for personal and property protection.

Goals		Actions	
No.	**Description**	**ID**	**Description**
V 2	Reduce property damage caused by volcanic ash.	1.2. Deliver public information about the dangers of volcanic ash fall to structures and electrical and mechanical equipment (short range).	Utilize local media and brochures to alert residents and tourists alike to enable protective measures to mitigate damage to vehicles, computers, and other equipment.
			Provide ash clean-up and disposal instructions.

7.2.1 Evaluating and Prioritizing Mitigation Actions

Requirements for the evaluation and implementation of mitigation actions, as stipulated in DMA 2000 and its implementing regulations, are described below.

The Project Team reprioritized the planning actions with fire being the first priority, earthquake being the second priority, flooding/erosion being the third priority, and severe weather being the fourth priority.

DMA 2000 Requirements: Mitigation Strategy - Implementation of Mitigation Actions

Implementation of Mitigation Actions

Requirement: §201.6(c)(3)(iii): [The mitigation strategy section shall include] an action plan describing how the actions identified in Section (c)(3)(ii) will be prioritized, implemented, and administered by the Local Government. Prioritization shall include a special emphasis on the extent to which benefits are maximized according to a cost benefit review of the proposed projects and their associated costs.

Element

- Does the updated mitigation strategy include how the actions are prioritized?
- Does the updated mitigation strategy address how the actions will be implemented and administered?
- Does the updated prioritization process include an emphasis on the use of a cost-benefit review to maximize benefits?

Source: FEMA, 2015.

7.3 Implementing a Mitigation Action Plan

Requirements for Local Government policies in mitigation strategies, as stipulated in DMA 2000 and its implementing regulations, are described below.

DMA 2000 Requirements: Mitigation Strategy

Implementation of Mitigation Actions

Requirement: §201.6(c)(3)(iii): [The mitigation strategy section shall include]: an action plan describing how the actions will be prioritized, implemented, and administered by the Local jurisdiction. Prioritization shall include a special emphasis on the extent to which benefits are maximized according to a cost benefit review of the proposed projects and their associated costs.

Element

- Does the plan contain a mitigation action plan?

Source: FEMA, 2015.

Table 28 shows the Borough's MAP Matrix that shows how the mitigation actions were prioritized, how the overall benefit/costs were taken into consideration, and how each mitigation action will be implemented and administered by the Project Team.

If no mitigation actions from Table 28 are implemented, the Borough will continue to be vulnerable to all hazards identified in Section 5 and the risks associated with those hazards in Section 6. If mitigation actions from Table 28 are implemented, the Borough will become a resilient community that is prepared for potential hazards identified and profiled in Section 5 and the risks associated with those hazards in Section 6.

Many mitigation projects within the Borough will depend on cooperative efforts between the Borough, individual cities, and State and Federal agencies. Additionally, in the current updating

process of the Borough's 2005 Comprehensive Plan, the impacts of natural hazards are considered in the siting of new facilities and infrastructure.

Table 28 contains statuses, priorities, responsible agencies, potential funding sources, and timelines for mitigation actions selected to be implemented.

Table 28. Borough Mitigation Action Plan
(See acronym and abbreviations list for complete titles on pages viii to x)

Action ID	Description	Priority	Responsible Department	Potential Funding	Timeframe	Benefit-Costs / Technical Feasibility	2020 Update
MH 1	Utilize the internet and social media as a tool for reaching target audiences to communicate hazard specific information throughout the cycle of an event.	High	Borough PIO and DES	Borough	Ongoing; the Borough has increased its use of the internet and social media as a means to gain and communicate information before, during, and after a disaster.	Provides current information to all with internet access. The public must be kept up to date on issues. A firm policy for the PIO needs to be in place so that it cannot be discretionary as to the who, how, when, etc.	The Borough conducted a public survey online in June/July 2019. 721 residents responded, and the Borough is incorporating their feedback into its emergency procedures.
MH 2	Work with the Red Cross and the Salvation Army to evaluate emergency shelters to ensure they are appropriately secured, supplied, and identified.	High	Borough DES Emergency Manager	Borough DES and Red Cross	Ongoing	Provides secure sheltering and feeding for disaster survivors and responder families.	Emergency shelters have been identified. The Red Cross and Salvation Army continue to monitor supply levels.
MH 3	Utilize Borough governmental powers to integrate hazard mitigation into all development planning.	High	Borough Lead Planner	Borough	Ongoing	Integrating plans into a Borough approach is a top goal of the Borough.	Will incorporate 2020 HMP Update into 2020 Comprehensive Plan updating process.
MH 4	Update the Core Areas Comprehensive Plan with a natural hazard section.	High	Borough Lead Planner	Borough	2025	Integrating natural hazard sections into Community Council plan updates is a top goal of the Borough.	Will incorporate 2020 HMP Update into the Core Areas Comprehensive Plan updating process.
F 1	Identify areas of fuel loading in the WUI.	High	DOF	Borough Planning, Emergency Services, participating Borough communities, DOF	2020-2025	Identification of hazard areas facilitates design and prioritization of mitigation actions.	Ongoing as new information becomes available. Figure 32 identifies observed spruce-bark beetle damage in the Borough from 2015 to 2018.

Action ID	Description	Priority	Responsible Department	Potential Funding	Timeframe	Benefit-Costs / Technical Feasibility	2020 Update
F 2	Clear the hazard trees in proximity to homes in partnership with the DOF, private sector businesses, and land owners.	High	DOF	DHS Preparedness Technical Assistance Program, HMGP	2020-2025	National statistics state that there is a $10 benefit for every $1 spent on wildfire mitigation.	Obtaining funding is a priority for DES.
F 3	Encourage subdivisions and neighborhoods to qualify as nationally recognized FireWise Communities.	High	Borough DES Manager	HMGP, FEMA, Homeowners Associations, Community Councils	2020-2025	Residents in a FireWise Community commit to maintaining FireWise standards. This is the most sustainable form of wildfire mitigation.	Horseshoe Lake became the first FireWise community within the Borough to have a Community Wildlife Protection Plan in 2019. Other communities are encouraged to evaluate their needs.
F 4	Ensure sufficient firefighting resources are available.	High	Borough Fire Chief	DES, PDM, HMGP	Ongoing	Sufficient fire suppression resources enable the saving of lives and property. Firefighting capability is a factor in a community's fire rating.	The Borough regularly evaluates, maintains, and improves firefighting resources, including hiring and training new personnel. The Borough spent roughly 17% of its budget on emergency services in 2019.
F 5	Develop and maintain Community Wildfire Protection Plans for Community Council areas in the Borough.	Medium	Community Councils	Borough, Homeowners Associations, Community Councils	Ongoing	Community Wildfire planning identifies and prioritizes areas of risk and engages landowners in actively protecting their property.	Horseshoe Lake became the first FireWise community within the Borough with a Community Wildlife Protection Plan in 2019.
EQ 1	Seismic Hazard Risk Mapping.	Medium	Borough Permit Center	FEMA, DGGS	Done.	Hazard mapping will help reduce risk to public infrastructure and housing developments.	FEMA RiskMap data was provided to the Borough in 2019. Shake maps were prepared.
EQ 2	Increase public awareness of how to survive an earthquake.	High	Borough Planner	Borough School District, DES, DHS&EM	Ongoing	A comprehensive earthquake safety program, delivered as appropriate to all ages and audiences will save lives.	The Borough has a preparedness page on its website with information on preparing for a natural disaster. Borough schools have periodic earthquake drills and discus earthquake safety. Additionally, the Borough participates in the

Action ID	Description	Priority	Responsible Department	Potential Funding	Timeframe	Benefit-Costs / Technical Feasibility	2020 Update
							Alaska Shield earthquake exercises, which promote earthquake preparedness throughout the State.
EQ 3	Promote adoption of building codes to require earthquake-resistant construction practices and materials.	High	Senior Planner in Borough Planning and Land Use	Borough	Ongoing	Seismic standard construction will increase survivability of occupants.	The Borough Fire Marshal enforces code compliance with International Building Codes, which includes standards for construction materials based on seismic loads.
FL 1	Increase accuracy of flood zone maps (long-range).	High	Senior Planner in Borough Planning and Land Use	FEMA	Ongoing	Increases ability to accurately manage zones of high flood hazards.	The FIRM maps were updated in 2019.
FL 2	Maintain flood watch protocols and use of hydrological gauges on rivers and streams.	High	Senior Planner in Borough Planning and Land Use	Borough, USGS	Ongoing	Provides early warning resulting in reduced losses and quicker response.	The USGS maintains hydrological gauges on rivers and streams throughout the Borough, including the Matanuska, Susitna, Little Susitna, Talkeetna, and Knik rivers and Montana and Willow creeks. The Borough has been increasing its funding of local stream gages for the last 5 years.
FL 3	Reduce vulnerability of structures within flood zones via demonstration projects of dredging, dike or levy systems, stream bank management.	Medium	Senior Planner in Borough Planning & Land Use, Public Works	Borough, DHS&EM, FEMA, NRCS	Ongoing	Reduces amount of vulnerable structures within Borough. Stream bank management has been determined to be the best option to implement.	As of Summer 2020, the FEMA and State Hazard Mitigation Grant Program for voluntary acquisitions included eight properties from the Butte and Sutton areas along the Matanuska River. Land will be deeded open space in perpetuity. Additionally, the State has a partnership to implement a

Action ID	Description	Priority	Responsible Department	Potential Funding	Timeframe	Benefit-Costs / Technical Feasibility	2020 Update
							Streambank Revitalization Program.
FL 4	Establish state appointed advisory boards for the Matanuska and Susitna Rivers similar to the advisory board for the Kenai River Special Management Area.	High	Senior Planner in Borough Planning & Land Use	State of Alaska	2025	Advisory board will help implement mitigation projects as well as river use guidelines in a special management area.	No advisory board was created. The Borough will try again in the next plan period.
FL 5	Wasilla Creek Bridge on Nelson Project (one-mile west/one-mile south of the Glenn Interchange).	High	Director of Public Works	Borough, PDM and HMGP projects	2025	Project engineers will develop BC/TF.	New in 2020
FL 6	Lucille Street Culvert Project at Locharren (Wasilla)	High	Director of Public Works	Borough, PDM and HMGP projects	2025	Project engineers will develop BC/TF.	New in 2020
FL 7	Sushana Drive over Little Susitna River (approximately 5 miles north of Wasilla)	High	Director of Public Works	Borough, PDM and HMGP projects	2025	Project engineers will develop BC/TF.	New in 2020
FL 8	Big Lake Jolly Creek Drainage Improvements Project	High	Director of Public Works	Borough, PDM and HMGP projects	2025	Project engineers will develop BC/TF.	New in 2020
FL 9	Have the Cities of Wasilla, Houston, and Palmer update their Memorandums of Understanding with the Borough.	High	Borough Floodplain Administrator	Borough	2025	This is an easy paperwork exercise to maintain Borough and City continuity.	New in 2020
FL 10	Capital projects needs funds to complete the work from the 2012 flood. Reevaluate 2012 damage that may not have been robustly mitigated. Evaluate whether water capacity increased.	High	Director of Public Works	Borough, PDM and HMGP projects	2025	Project engineers will develop BC/TF.	New in 2020
FL 11	Use flood depth grids for discussion before development.	High	Borough Floodplain Administrator	Borough	2025	This is an educational exercise between the Borough and its residents.	New in 2020. Data was developed as part of RiskMap program.
FL 12	Using RiskMap products that were developed in 2019, develop Values at Risk for Flooding by Hydro Unit to add to the HMP Update in 2025.	Medium	Borough Floodplain Administrator	Borough	2025	The data is available. Borough planners and GIS have technology.	New in 2020. Data was developed as part of RiskMap program.
FL 13	Develop and put forward an ordinance to restrict residential and non-residential building construction in the floodplain.	High	Borough Floodplain Administrator	Borough	2025	The Borough Permit Center has the resources to develop and the capability to work with the Assembly.	New in 2020

Action ID	Description	Priority	Responsible Department	Potential Funding	Timeframe	Benefit-Costs / Technical Feasibility	2020 Update
FL 14	Conduct a study to map the Cedars Subdivision as a potential future flood area. Depending on the size of the watershed, and length of stream, the various programs may be used.	High	Borough Floodplain Administrator	Borough	2025	The Borough Permit Center has the resources to develop and the capability to work with the Assembly.	New in 2020
FL 15	Educate Cedars Subdivision residents regarding the history of Hunter Creek flooding and potential hazard area concerns that they may face if the river moves.	High	Borough Floodplain Administrator	Borough	2025	The Borough Permit Center has the resources to develop and the capability to work with the Assembly.	New in 2020
FL 16	Add language to the platting code to identify natural hazards before subdivisions are platted.	High	Borough Floodplain Administrator	Borough	2025	The Borough Permit Center has the resources to develop and the capability to work with the Assembly.	New in 2020
FL 17	Add language in the subdivision construction manual to identify natural hazards.	High	Borough Floodplain Administrator	Borough	2025	The Borough Permit Center has the resources to develop and the capability to work with the Assembly.	New in 2020
FL 18	Continue to monitor repetitive loss properties for any substantial damage, and reach out to the property owners for any mitigation opportunities should they be interested. Additionally, the Borough will monitor for if the three properties come under tax foreclosure, and if so, will recommend retention by the Borough Assembly to mitigate the issues.	High	Borough Floodplain Administrator	Borough	2025	The Borough Permit Center has the resources to develop and the capability to work with the Assembly.	New in 2020
SW 1	Adopt standards for residential construction for snow load and wind resistance for new construction on a regionally appropriate basis throughout the Borough (long-range).	Medium	Director of Public Works	Borough, DHS&EM	2025	Increase structure and citizen survival rates during severe weather events utilizing new Risk Map data.	No standards were added.
CC 1	Support an aggressive avalanche education program.	High	Director of State Parks and Recreation and Borough Liaison	Borough, State Parks and Recreation	2022	Education about the risk of avalanches, avalanche safety, and conservative backcountry decision making has consistently proven to be effective at reducing the	Through Assembly resolution 2016-18, the Borough backed the Alaska Avalanche Information Center's efforts to install educational signs around

Action ID	Description	Priority	Responsible Department	Potential Funding	Timeframe	Benefit-Costs / Technical Feasibility	2020 Update
						number of fatalities from avalanches.	trailheads near high-avalanche-risk areas.
V 1	Deliver public information about the dangers of volcanic ash fall and ways to remain safe.	Medium	DES	Borough, DHS&EM, AVO	2021	Ensuring the public has knowledge of the risk and necessary preparation for a volcanic ashfall event will help residents protect themselves and reduce the necessary response after such an event.	Information about volcanic ash fall danger is undertaken by interagency cooperation between the NWS, DHS&EM, FAA, and the AVO through local communication networks and media outlets. The Borough may assist in reaching those who are not reachable by normal media and provide educational materials on preparation.

8.0 Plan Maintenance

This section describes a formal plan maintenance process to ensure that this HMP Update remains an active and applicable document. It includes an explanation of how the Borough's Project Team intends to organize their efforts to ensure that improvements and revisions to the HMP occur in a well-managed, efficient, and coordinated manner.

The following three process steps are addressed in detail here:

1. Monitoring, evaluating, and updating the HMP;
2. Implementation through existing planning mechanisms; and
3. Continued public involvement.

8.1 Monitoring, Evaluating, and Updating the HMP

Requirements for monitoring, evaluating, and updating the HMP, as stipulated in the DMA 2000 and its implementing regulations, are described below.

DMA 2000 Requirements: Plan Maintenance Process - Monitoring, Evaluating, and Updating the Plan

Monitoring, Evaluating, and Updating the Plan

Requirement §201.6(c)(4)(i, ii, and iii): [The plan maintenance process shall include a] section describing the method and schedule of monitoring, evaluating, and updating the mitigation plan within a five-year cycle; b] a process by which local government incorporates the requirements of the mitigation plan into other planning mechanisms such as comprehensive or capital improvement plans, when appropriate; and c] discussion on how the community will continue public participation in the plan maintenance process.

Element

- Does the updated plan describe the method and schedule of monitoring the plan, including the responsible department?
- Does the updated plan describe a system for monitoring implementation of mitigation measures and project closeouts?
- Does the updated plan describe the method and schedule for updating the plan within the five-year cycle?

Source: FEMA, 2015.

This HMP Update was prepared as a collaborative effort among the Project Team and LeMay Engineering & Consulting, Inc. To maintain momentum, the Borough will use the Project Team Lead (Borough Flood Management Coordinator) to monitor, evaluate, and update the HMP. Each authority identified in Table 28 will be responsible for implementing the MAP. The Borough Flood Management Coordinator will serve as the primary point of contact and will coordinate local efforts to monitor, evaluate, and revise the HMP.

Each member of the Project Team will conduct an annual review during the anniversary week of the HMP's official FEMA approval date to monitor the progress in implementing the HMP, particularly the MAP. As shown in Appendix F, the Annual Review Worksheet will provide the basis for possible changes in the MAP by refocusing on new or more threatening hazards, adjusting to changes to or increases in resource allocations, and engaging additional support for the HMP implementation. The Borough Flood Management Coordinator will initiate the annual review two months prior to the scheduled planning meeting date to ensure that all data is assembled for discussion with the Project Team. The findings from these reviews will be

presented at the annual Project Team Meeting. Each review, as shown on the Annual Review Worksheet, will include an evaluation of the following:

- Participation of authorities and others in the HMP implementation;
- Notable changes in the risk of natural hazards;
- Impacts of land development activities and related programs on hazard mitigation;
- Progress made with the MAP (identify problems and suggest improvements as necessary and provide progress reports on implemented mitigation actions); and
- The adequacy of local resources for implementation of the HMP.

A system of reviewing the progress on achieving the mitigation goals and implementing the MAP activities and projects will also be accomplished during the annual review process. During each annual review, each authority administering a mitigation project will submit a Progress Report to the Project Team. As shown in Appendix F, the report will include the current status of the mitigation project, including any changes made to the project, the identification of implementation problems and appropriate strategies to overcome them, and whether or not the project has helped achieve the appropriate goals identified in the HMP.

In addition to the annual review, the Project Team will update the HMP every five years. To ensure that this update occurs, in the fourth year following adoption of the HMP, the Project Team will undertake the following activities:

- Request grant assistance from DHS&EM and FEMA to update the HMP (this can take up to one year to obtain and one year to update the HMP);
- Thoroughly analyze and update the risk of natural hazards;
- Provide a new annual review (as noted above), plus a review of the three previous annual reviews;
- Provide a detailed review and revision of the mitigation strategy;
- Prepare an updated MAP for the Borough;
- Prepare an updated Draft HMP;
- Submit an updated Draft HMP to DHS&EM and FEMA for approval;
- Submit the DHS&EM- and FEMA-approved plan for adoption by the Borough Assembly; and
- Return the adoption resolution to FEMA to receive formal approval.

8.2 Implementation Through Existing Planning Mechanisms

Requirements for implementation through existing planning mechanisms, as stipulated in DMA 2000 and its implementing regulations, are described below.

DMA 2000 Requirements: Plan Maintenance Process - Incorporation into Existing Planning Mechanisms

Incorporation into Existing Planning Mechanisms

Requirements §201.6(c)(4)(ii): [The plan shall include a] process by which the Local Government integrates the HMP into other ongoing Borough planning efforts as well as other planning mechanisms such as comprehensive or capital improvement plans when appropriate.

Element

- Does the updated plan identify other planning mechanisms available for incorporating the mitigation requirements of the mitigation plan?
- Does the updated plan include a process by which the Borough government will incorporate the mitigation strategy and other information contained in the plan (e.g., risk assessment) into other planning mechanisms, when appropriate?

Source: FEMA, 2015.

After adoption of the HMP, each Project Team member will ensure that the HMP, in particular each Mitigation Action Project, is incorporated into existing planning mechanisms. Each member of the Project Team will achieve this incorporation by undertaking the following activities.

- Conduct a review of the community-specific regulatory tools to assess the integration of the mitigation strategy. These regulatory tools are identified in the capability assessment section (see Tables 29-31).
- Work with pertinent community departments to increase awareness of the HMP and provide assistance in integrating the mitigation strategy (including the MAP) into relevant planning mechanisms. Implementation of these requirements may require updating or amending specific planning mechanisms. For example, the 2005 Borough Comprehensive Plan is being updated at the present time. The Borough Floodplain Coordinator will ensure that the Lead Planner for the Comprehensive Plan has a copy of this HMP for integrating the MAP into the Comprehensive Plan.
- The Borough Planning Department will be responsible for providing a copy of this HMP to contractors focused on developing new or updating existing Local Plans and ensuring that this HMP is incorporated into plans as applicable.

Since this HMP is an update, the Borough integrated the previous HMP into the following planning mechanism: All of the Community Council plans prior to the previous HMP did not have a natural hazard section. Some Community Council plans have since been updated and now include a natural hazard section. Moving forward, the plan is to update the Core Areas Comprehensive Plan with a natural hazard section.

The Borough will involve the public through Facebook posts and continued surveys (Appendix F) to continually reshape and update this HMP. A paper copy of this HMP will be available at the Borough Permit Center. This HMP will also be stored on the State DCCED/DCRA's plans library online as well as the Borough's website for public reference. Planners are encouraged to integrate components of this HMP into their own plans.

The following tables outline the resources available to the Borough for mitigation related funding and training. The tables delineate the Borough's regulatory tools, technical specialists, and financial resource available for project management.

Table 29. Regulatory Tools

Regulatory Tools (ordinances, codes, plans)	Existing?	Comments (Year of most recent update; problems administering it, etc.)
Comprehensive Plan	Yes	Matanuska-Susitna Borough Comprehensive Plan Update in process.
Land Use Plan	Yes	Included in the Matanuska-Susitna Borough Comprehensive Plan Update, 2005.
Economic Plan	Yes	Economic Development Strategic Plan 2010- 2015. Comprehensive Economic Development Plan, 2013.
Emergency Utility Plan	No	
Emergency Response Plan, 2008	Yes	Updated 2010, limited resources and staff committed to administration.
Wildland Fire Protection Plan	Yes	Updated 2008.
Building codes	No	
Fire Insurance Rating	Yes	Fire insurance ratings based on level of service provided in individual fire service areas
Zoning ordinances	Yes	Updated annually, no land use requirements related to natural hazards
Subdivision ordinances or regulations	Yes	Does not address seismic hazard
Special purpose ordinances	No	
Transportation Plan	Yes	Matanuska-Susitna Borough Long-Range Transportation Plan, Updated 2007 addresses land and transportation management.

Local Resources

The Borough has a number of planning and land management tools that will allow it to implement hazard mitigation activities. The resources available in these areas have been assessed by the Project Team and are summarized below.

Table 30. Technical Specialists for Hazard Mitigation

Staff/Personnel Resources	Y/N	Department/Agency and Position
Planner or engineer with knowledge of land development and land management practices	Yes	Departments of Public Works and Planning and Land Use
Engineer or professional trained in construction practices related to buildings	Yes	Department of Public Works
Planner or engineer with an understanding of natural human-caused hazards	Yes	Department of Planning and Land Use
Floodplain Manager	Yes	Department of Planning and Land Use
Surveyors	Yes	Capital Projects Department
Staff with education or expertise to assess the jurisdiction's vulnerability to hazards	Yes	Multiple Departments
Personnel skilled in Geospatial Information System (GIS) and/or Hazards Us-Multi Hazard (Hazus-MH) software	Yes	Department of Information Technology
Scientists familiar with the hazards of the jurisdiction	Yes	Department of Planning and Land Use
Emergency Manager	Yes	Emergency Services Department

Grant Writers	Yes	Departments of Planning and Land Use, Emergency Services
Public Information Officer	Yes	Administration

The following table includes additional information on existing Borough authority, policies, and programs.

Table 31. Financial Resources

Funding Resources	Y/N	Has the source been used in the past? Could it be used in the future?
Capital Improvement Project Funding	Yes	The CIP could be used to list capital improvements to protect public structures such as bridges and roads from future flooding and erosion events.
Authority to levy taxes for special purposes	Yes	The Borough has created special service areas along the Matanuska River to raise tax revenues for erosion mitigation projects.
Fees for water, sewer, gas, or electric services	Yes	The Borough collects service fees.
Impact fees for new development	Yes	The Borough is eligible to collect impact fees for new development.
Storm water utility fee	Yes	The Borough is eligible to collect storm water utility fees.
Incur debt through general obligation bonds and or special tax bonds	Yes	The Borough has sold voter approved general obligation bonds for roads and schools.
Community Development Block Grant	Yes	The Borough has received a CDBG to construct a warm storage building for Lake Louise Emergency Response Equipment.
Other federal funding programs	Yes	The Borough has received grants for FireWise Program Implementation.
State funding programs	Yes	The Borough received pre-disaster mitigation grant to draft the first mitigation plan and updates. The Borough is eligible for flood mitigation assistance and is a NFIP participant.

8.3 Continued Public Involvement

Requirements for continued public involvement, as stipulated in DMA 2000 and its implementing regulations, are described below.

DMA 2000 Requirements: Plan Maintenance Process - Continued Public Involvement

Continued Public Involvement

Requirement §201.6(c)(4)(iii): [The plan maintenance process shall include a] discussion on how the Government will continue public participation in the plan maintenance process.

Element

- Does the updated plan explain how continued public participation will be obtained?

Source: FEMA, 2015.

The Borough is dedicated to involving the public directly in the continual reshaping and updating of the HMP. A paper copy of the HMP and any proposed changes will be available at the Borough Permit Center. An address and phone number of the Borough Floodplain Manager to whom people can direct their comments or concerns will also be available at the Borough Permit Center.

The Borough gives handouts containing safety and emergency prevention information as well as Fire Wise pamphlets to the public. Community surveys will be provided intermittently on the Borough's Facebook and website to remind the community about the potential hazards

that could affect Borough residents as well as to provide an opportunity for the community to comment on their concerns. See Appendix F for a sample public opinion survey. Any public comments received regarding the HMP will be collected by the Borough Floodplain Manager, included in the annual report, and considered during future HMP updates.

The Project Team will continue to raise community awareness about the HMP and the hazards that affect the Borough.

Federal Resources

The Federal government requires Local Governments to have an HMP in place to be eligible for mitigation funding opportunities through FEMA such as the UHMA Programs and the HMGP. The Mitigation Technical Assistance Programs available to Local governments are also a valuable resource. FEMA may also provide temporary housing assistance through rental assistance, mobile homes, furniture rental, mortgage assistance, and emergency home repairs. The Disaster Preparedness Improvement Grant also promotes educational opportunities with respect to hazard awareness and mitigation.

- FEMA, through its Emergency Management Institute, offers training in many aspects of emergency management, including hazard mitigation. FEMA has also developed a large number of documents that address implementing hazard mitigation at the local level. Key resource documents are available from the FEMA Publication Warehouse (1-800-480-2520) and are briefly described here:
    - How-to Guides. FEMA has developed a series of how-to guides to assist States, communities, and Tribes in enhancing their hazard mitigation planning capabilities. The first four guides describe the four major phases of hazard mitigation planning. The last five how-to guides address special topics that arise in hazard mitigation planning such as conducting cost-benefit analysis and preparing multi-jurisdictional plans. The use of worksheets, checklists, and tables make these guides a practical source of guidance to address all stages of the hazard mitigation planning process. They also include special tips on meeting DMA 2000 requirements.
    - Post-Disaster Hazard Mitigation Planning Guidance for State and Local Governments. FEMA DAP-12, September 1990. This handbook explains the basic concepts of hazard mitigation and shows State, Tribal, and Local governments how they can develop and achieve mitigation goals within the context of FEMA's post-disaster hazard mitigation planning requirements. The handbook focuses on approaches to mitigation, with an emphasis on multi-objective planning.
    - Mitigation Resources for Success compact disc (CD). FEMA 372, September 2001. This CD contains a wealth of information about mitigation and is useful for State, Tribal, and Local government planners and other stakeholders in the mitigation process. It provides mitigation case studies, success stories, information about Federal mitigation programs, suggestions for mitigation measures to homes and businesses, appropriate relevant mitigation publications, and contact information.
    - A Guide to Federal Aid in Disasters. FEMA 262, April 1995. When disasters exceed the capabilities of State, Tribal, and Local governments, the President's disaster

assistance programs (administered by FEMA) is the primary source of Federal assistance. This handbook discusses the procedures and process for obtaining this assistance, and provides a brief overview of each program.

- The Emergency Management Guide for Business and Industry. FEMA 141, October 1993. This guide provides a step-by-step approach to emergency management planning, response, and recovery. It also details a planning process that businesses can follow to better prepare for a wide range of hazards and emergency events. This effort can enhance a business's ability to recover from financial losses, loss of market share, damages to equipment, and product or business interruptions. This guide could be of great assistance to a community's industries and businesses located in hazard prone areas.
- The FEMA Hazard Mitigation Assistance Guidance and Addendum, February 5, 2015. The guidance introduces the five HMA grant programs, funding opportunities, award information, eligibility, application and submission information, application review process, administering the grant, contracts, additional program guidance, additional project guidance, and contains information and resource appendices (FEMA, 2015).

- Department of Agriculture (USDA). Assistance provided includes: Emergency Conservation Program, Non-Insured Assistance, Emergency Watershed Protection, Rural Housing Service, Rural Utilities Service, and Rural Business and Cooperative Service.
- Department of Energy (DOE), Office of Energy Efficiency and Renewable Energy, Weatherization Assistance Program. This program minimizes the adverse effects of high energy costs on low-income, elderly, and handicapped citizens through client education activities and weatherization services such as an all-around safety check of major energy systems, including heating system modifications and insulation checks.
- Department of Health and Human Services, Administration of Children & Families, Administration for Native Americans (ANA). The ANA awards funds through grants to American Indians, Native Americans, Native Alaskans, Native Hawaiians, and Pacific Islanders. These grants are awarded to individual organizations that successfully apply for discretionary funds. ANA publishes in the Federal Register an announcement of funds available, the primary areas of focus, review criteria, and the method of application.
- Department of Housing and Urban Development (HUD), Office of Homes and Communities, Section 108 Loan Guarantee Programs. This program provides loan guarantees as security for Federal loans for acquisition, rehabilitation, relocation, clearance, site preparation, special economic development activities, and construction of certain public facilities and housing.
- Department of Housing and Urban Development, Community Development Block Grants (HUD/CDBG). Provides grant assistance and technical assistance to aid communities in planning activities that address issues detrimental to the health and safety of local residents, such as housing rehabilitation, public services, community facilities, and infrastructure improvements that would primarily benefit low-and moderate-income persons.

- Department of Housing and Urban Development, Community Development Block Grant-Disaster Recovery (CDBG-DR) for the 2018 Cook Inlet Earthquake. Provides assistance to CDBG-DR eligible jurisdictions, specifically, the Matanuska-Susitna Borough, for disaster relief, long-term recovery, and the restoration of housing, public infrastructure, and economic revitalization.
- Department of Labor (DOL), Employment and Training Administration, Disaster Unemployment Assistance. Provides weekly unemployment subsistence grants for those who become unemployed because of a major disaster or emergency. Applicants must have exhausted all benefits for which they would normally be eligible.
- Federal Financial Institutions. Member banks of Federal Deposit Insurance Corporation, Financial Reporting Standards or Federal Home Loan Bank Board may be permitted to waive early withdrawal penalties for Certificates of Deposit and Individual Retirement Accounts.
- Internal Revenue Service (IRS), Tax Relief. Provides extensions to current year's tax return, allows deductions for disaster losses, and allows amendment of previous tax returns to reflect loss back to three years.
- U.S. Small Business Administration (SBA). May provide low-interest disaster loans to individuals and businesses that have suffered a loss due to a disaster. Requests for SBA loan assistance should be submitted to DHS&EM.
- USACE Alaska District's Civil Works Branch studies potential water resource projects in Alaska. These studies analyze and solve water resource issues of concern to the local communities. These issues may involve navigational improvements, flood control or ecosystem restoration. The agency also tracks flood hazard data for over 300 Alaskan communities on floodplains or the sea coast. These data help local communities assess the risk of floods to their communities and prepare for potential future floods. The USACE is a member and co-chair of the Alaska Climate Change Sub-Cabinet.

State Resources

- DHS&EM is responsible for improving hazard mitigation technical assistance for Tribal and Local governments for the State of Alaska. Providing hazard mitigation training, current hazard information, and communication facilitation with other agencies will enhance local hazard mitigation efforts. DHS&EM administers FEMA mitigation grants to mitigate future disaster damages such as those that may affect infrastructure including the elevation, relocation, or acquisition of hazard-prone properties. DHS&EM also provides mitigation funding resources for mitigation planning.
- Division of Senior Services (DSS): Provides special outreach services for seniors, including food, shelter, and clothing.
- Division of Insurance (DOI): Provides assistance in obtaining copies of policies and provides information regarding filing claims.
- Department of Military and Veterans Affairs (DMVA): Provides damage appraisals and settlements for VA-insured homes, and assists with filing of survivor benefits.

- The Community Health and Emergency Medical Services (CHEMS) is a section within the Division of Public Health within the Department of Health and Social Services (DHSS). DHSS is charged with promoting and protecting the public health and one of CHEMS' responsibilities is developing, implementing, and maintaining a statewide comprehensive emergency medical services system. The department's statutory mandate (Alaska Statute 18.08.010) requires it to:
  - Coordinate public and private agencies engaged in the planning and delivery of emergency medical services, including trauma care, to plan an emergency medical services system;
  - Assist public and private agencies to deliver emergency medical services, including trauma care, through the award of grants in aid;
  - Conduct, encourage, and approve programs of education and training designed to upgrade the knowledge and skills of health personnel involved in emergency medical services, including trauma care; and
  - Establish and maintain a process under which hospitals and clinics can represent themselves to be trauma centers because they voluntarily meet criteria adopted by the department which are based on an applicable national evaluation system.
- DCRA within the DCCED. DCRA administers the HUD/CDBG, FMA Program, and the Climate Change Sub-Cabinet's Interagency Working Group's program funds and administers various flood and erosion mitigation projects, including the elevation, relocation, or acquisition of flood-prone homes and businesses throughout the State. This department also administers programs for State "distressed" and "targeted" communities.
- Division of Environmental Conservation (DEC). The DEC's primary roles and responsibilities concerning hazards mitigation are ensuring safe food and safe water, and pollution prevention and pollution response. DEC ensures water treatment plants, landfills, and bulk fuel storage tank farms are safely constructed and operated in communities. Agency and facility response plans include hazards identification and pollution prevention and response strategies.
- Department of Transportation and Public Facilities (DOT/PF) personnel provide technical assistance to the various emergency management programs, to include mitigation. This assistance is addressed in the DHS&EM-DOT/PF Memorandum of Agreement and includes, but, is not limited to: environmental reviews, archaeological surveys, and historic preservation reviews.

  In addition, DOT/PF and DHS&EM coordinate buy-out projects to ensure that there are no potential right-of-way conflicts with future use of land for bridge and highway projects, and collaborate on earthquake mitigation.

  Additionally, DOT/PF provides safe, efficient, economical, and effective operation of the State's highways, harbors, and airports. DOT/PF uses it's Planning, Design and Engineering, Maintenance and Operations, and Intelligent Transportation Systems resources to identify the hazard, plan and initiate mitigation activities to meet the transportation needs of Alaskans and make Alaska a better place to live and work.

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APPENDIX A. Definitions

Aufeis: When new ice continues to form on top of older ice. Ice-forming situations occur wherever there are continuous sources of water and freezing temperatures.

Alluvial Fan: Area of deposition where steep mountain drainages empty into valley floors. Flooding in these areas often includes characteristics that differ from those in riverine or coastal areas.

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Anabatic Wind: Any wind blowing up an incline; the opposite to katabatic wind.

Avalanche: Mass of snow and ice falling suddenly down a mountain slope and often taking with it earth, rocks and rubble of every description.

Base Flood Elevation: The computed elevation to which floodwater is anticipated to rise during the base flood. Base Flood Elevations are shown on FIRMs and on flood profiles. The Base Flood Elevation is the regulatory requirement for the elevation or floodproofing of structures. The relationship between the Base Flood Elevation and a structure's elevation determines the flood insurance premium.

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Chinook: A warm down-slope wind.

Community Rating System: An NFIP program that provides incentives for NIFP Communities to complete activities that reduce flood hazard risk. When the community completes specified activities, the insurance premiums of policyholders in these communities are reduced.

Community: Any state, area, or political subdivision thereof, or any tribe or tribal entity that has the authority to adopt and enforce statutes for areas within its jurisdiction.

Community Council: A nonprofit, voluntary, self-governing association of residents of an area. It is recognized by assembly resolution but is not an arm of the Borough. There are 26 Community Councils in the Borough.

Critical Facility: Facilities critical to the health and welfare of the population and that are especially important during and after a hazard event. Critical facilities include, but are not limited to, shelters, hospitals, and fire stations.

Dam: A structure built across a waterway to impound water.

Development: Any manmade change to improved or unimproved real estate including, but not limited to, buildings or other structures, mining, dredging, filling, grading, paving, excavation or drilling operations, or storage of equipment or materials.

Earthquake: A sudden motion or trembling that is caused by a release of strain accumulated within or along the edge of the earth’s tectonic plates.

Earthquake Swarm: A collection of earthquakes that are frequent in time. There is no identifiable main shock.

Economic Disaster: When the annual income to workers in the designated area dropped below the average annual income for the base period for workers in the designated area and the drop in income is of such magnitude that the average family income of all residents of the designated area as determined by the department is below the poverty guidelines issued by the federal Department of Health and Human Services, adjusted by the department to reflect subsistence economic patterns and appropriate cost-of-living differentials; the availability of alternate employment shall be considered in determining whether an economic disaster has occurred under this paragraph.

Elevation: The raising of a structure to place it above flood waters, generally above the base flood elevation, on an extended support structure.

Emergency Operations Plan: A document that: describes how people and property will be protected in disaster and disaster threat situations; details who is responsible for carrying out specific actions; identifies the personnel, equipment, facilities, supplies, and other resources available for use in the disaster; and outlines how all actions will be coordinated.

Erosion: The wearing away of the land surface by running water, wind, ice, or other geological agents.

Federal Disaster Declaration: See Presidential Disaster Declaration.

Federal Emergency Management Agency (FEMA): A federal agency created in 1979 to provide a single point of accountability for all federal activities related to hazard mitigation, preparedness, response, and recovery.

Flash Flood: A flood event occurring with little or no warning where water levels rise at an extremely fast rate.

Flood: A general and temporary condition of partial or complete inundation of normally dry land areas from (1) the overflow of inland or tidal waters, (2) the unusual and rapid accumulation or runoff of surface waters from any source, or (3) mudflows or the sudden collapse of shoreline land.

Floodplain: A "floodplain" is the lowland adjacent to a river, lake, or ocean. Floodplains are designated by the frequency of the flood that is large enough to cover them. For example, the 10-year floodplain will be covered by the 10-year flood; the 100-year floodplain by the 100-year flood.

"Flood Frequencies:" Frequencies are determined by plotting a graph of the size of all known floods for an area and determining how often floods of a particular size occur. The frequency is the chance of a flood occurring during a given timeframe. It is the percentage of the probability of flooding each year. For example, the 100-year flood has a 1% chance and the 10-year flood has a 10% chance of occurring in any given year.

Fumarole: Fumaroles are vents from which volcanic gas escapes into the atmosphere. Fumaroles may occur along tiny cracks or long fissures, in chaotic clusters or fields, and on the surfaces of lava flows and thick deposits of pyroclastic flows. They may persist for decades or centuries if they are above a persistent heat source or disappear within weeks to months if they occur atop a fresh volcanic deposit that quickly cools.

Geographic Information System: A computer software application that relates physical features of the earth to a database that can be used for mapping and analysis.

Governing Body: The legislative body of a jurisdiction such as a municipal or Borough assembly or a city council.

Hazard: A source of potential danger or adverse condition. Any situation that has the potential for causing personal injury or death, or damage to property and the environment.

Hazard Mitigation: Any action taken to reduce or eliminate the long-term risk to human life and property from natural hazards (44 CFR Subpart M 206.401).

Hazard Mitigation Grant Program: The program authorized under §322 of the Disaster Mitigation Act 2000, which may provide funding for mitigation measures identified through the evaluation of natural hazards.

Hazard and Vulnerability Analysis: The identification and evaluation of all the hazards that potentially threaten a jurisdiction and analyzing them in the context of the jurisdiction to determine the degree of threat that is posed by each.

Hydro Unit: Short for Hydrologic Unit. A drainage area delineated to nest in a multi-level, hierarchical drainage system. Its boundaries are defined by hydrographic and topographic criteria that delineate an area of land upstream from a specific point on a river, stream, or similar surface water. A hydrologic unit can accept surface water directly from upstream drainage areas, and indirectly from associated surface areas such as remnant, non-contributing, and diversions to form a drainage area with single or multiple outlet points.

Infrastructure: The public services of a community that have a direct impact to the quality of life. Infrastructure refers to communication technology such as phone lines or Internet access, vital services such as public water supply and sewer treatment facilities, and includes an area's transportation system, regional dams or bridges, etc.

Interferometry: A method employing the interference of electromagnetic radiation to make highly precise measurements of the angle between the two rays of light.

Inundation: The maximum horizontal distance inland reached by a tsunami.

Jökulhlaup: A sudden flood-like release of water from a glacier (glacier outburst flooding).

Jurisdiction: The authority to apply the law; the territory under a given authority or control.

Katabatic wind: Any wind blowing down an incline; the opposite to anabatic wind.

Lahar: Lahar is an Indonesian word for a rapidly flowing mixture of rock debris and water that originates on the slopes of a volcano. Lahars are also referred to as volcanic mudflows or debris flows. They form in a variety of ways, chiefly by the rapid melting of snow and ice by pyroclastic flows, intense rainfall on loose volcanic rock deposits, breakout of a lake dammed by volcanic deposits, and as a consequence of debris avalanches.

Landslide: Downward movement of a slope and materials under the force of gravity.

Lava dome: Lava domes are rounded, steep-sided mounds built by very viscous magma. Such magmas are typically too viscous (resistant to flow) to move far from the vent before cooling and crystallizing. Domes may consist of one or more individual lava flows.

LiDAR: Light Detection and Ranging technology which uses pulsed light from lasers or other sources to accurately measure distances. It is used to create maps and 3-D imagery.

Local Government: Any Borough, municipality, city, township, public authority, school district, intrastate district, council of governments (regardless of whether the council of governments is incorporated as a nonprofit corporation under State law), regional or interstate government entity, or agency, or instrumentality of a local government; any Indian tribe or authorized tribal organization, or Alaska Native village or organization; and any rural community, unincorporated town or village, or other public entity, for which an application for assistance is made by a State or political subdivision of a state.

Magma: Molten rock originating from the Earth's interior.

Municipality: A political subdivision incorporated under the laws of the state that is a home rule or general law city, a home rule or general law borough, or a unified municipality.

Natural Disaster: Any natural catastrophe, including any hurricane, tornado, storm, high water, wind, driven water, tsunami, earthquake, volcanic eruption, landslide, snowstorm, fire, or drought. (44 CFR Subpart M206.401)

Orthophoto: An aerial photo that has been corrected to eliminate the effects of camera tilt and relief displacement. The ground geometry is recreated as it would appear from directly above each and every point.

Overlay Zone: Overlay zones (overlay districts) create a framework for conservation or development of special geographical areas. In a special resource overlay district, overlay provisions typically impose greater restrictions on the development of land, but only regarding those parcels whose development, as permitted under the zoning, may threaten the viability of the natural resource. In a development area overlay district, the provisions may impose restrictions as well, but also may provide zoning incentives and waivers to encourage certain types and styles of development. Overlay zone provisions are often complemented by the adoption of other innovative zoning techniques, such as floating zones, special permits, incentive zoning, cluster development and special site plan or subdivision regulations, to name a few.

Period: A length of time. For waves, it is the length of time between two successive peaks or troughs, which may vary due to interference of waves. Tsunami periods generally range from 5 to 60 minutes.

Planning: The act or process of making or carrying out plans; the establishment of goals, policies and procedures for a social or economic unit.

Preparedness: The steps taken to decide what to do if essential services break down, developing a plan for contingencies, and practicing the plan. Preparedness ensures that people are ready for a disaster and will respond to it effectively.

Presidential Disaster Declaration: The formal action by the President of the United States to make a state eligible for major disaster or emergency assistance under the Robert T. Stafford Relief and Emergency Assistance Act, Public Law 93- 288, as amended.

Pyroclastic: Pertaining to fragmented rock material formed by a volcanic explosion or ejection from a volcanic vent.

Pyroclastic Flow: Lateral flow of a turbulent mixture of hot gases and unsorted pyroclastic material (volcanic fragments, ash, etc.) that can move at high speeds.

Recovery: The long-term activities beyond the initial crisis period and emergency response phase of disaster operations that focus on returning all systems in the community to a normal status or to reconstitute these systems to a new, less vulnerable condition.

Response: Those activities and programs designed to address the immediate and short-term effects of the onset of an emergency or disaster.

Retrofit: The strengthening of existing structures to mitigate disaster risks.

Rift Zone: A rift zone is an elongate system of crustal fractures associated with an area that has undergone extension (the ground has spread apart).

Risk: The estimated impact that a hazard would have on people, services, facilities, and structures in a community; the likelihood of a hazard event resulting in an adverse condition that causes injury or damage. Risk is often expressed in relative terms such as a high, moderate or low likelihood of sustaining damage above a particular threshold due to a specific type of hazard event. It can also be expressed in terms of potential monetary losses associated with the intensity of the hazard.

Riverine: Relating to, formed by, or resembling rivers (including tributaries), streams, creeks, brooks, etc.

Riverine Flooding: Flooding related to or caused by a river, stream, or tributary overflowing its banks due to excessive rainfall, snowmelt or ice.

Run-up: The maximum vertical height of a tsunami in relation to sea level.

Seiche: An oscillating wave (also referred to as a seismic sea wave) in a partially or fully enclosed body of water. May be initiated by long period seismic waves, wind and water waves, or a tsunami.

Stafford Act: 1) The Robert T. Stafford Disaster Relief and Emergency Assistance Act, Public Law 93-288, as amended. 2) The Stafford Act provides an orderly and continuing means of assistance by the Federal Government to State, local and tribal governments in carrying out their responsibilities to alleviate the suffering and damage which result from disaster.

State Disaster Declaration: A disaster emergency shall be declared by executive order or proclamation of the Governor upon finding that a disaster has occurred or that the occurrence or the threat of a disaster is imminent. The state of disaster emergency shall continue until the governor finds that the threat or danger has passed or that the disaster has been dealt with to the extent that emergency conditions no longer exist and terminates the state of disaster emergency by executive order or proclamation. Along with other provisions, this declaration allows the governor to utilize all available resources of the State as reasonably necessary, direct and compel the evacuation of all or part of the population from any stricken or threatened area if necessary, prescribe routes, modes of transportation and destinations in connection with evacuation and control ingress and egress to and from disaster area. It is required before a Presidential Disaster Declaration can be requested.

State Hazard Mitigation Officer (SHMO): The SHMO is the representative of state government who is the primary point of contact with FEMA, other state and Federal

agencies, and local units of government in the planning and implementation of pre- and post-disaster mitigation activities.

Storm Surge: Rise in the water surface above normal water level on open coast due to the action of wind stress and atmospheric pressure on the water surface.

Tectonic Plate: Torsionally rigid, thin segments of the earth's lithosphere that may be assumed to move horizontally and adjoin other plates. It is the friction between plate boundaries that causes seismic activity.

Tephra: Tephra is a general term for fragments of volcanic rock and lava regardless of size that are blasted into the air by explosions or carried upward by hot gases in eruption columns or lava fountains. Tephra includes large dense blocks and bombs, and small light rock debris.

Topography: The contour of the land surface. The technique of graphically representing the exact physical features of a place or region on a map.

Tribal Government: A Federally recognized governing body of an Indian or Alaska Native Tribe, band, nation, pueblo, village or community that the Secretary of the Interior acknowledges to exist as an Indian tribe under the Federally Recognized Tribe List Act of 1994, 25 U.S.C. 479a. This does not include Alaska Native corporations, the ownership of which is vested in private individuals.

Tsunami: A sea wave produced by submarine earth movement or volcanic eruption with a sudden rise or fall of a section of the earth's crust under or near the ocean. A seismic disturbance or land slide can displace the water column, creating a rise or fall in the level of the ocean above. This rise or fall in sea level is the initial formation of a tsunami wave.

Volcano Vent: Vents are openings in the Earth's crust from which molten rock and volcanic gases escape onto the ground or into the atmosphere. Vents may consist of a single circular-shaped structure, a large elongated fissure and fracture, or a tiny ground crack.

Vulnerability: Describes how exposed or susceptible to damage an asset it. Vulnerability depends on an asset's construction, contents, and the economic value of its functions. The vulnerability of one element of the community is often related to the vulnerability of another. For example, many businesses depend on uninterrupted electrical power – if an electrical substation is flooded, it will affect not only the substation itself, but a number of businesses as well. Other, indirect effects can be much more widespread and damaging than direct ones.

Wildfire: An uncontrolled fire that spreads though vegetative fuels, exposing and possibly consuming structures.

Worst Case Scenario: The term "worst case scenario" is somewhat self-explanatory. It includes the potential for a "cascade effect", which was assumed in analyzing the risk from each hazard. The term "cascade effect" is used to describe the triggering of several hazard occurrences from an initial event. An earthquake for instance, might also trigger avalanches, collapsed buildings, transportation and utility disruptions, and hazardous material releases, each of which might trigger additional events, all part of the same incident.

Zoning Ordinance: An ordinance under the state or local government's police powers that divides an area into districts and, within each district, regulates the use of land and buildings, height, and bulk of buildings or other structures, and the density of population.

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Chinook: A warm down-slope wind.

Community Rating System: An NFIP program that provides incentives for NIFP Communities to complete activities that reduce flood hazard risk. When the community completes specified activities, the insurance premiums of policyholders in these communities are reduced.

Community: Any state, area, or political subdivision thereof, or any tribe or tribal entity that has the authority to adopt and enforce statutes for areas within its jurisdiction.

Community Council: A nonprofit, voluntary, self-governing association of residents of an area. It is recognized by assembly resolution but is not an arm of the Borough. There are 26 Community Councils in the Borough.

Critical Facility: Facilities critical to the health and welfare of the population and that are especially important during and after a hazard event. Critical facilities include, but are not limited to, shelters, hospitals, and fire stations.

Dam: A structure built across a waterway to impound water.

Development: Any manmade change to improved or unimproved real estate including, but not limited to, buildings or other structures, mining, dredging, filling, grading, paving, excavation or drilling operations, or storage of equipment or materials.

Earthquake: A sudden motion or trembling that is caused by a release of strain accumulated within or along the edge of the earth’s tectonic plates.

Earthquake Swarm: A collection of earthquakes that are frequent in time. There is no identifiable main shock.

Economic Disaster: When the annual income to workers in the designated area dropped below the average annual income for the base period for workers in the designated area and the drop in income is of such magnitude that the average family income of all residents of the designated area as determined by the department is below the poverty guidelines issued by the federal Department of Health and Human Services, adjusted by the department to reflect subsistence economic patterns and appropriate cost-of-living differentials; the availability of alternate employment shall be considered in determining whether an economic disaster has occurred under this paragraph.

Elevation: The raising of a structure to place it above flood waters, generally above the base flood elevation, on an extended support structure.

Emergency Operations Plan: A document that: describes how people and property will be protected in disaster and disaster threat situations; details who is responsible for carrying out specific actions; identifies the personnel, equipment, facilities, supplies, and other resources available for use in the disaster; and outlines how all actions will be coordinated.

Erosion: The wearing away of the land surface by running water, wind, ice, or other geological agents.

Federal Disaster Declaration: See Presidential Disaster Declaration.

Federal Emergency Management Agency (FEMA): A federal agency created in 1979 to provide a single point of accountability for all federal activities related to hazard mitigation, preparedness, response, and recovery.

Flash Flood: A flood event occurring with little or no warning where water levels rise at an extremely fast rate.

Flood: A general and temporary condition of partial or complete inundation of normally dry land areas from (1) the overflow of inland or tidal waters, (2) the unusual and rapid accumulation or runoff of surface waters from any source, or (3) mudflows or the sudden collapse of shoreline land.

Floodplain: A "floodplain" is the lowland adjacent to a river, lake, or ocean. Floodplains are designated by the frequency of the flood that is large enough to cover them. For example, the 10-year floodplain will be covered by the 10-year flood; the 100-year floodplain by the 100-year flood.

"Flood Frequencies:" Frequencies are determined by plotting a graph of the size of all known floods for an area and determining how often floods of a particular size occur. The frequency is the chance of a flood occurring during a given timeframe. It is the percentage of the probability of flooding each year. For example, the 100-year flood has a 1% chance and the 10-year flood has a 10% chance of occurring in any given year.

Fumarole: Fumaroles are vents from which volcanic gas escapes into the atmosphere. Fumaroles may occur along tiny cracks or long fissures, in chaotic clusters or fields, and on the surfaces of lava flows and thick deposits of pyroclastic flows. They may persist for decades or centuries if they are above a persistent heat source or disappear within weeks to months if they occur atop a fresh volcanic deposit that quickly cools.

Geographic Information System: A computer software application that relates physical features of the earth to a database that can be used for mapping and analysis.

Governing Body: The legislative body of a jurisdiction such as a municipal or Borough assembly or a city council.

Hazard: A source of potential danger or adverse condition. Any situation that has the potential for causing personal injury or death, or damage to property and the environment.

Hazard Mitigation: Any action taken to reduce or eliminate the long-term risk to human life and property from natural hazards (44 CFR Subpart M 206.401).

Hazard Mitigation Grant Program: The program authorized under §322 of the Disaster Mitigation Act 2000, which may provide funding for mitigation measures identified through the evaluation of natural hazards.

Hazard and Vulnerability Analysis: The identification and evaluation of all the hazards that potentially threaten a jurisdiction and analyzing them in the context of the jurisdiction to determine the degree of threat that is posed by each.

Hydro Unit: Short for Hydrologic Unit. A drainage area delineated to nest in a multi-level, hierarchical drainage system. Its boundaries are defined by hydrographic and topographic criteria that delineate an area of land upstream from a specific point on a river, stream, or similar surface water. A hydrologic unit can accept surface water directly from upstream drainage areas, and indirectly from associated surface areas such as remnant, non-contributing, and diversions to form a drainage area with single or multiple outlet points.

Infrastructure: The public services of a community that have a direct impact to the quality of life. Infrastructure refers to communication technology such as phone lines or Internet access, vital services such as public water supply and sewer treatment facilities, and includes an area's transportation system, regional dams or bridges, etc.

Interferometry: A method employing the interference of electromagnetic radiation to make highly precise measurements of the angle between the two rays of light.

Inundation: The maximum horizontal distance inland reached by a tsunami.

Jökulhlaup: A sudden flood-like release of water from a glacier (glacier outburst flooding).

Jurisdiction: The authority to apply the law; the territory under a given authority or control.

Katabatic wind: Any wind blowing down an incline; the opposite to anabatic wind.

Lahar: Lahar is an Indonesian word for a rapidly flowing mixture of rock debris and water that originates on the slopes of a volcano. Lahars are also referred to as volcanic mudflows or debris flows. They form in a variety of ways, chiefly by the rapid melting of snow and ice by pyroclastic flows, intense rainfall on loose volcanic rock deposits, breakout of a lake dammed by volcanic deposits, and as a consequence of debris avalanches.

Landslide: Downward movement of a slope and materials under the force of gravity.

Lava dome: Lava domes are rounded, steep-sided mounds built by very viscous magma. Such magmas are typically too viscous (resistant to flow) to move far from the vent before cooling and crystallizing. Domes may consist of one or more individual lava flows.

LiDAR: Light Detection and Ranging technology which uses pulsed light from lasers or other sources to accurately measure distances. It is used to create maps and 3-D imagery.

Local Government: Any Borough, municipality, city, township, public authority, school district, intrastate district, council of governments (regardless of whether the council of governments is incorporated as a nonprofit corporation under State law), regional or interstate government entity, or agency, or instrumentality of a local government; any Indian tribe or authorized tribal organization, or Alaska Native village or organization; and any rural community, unincorporated town or village, or other public entity, for which an application for assistance is made by a State or political subdivision of a state.

Magma: Molten rock originating from the Earth's interior.

Municipality: A political subdivision incorporated under the laws of the state that is a home rule or general law city, a home rule or general law borough, or a unified municipality.

Natural Disaster: Any natural catastrophe, including any hurricane, tornado, storm, high water, wind, driven water, tsunami, earthquake, volcanic eruption, landslide, snowstorm, fire, or drought. (44 CFR Subpart M206.401)

Orthophoto: An aerial photo that has been corrected to eliminate the effects of camera tilt and relief displacement. The ground geometry is recreated as it would appear from directly above each and every point.

Overlay Zone: Overlay zones (overlay districts) create a framework for conservation or development of special geographical areas. In a special resource overlay district, overlay provisions typically impose greater restrictions on the development of land, but only regarding those parcels whose development, as permitted under the zoning, may threaten the viability of the natural resource. In a development area overlay district, the provisions may impose restrictions as well, but also may provide zoning incentives and waivers to encourage certain types and styles of development. Overlay zone provisions are often complemented by the adoption of other innovative zoning techniques, such as floating zones, special permits, incentive zoning, cluster development and special site plan or subdivision regulations, to name a few.

Period: A length of time. For waves, it is the length of time between two successive peaks or troughs, which may vary due to interference of waves. Tsunami periods generally range from 5 to 60 minutes.

Planning: The act or process of making or carrying out plans; the establishment of goals, policies and procedures for a social or economic unit.

Preparedness: The steps taken to decide what to do if essential services break down, developing a plan for contingencies, and practicing the plan. Preparedness ensures that people are ready for a disaster and will respond to it effectively.

Presidential Disaster Declaration: The formal action by the President of the United States to make a state eligible for major disaster or emergency assistance under the Robert T. Stafford Relief and Emergency Assistance Act, Public Law 93- 288, as amended.

Pyroclastic: Pertaining to fragmented rock material formed by a volcanic explosion or ejection from a volcanic vent.

Pyroclastic Flow: Lateral flow of a turbulent mixture of hot gases and unsorted pyroclastic material (volcanic fragments, ash, etc.) that can move at high speeds.

Recovery: The long-term activities beyond the initial crisis period and emergency response phase of disaster operations that focus on returning all systems in the community to a normal status or to reconstitute these systems to a new, less vulnerable condition.

Response: Those activities and programs designed to address the immediate and short-term effects of the onset of an emergency or disaster.

Retrofit: The strengthening of existing structures to mitigate disaster risks.

Rift Zone: A rift zone is an elongate system of crustal fractures associated with an area that has undergone extension (the ground has spread apart).

Risk: The estimated impact that a hazard would have on people, services, facilities, and structures in a community; the likelihood of a hazard event resulting in an adverse condition that causes injury or damage. Risk is often expressed in relative terms such as a high, moderate or low likelihood of sustaining damage above a particular threshold due to a specific type of hazard event. It can also be expressed in terms of potential monetary losses associated with the intensity of the hazard.

Riverine: Relating to, formed by, or resembling rivers (including tributaries), streams, creeks, brooks, etc.

Riverine Flooding: Flooding related to or caused by a river, stream, or tributary overflowing its banks due to excessive rainfall, snowmelt or ice.

Run-up: The maximum vertical height of a tsunami in relation to sea level.

Seiche: An oscillating wave (also referred to as a seismic sea wave) in a partially or fully enclosed body of water. May be initiated by long period seismic waves, wind and water waves, or a tsunami.

Stafford Act: 1) The Robert T. Stafford Disaster Relief and Emergency Assistance Act, Public Law 93-288, as amended. 2) The Stafford Act provides an orderly and continuing means of assistance by the Federal Government to State, local and tribal governments in carrying out their responsibilities to alleviate the suffering and damage which result from disaster.

State Disaster Declaration: A disaster emergency shall be declared by executive order or proclamation of the Governor upon finding that a disaster has occurred or that the occurrence or the threat of a disaster is imminent. The state of disaster emergency shall continue until the governor finds that the threat or danger has passed or that the disaster has been dealt with to the extent that emergency conditions no longer exist and terminates the state of disaster emergency by executive order or proclamation. Along with other provisions, this declaration allows the governor to utilize all available resources of the State as reasonably necessary, direct and compel the evacuation of all or part of the population from any stricken or threatened area if necessary, prescribe routes, modes of transportation and destinations in connection with evacuation and control ingress and egress to and from disaster area. It is required before a Presidential Disaster Declaration can be requested.

State Hazard Mitigation Officer (SHMO): The SHMO is the representative of state government who is the primary point of contact with FEMA, other state and Federal

agencies, and local units of government in the planning and implementation of pre- and post-disaster mitigation activities.

Storm Surge: Rise in the water surface above normal water level on open coast due to the action of wind stress and atmospheric pressure on the water surface.

Tectonic Plate: Torsionally rigid, thin segments of the earth's lithosphere that may be assumed to move horizontally and adjoin other plates. It is the friction between plate boundaries that causes seismic activity.

Tephra: Tephra is a general term for fragments of volcanic rock and lava regardless of size that are blasted into the air by explosions or carried upward by hot gases in eruption columns or lava fountains. Tephra includes large dense blocks and bombs, and small light rock debris.

Topography: The contour of the land surface. The technique of graphically representing the exact physical features of a place or region on a map.

Tribal Government: A Federally recognized governing body of an Indian or Alaska Native Tribe, band, nation, pueblo, village or community that the Secretary of the Interior acknowledges to exist as an Indian tribe under the Federally Recognized Tribe List Act of 1994, 25 U.S.C. 479a. This does not include Alaska Native corporations, the ownership of which is vested in private individuals.

Tsunami: A sea wave produced by submarine earth movement or volcanic eruption with a sudden rise or fall of a section of the earth's crust under or near the ocean. A seismic disturbance or land slide can displace the water column, creating a rise or fall in the level of the ocean above. This rise or fall in sea level is the initial formation of a tsunami wave.

Volcano Vent: Vents are openings in the Earth's crust from which molten rock and volcanic gases escape onto the ground or into the atmosphere. Vents may consist of a single circular-shaped structure, a large elongated fissure and fracture, or a tiny ground crack.

Vulnerability: Describes how exposed or susceptible to damage an asset it. Vulnerability depends on an asset's construction, contents, and the economic value of its functions. The vulnerability of one element of the community is often related to the vulnerability of another. For example, many businesses depend on uninterrupted electrical power – if an electrical substation is flooded, it will affect not only the substation itself, but a number of businesses as well. Other, indirect effects can be much more widespread and damaging than direct ones.

Wildfire: An uncontrolled fire that spreads though vegetative fuels, exposing and possibly consuming structures.

Worst Case Scenario: The term "worst case scenario" is somewhat self-explanatory. It includes the potential for a "cascade effect", which was assumed in analyzing the risk from each hazard. The term "cascade effect" is used to describe the triggering of several hazard occurrences from an initial event. An earthquake for instance, might also trigger avalanches, collapsed buildings, transportation and utility disruptions, and hazardous material releases, each of which might trigger additional events, all part of the same incident.

Zoning Ordinance: An ordinance under the state or local government's police powers that divides an area into districts and, within each district, regulates the use of land and buildings, height, and bulk of buildings or other structures, and the density of population.

Appendix B: Public Involvement

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MATANUSKA-SUSITNA BOROUGH

2018 HAZARD MITIGATION PLAN (HMP) UPDATE

DATE: December 20, 2017

PLAN: https://www.matsugov.us/plans/msb-hazard-mitigation-plan-2013

TASKS:

- Review 2013 Hazard Mitigation Plan (HMP)
- Identify new infrastructure/critical infrastructure since the last plan
- Identify new hazard information (i.e. new flood risk maps), disasters, events
- Identify projects that have been accomplished
- Revalidate strategies, goals, objectives, and projects that have not been accomplished for continued need

RETURN: January 31, 2018

POC:

Taunnie L. Boothby, CFM, Planner II

Matanuska Susitna Borough
Planning and Land Use Dept.
350 E Dahlia Ave
Palmer, AK 99645

Phone: (907) 861-8526

E-mail: taunnie.boothby@matsugov.us

LEPC ADVISORY BOARD MEETING

December 20, 2017

	NAME	AGENCY
1	Mike Chmielewski	Radio free palmer
2	Ray A Hollembeck	ARES
3	Casey Cook	MSB
4	Bill Morgan	ARC
5	Ben Ogden	ZOL
6	Jennifer LeMay	LeMay Engineering
7	Louis N. Friend III	Enviremedal Tech.
8	Tawnie Boothby	MSB Planner
9	DJ Desjardin	AKNG
10	Rene' Dillow	matsu PHC
11	Cathi Kramer	Fire Service Boards
12	Dawn Hicks	Mat-Su Public Health
13	Norman Straub	ENV TECH
14	Benjamin Gurley	AKARNG
15	Steven Paine	MSBSD
16	Rick Bembroski	HS+EM

OVER ⇨

Hazard Mitigation Plan Meeting

MEMBER SIGN-IN SHEET **Date:** January 22, 2019

Name	E-mail	Phone #
Emerson Krueger	ekrueger@matsugov.us	861-7867
Rick Antonio	rantonio@matsugov.us	861-7728
MICHAEL CAMPFIELD	mcampfield@matsugov.us	861-7719
Bob Walden	robert.walden@matsugov.us	861-7726
TERRY Dolan	terry.dolan@matsugov.us	861-7751
~~JANIS SWANSON~~	janis.swanson@akleg.gov	~~786-3808~~ 428-7005
RICK DEMBROSKI	RICK.DEMBROSKI@ALASKA.GOV	428-7015
MIKE JOHNSON	MIKE.JOHNSON@ALASKA.gov	428-7055
BRENT A. NICHOLS	brent.nichols@alaska.gov	428-7085
JENNIFER LEMAY	jlemay@lemayengineering.com	350-6061
TAUNNIE L. Boothby	taunnie.boothby@matsugov.us	861-8526
Alex Senta	alex.senta@matsugov.us	861-7763
Debbie Passmore	debbie.passmore@matsugov.us	861-7716
Brad Swarts	brad.swarts@matsugov.us	861-7715
Adam Bradway	adam.bradway@matsugov.us	861-8608
Ted Eischeid	ted.eischeid@matsugov.us	861-8606
Casey Cook	casey.cook@matsugov.us	861-8004
Pam Graham	Pam.Graham@matsugov.us	861-8525

Plans > MSB Hazard Mitigation Plan

This is the Matanuska Susitna Borough adopted Hazard Mitigation Plan from 2013.

The Matanuska-Susitna Borough is in the process of updating the Hazard Mitigation Plan. You can review the project page for this update by clicking this link...

2019 Hazard Mitigation Plan Update

Please take a moment to complete the survey that is on the project page!

Plan Overview

Hazard mitigation planning helps communities reduce their risk from hazards by identifying vulnerabilities and developing strategies to lessen and sometimes even eliminate the effects of the hazard. Some of the benefits of mitigation planning are as follows: Leads to identification, selection, and prioritization of risk-reduction actions.

Plan Document

MSB Hazard Mitigation Plan 2013

Documents

MATANUSKA-SUSITNA BOROUGH

2019 Hazard Mitigation Plan Update

Scope

Your input is vital to the update of this plan; please take a moment and complete the survey in the link below:

www.surveymonkey.com/r/MSBHazardMitigation (https://www.surveymonkey.com/r/MSBHazardMitigation)

The Matanuska-Susitna Borough (MSB or "Borough") All-Hazards Mitigation Plan was developed to meet requirements of the Hazard Mitigation Act of 2000 Section 322 (a-b) which requires documented hazard mitigation planning on the local level for jurisdictions to retain eligibility to receive federal disaster mitigation funds. This plan is intended as a guide for reducing losses, both human and economic, due to natural disasters. This document follows the required processes of identification of hazards, mapping the potentially impacted areas, tallying risks and vulnerabilities, and presenting mitigation strategies. It is understood that this plan will be revised in response to changing conditions with a significant update occurring every five years.

The primary goals of hazard mitigation are:
• Minimize injuries and loss of life;
• Minimize damages;
• Facilitate post-disaster restoration of public services; and
• Promote economic development.

To attain these goals, the MSB All-Hazards Mitigation Plan shall include measures to:
• Save lives and reduce injuries;
• Prevent or reduce property damage;
• Reduce economic losses;
• Minimize social dislocation and stress;
• Maintain critical facilities in functional order;
• Protect infrastructure from damage; and
• Protect legal liability of government and public officials.

The 2019 MSB Hazard Mitigation Plan Update includes working with the State contractor on the update of the 2013 Matanuska-Susitna Borough Hazard Mitigation Plan.

Project Benefits

Hazard mitigation planning help communities reduce their risk from hazards by identifying vulnerabilities and developing strategies to lessen and sometimes even eliminate the effects of the hazard. Some of the benefits of mitigation planning are as follows: Leads to identification, selection, and prioritization of risk-reduction actions.

You may review the Hazard Mitigation Plan page on the link below:

Contacts

Taunnie Boothby, Planner II

taunnie.boothby@matsugov.us (mailto:taunnie.boothby@matsugov.

907-861-8526

MSB Hazard Mitigation Plan (/28-documents/plans/18803-msb-hazard-mitigation-plan-2013?highlight=WyJoYXphcmQiLCJtaXRpZ2F0aW9uIiwiaGF6YXJkIG1pdGlnYXRpb24iXQ==&

Project Status

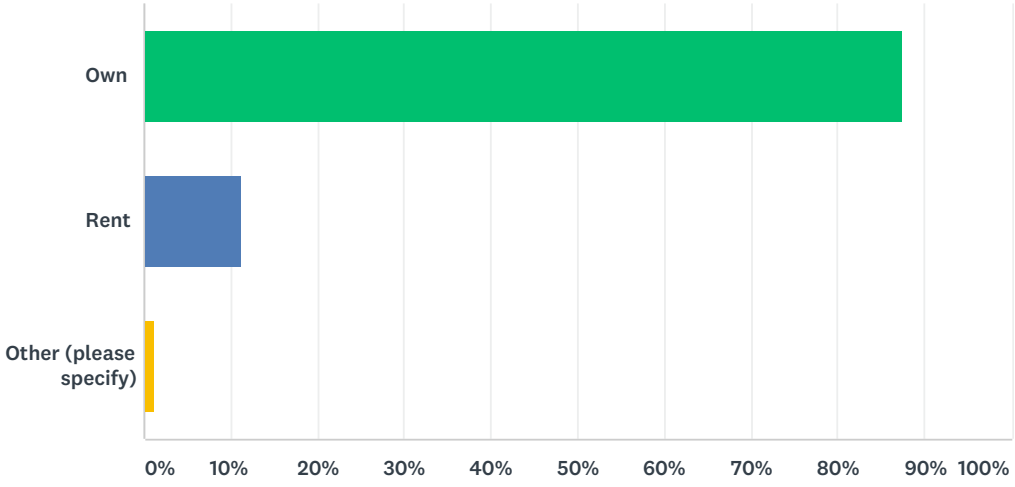
Staff and contractor are reviewing existing data and the community survey is available.

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(907) 861-7801 | Main Borough Building Hours: Mon.- Fri. 8 A.M. - 5 P.M.

Do you own or rent your home?

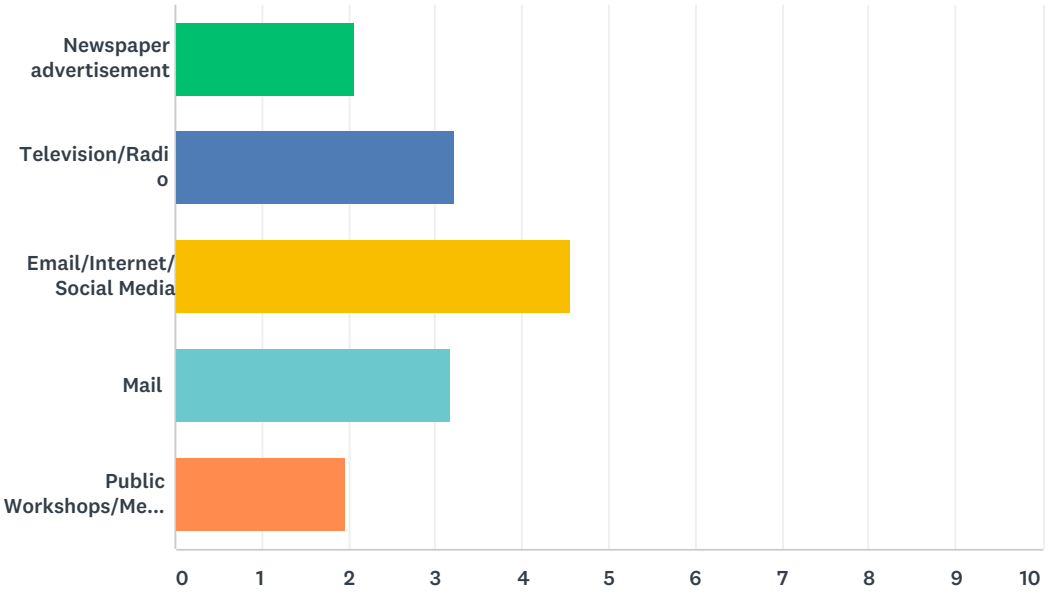
Answered: 581 Skipped: 140



ANSWER CHOICES	RESPONSES	
Own	87.44%	508
Rent	11.36%	66
Other (please specify)	1.20%	7
TOTAL		581

What is the most effective way for you to receive information on this and other borough topics (Please rank in order of best to worst communication method, with 1 being best)

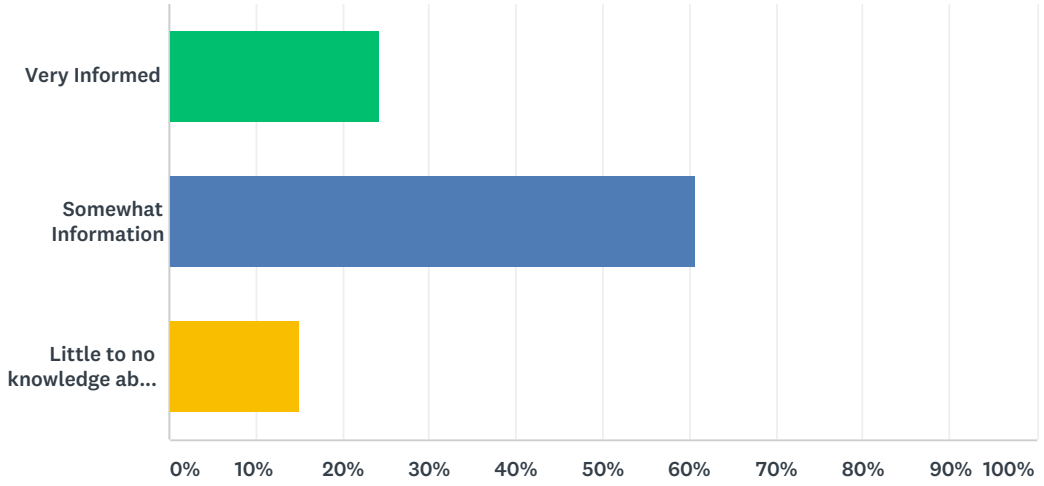
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	1	2	3	4	5	TOTAL	SCORE
Newspaper advertisement	3.69% 20	6.09% 33	22.32% 121	29.89% 162	38.01% 206	542	2.08
Television/Radio	8.81% 49	41.01% 228	24.64% 137	15.83% 88	9.71% 54	556	3.23
Email/Internet/Social Media	75.04% 430	14.83% 85	4.89% 28	2.97% 17	2.27% 13	573	4.57
Mail	12.10% 68	31.67% 178	26.69% 150	19.75% 111	9.79% 55	562	3.17
Public Workshops/Meetings	1.82% 10	5.84% 32	21.35% 117	29.74% 163	41.24% 226	548	1.97

How Informed do you feel about natural hazards facing the Matanuska-Susitna Borough (Mat-Su).

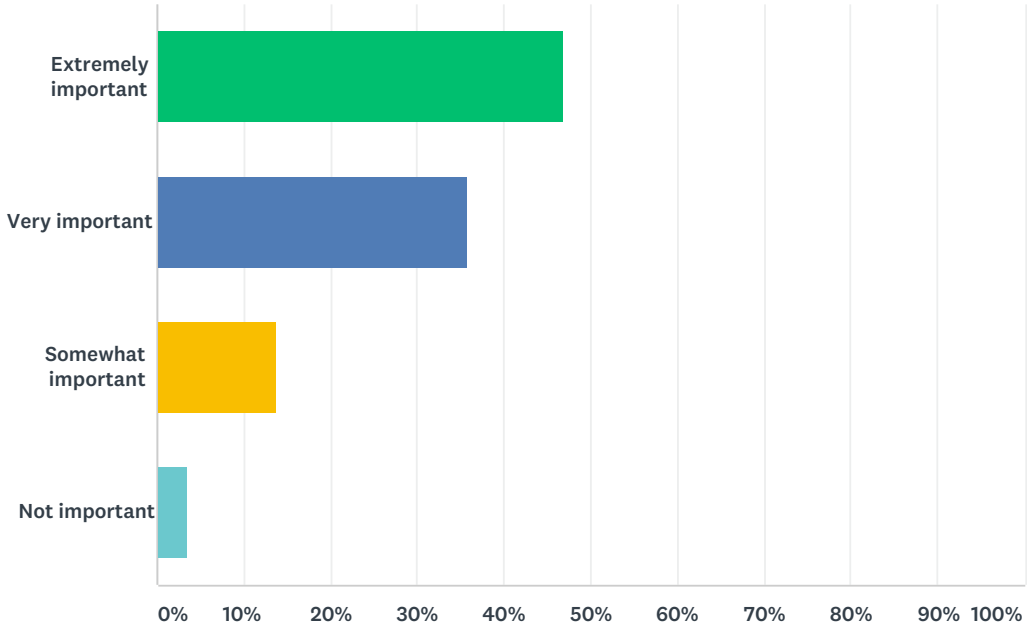
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ANSWER CHOICES	RESPONSES	
Very Informed	24.31%	141
Somewhat Information	60.69%	352
Little to no knowledge about hazards in Mat-Su	15.00%	87
TOTAL		580

Prevention - These are administrative or regulatory actions that influence the way land is developed and buildings are built. Examples include planning and zoning, building codes, open space preservation, and floodplain regulations.

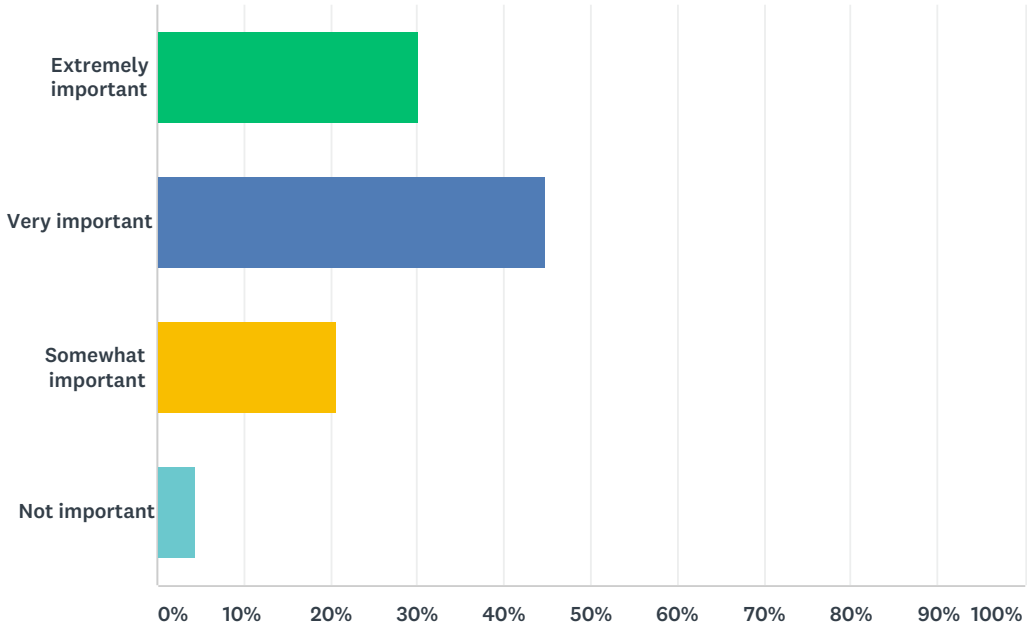
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ANSWER CHOICES	RESPONSES	
Extremely important	46.95%	246
Very important	35.69%	187
Somewhat important	13.74%	72
Not important	3.63%	19
TOTAL		524

Property Protection - These are actions taken to lessen the risk of Damage to property. Examples: removing homes from the floodplain; elevating homes to stay above water levels during flooding

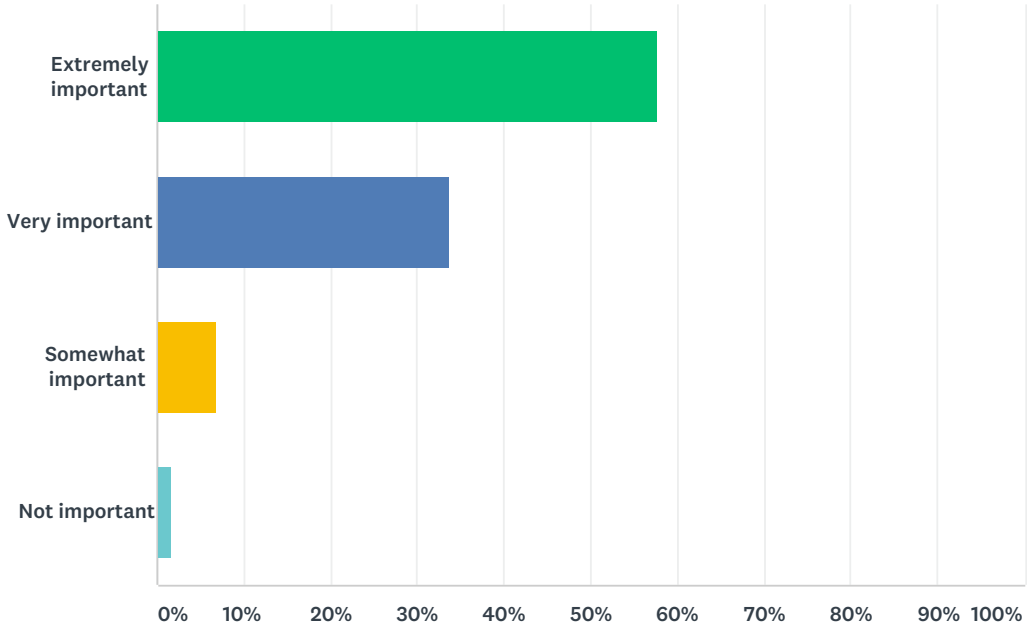
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ANSWER CHOICES	RESPONSES	
Extremely important	30.08%	157
Very important	44.83%	234
Somewhat important	20.69%	108
Not important	4.41%	23
TOTAL		522

Public Education and Awareness - These are actions taken to inform the public about hazardous areas and the actions necessary to avoid potential injury or damage.Examples: outreach programs; public services announcements; notices to residents and property owners.

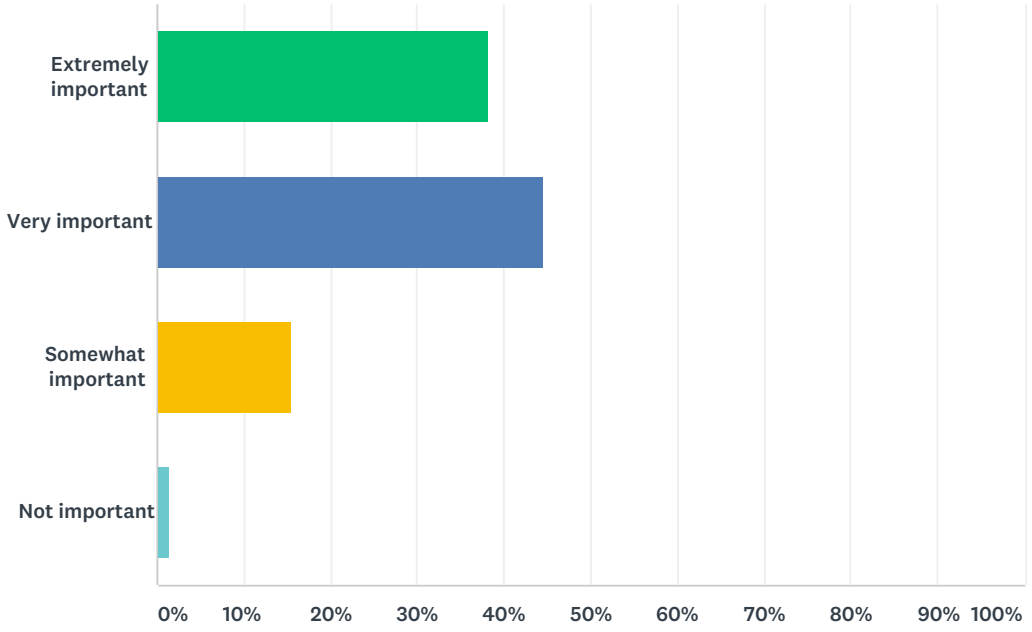
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ANSWER CHOICES	RESPONSES	
Extremely important	57.69%	300
Very important	33.65%	175
Somewhat important	6.92%	36
Not important	1.73%	9
TOTAL		520

Natural Resource Protection - These are actions that, in addition to minimizing losses, also preserve or restore the functions of natural systems.Examples: Floodplain protection, habitat preservation, slope stabilizations, riparian buffers, and forest management.

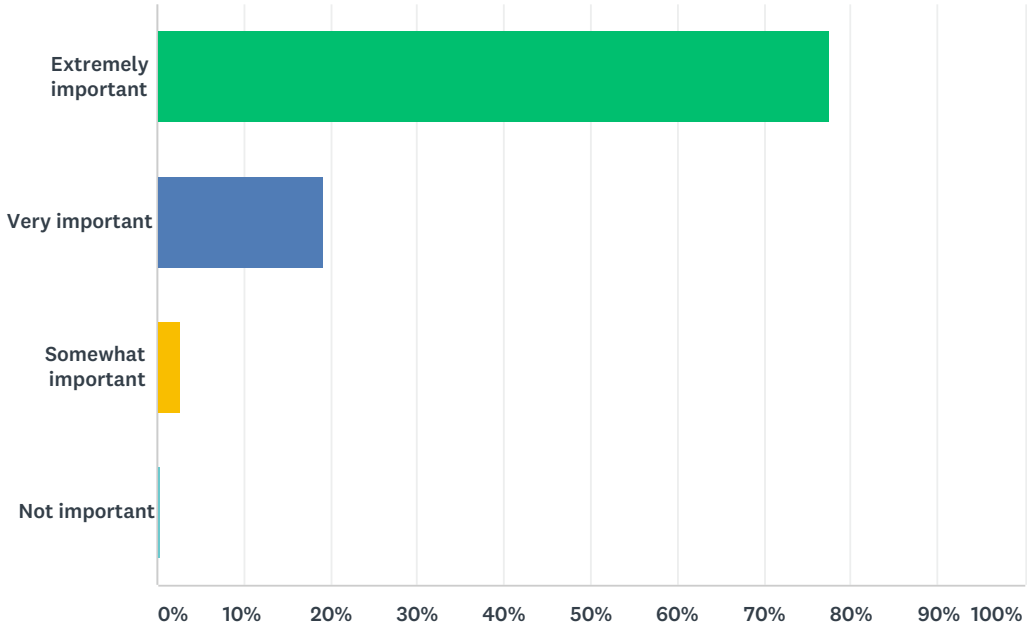
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ANSWER CHOICES	RESPONSES	
Extremely important	38.39%	200
Very important	44.53%	232
Somewhat important	15.55%	81
Not important	1.54%	8
TOTAL		521

Critical Facility Protection - These are actions taken to protect critical facilities which are important to the response efforts. Examples: placing backup generators in hospitals to ensure electrical power during a widespread power failure.

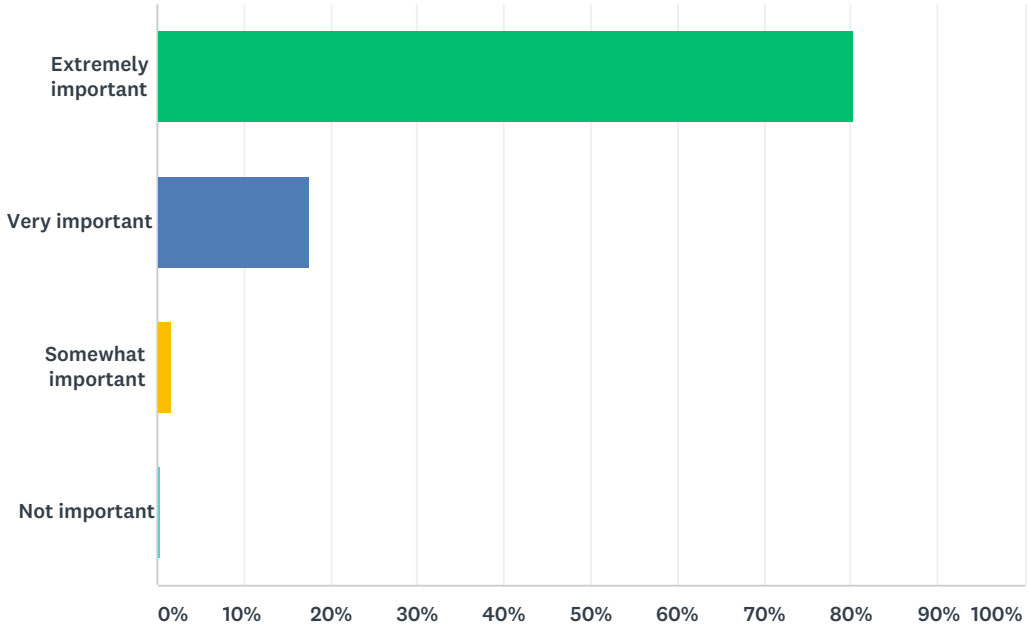
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ANSWER CHOICES	RESPONSES	
Extremely important	77.63%	406
Very important	19.31%	101
Somewhat important	2.68%	14
Not important	0.38%	2
TOTAL		523

Emergency Services - These are actions that protect people and property during and immediately after a hazard event.Examples: Warning systems, evacuation planning, emergency response training, and protection of critical emergency facilities or systems.

Answered: 522 Skipped: 199



ANSWER CHOICES	RESPONSES	
Extremely important	80.27%	419
Very important	17.62%	92
Somewhat important	1.72%	9
Not important	0.38%	2
TOTAL		522

2019 Hazard Awareness and Mitigation Survey
Summary of open-ended responses.

What information do you expect to receive from the Mat-Su Borough during a natural disaster?

Of the 496 responses received, most of them expect to receive the following:

Who, What, When, Where and Why
What the disaster is
Where is it located – affected areas
School status
Is there an evacuation
Location of Shelters
Location of Clean Water supplies
Location of Medical care or Triage locations
What should they do next
What roads are passable or not
What services and utilities are available or not available

Of the 496 responses received, a number of them indicated the Mat-Su response to the November 30, 2018 Earth Quake was lacking and that the information needed was not shared by the borough but instead by friends and neighbors via Facebook.

Any other comments/suggestions?

Of the 120 responses received on this question, the top comments included:

The Boroughs communication with their citizens during the November 30, 2018 Earth Quake was severely lacking;
The Borough needs to implement a Nixle Alert System;
Frequent updates to the public;
More public education is needed.

There were a number of response stating that the Borough needs to develop a plan to deal with the spruce bark beetles and the standing dead spruce. As well as planner and emergency managers needing to work together to plan for the community.

2019 Hazard Awareness and Mitigation Survey
Questions with open-ended responses

In which community do you live?

Answered: 579 Skipped 142

Answer Choices –	Responses –
Big Lake	36
Buffalo Mine Soapstone	6
Butte	16
Chase	2
Chickaloon	4
Fishhook	27
Gateway	30
Glacier View	1
Greater Farm Loop	6
Greater Palmer	26
Houston, City	15
Knik-Fairview	89
Lazy Mountain	8
Meadow Lakes	99
North Lakes	11
Palmer, City	45
Petersville	1
Point MacKenzie	7
Skwentna	1
South Knik River	3
South Lakes	10
Talkeetna	9
Tanaina	21
Trapper Creek	3
Wasilla, City	76
Willow	25

What information do you expect to receive from the Mat-Su Borough during a natural disaster?

Answered: 496 Skipped 225

1	Who what when where why
2	Where to receive help, what to do to aid the community, Impacts of the natural disaster
3	Affected areas, incident command location, emergency shelter availability, evacuation procedures, aid stations, etc.
4	Pertinent information to mine and others safety
5	What's happening, Where the risk, where to go if forced to evacuate. Updates
6	Updates, closures and alerts.
7	A bill
8	Shelter, maintaining safety in home (shutting off gas) keeping wells in working order etc. Where to find water, gas, food
9	What the disaster is and location. What to do next
10	Shelter and assistance center locations; essential businesses which are open
11	Updates on damaged areas, road conditions, evacuation centers at least every half hour
12	Frequent updates. Every 4 hours even if nothing new.
13	Everything that applies
14	What risks to expect
15	I would like to know what has happened, what dangers that are expected, if hospital is open and where to go for shelter,
16	Updates on the actual happenings. Where to go for assistance.
17	road systems problems
18	Emergency warnings by text and tv/radio
19	Information that is vetted and critical. People fear the unknown and act irrationally as a result. Time-sensitive info is #1. What's being done about it is #2.
20	Location, extents, severity, remission or expanding
21	Immediate communication for information and updates.
22	Progress of mitigation
23	What and where it's happening and what to do
24	Closures, hazards, safe areas
25	Current information providing Snapshot of present situation—including known damages, event perimeter, outages of power, cell service or N-Gas—projections on repairs, locations of shelters, fuel, etc as necessary. Summary of current response activities and plans for future actions.
26	Type and size up of incident. Consistent updates in a timely manner. What the public can do to help. Where the public can go for help. What the public can do if they are not getting the help that is needed.
27	Shelter info, status of what is going on, and not waiting days to learn.
28	Location, Severity, Directions/Steps on what to do to help or where to go to get help.

29	Frequent updates, what is occurring where, what is being done by emergency responders, available resources we might need, precautions we could take, areas to avoid, etc. With frequent updates.
30	What is happening and where, what is currently being done, and where is a safe zone to head towards if evacuating
31	shelter locations, road outages
32	Best place to be for survival, most accessible roads for transportation, where medical help is available/located
33	Where to get help, who needs help,
34	Emergency info, where to go, what to do, areas affected, etc.
35	Warnings, power outage updates, road closures, emergency facilities...
36	Where to receive info, where to go
37	Where resources/shelter are available if needed
38	Depends on the disaster. I'm prepared for most, but fire is the one that needs frequent updates and status reports.
39	recommendations, to do list
40	Alerts and updates
41	Severity, relief efforts, available assistance, alternate routes
42	Infrastructure intact? Egress, Services available, help center locations.
43	Open roads
44	Where, what, time, when
45	Phone numbers and websites for more info, Contact info for assistance with personal property damage and pets, school status updates, shelter locations, food/water assistance
46	Updates frequently places to go
47	Areas affected extent of damage, evacuation / routes / shelter in place, safe zones.
48	Anything pertaining to safety in the Mat Su Valley
49	Immediate danger, followed by frequent updates
50	Safety alerts
51	More frequent updates; Risks to people and property; what's being done; what I need to do or not do. Who is affected
52	Where it is occurring, what roads/ systems are impacted, progress in cleanup, prognosis
53	Flood or fire
54	exact location affected, emergency procedures enacted and/or recommended
55	Information on where to evacuate to, power, shelters, medical assistance availability, food and water, precautions related to movement and where and how to contact emergency services
56	Shelters available (if needed), Organizations available to help, expected assessment and recovery timeline, availability of drinking water, and supplies
57	Everything
58	The Borough never done anything! I don't expect they will ever do anything new!
59	Florence frequent updates

60	Evac info if necessary, what areas are affected, where shelters are, where volunteers (EMT's, Fire, Security and non-professionals) can meet to be of assistance, where supplies might be given out (water, food, necessities), status updates
61	Regular updates on the status of the situation
62	Updated status. Active shelters. Transportation changes. Contact information
63	Road closures, weather statements, any other problems occurring
64	Current danger and community direction
65	road information, utility info, public facility closures
66	I would love if they had a system similar to Anchorage where they send out text messages. Or have updates and information on Facebook.
67	Info that effects my home, work, transportation and local activities that are impacted
68	Being kept informed, updates
69	What happened/where/risks/shelters/contact information for places to get help
70	Frequent updates. Locations of the disaster in a timely manner
71	Information about what is happening, what people can/should do, emergency shelters and resources.
72	Updates in a timely manner
73	Where the disaster is and where to evacuate if necessary
74	Locations to avoid where Red Cross is set up at
75	Real time updates and pictures, hearing from our elected officials and Chief of Emergency services.
76	Updates on emergency status and resources
77	Status updates to show transparency & allow people to interpret what's going on.
78	At least daily updates. Also announcements relevant to updated safety and education.
79	Areas of risk, evacuation directions
80	daily updates on active measures being taken
81	Status updates on what damage exists, current precautions to take, areas to avoid, what is being done, and how the borough is working to address things.
82	Anything and everything relating to the natural disaster
83	What is going on & how to react
84	Conditions and safe places
85	Alerts
86	Updates, more updates, more updates!
87	Updates, personal safety
88	Surrounding effects, where to go, imminent dangers
89	A lot more information about fires would be nice. I seem to know more about the fires outside my area then in
90	All pertinent information
91	Announcements and updates of what is happening and what is being done
92	none
93	status of affected infastructure
94	If you need assistance a place to go to or a number to call for help

95	Emergency facilities, evacuation centers, road closures
96	Safety and clean up info
97	Damaged roads, areas to avoid, closures of offices/stores/retail, where to go/call for assistance, school updates
98	Recovery updates
99	What is happening. Where the main concerns are located. What is expected of me.
100	What broke and what still works
101	Whether I should stay where I am or evacuate; what services are available and how to contact them; a copy of the disaster response plan so I can get information without having to wait for a press conference.
102	How to access emergency services/shelter, danger/work zones to avoid, special information as needed
103	Evacuation information; road conditions; where to shelter; ETA of utility repairs such as power and/or gas lines, damaged roadway repairs, condition of drinking water
104	all relevant information about safety
105	What to do, where to go, what is safe or not, when services will be restored
106	Immediate and ongoing info regarding damage assessments and recommended precaution measures.
107	How CERT is to be used, anything more than what was used in November 2018
108	Clear, factual info re the disaster and areas affected.
109	Evacuation plan
110	Text alerts, Social media and airwave presence. Information speaking to severity, Continued updates to increase awareness, suggested safety precautions, available assistance information, proactive outreach to at risk individuals
111	Specific information as to impact to the community, the anticipated duration of the event, efforts to mitigate the natural disaster, any identified short falls to the mitigation and how to best coordinate volunteer assistance and anticipated duration of the event.
112	Weather alerts, road hazards, power outages
113	Instructions on protective actions; status updates (road closures, areas to avoid, availability of services)
114	evacuation , route, location
115	Road closures, shelter areas, hazard areas to avoid
116	Road and bridge condition, Public Safty facility condition, Public Health Facility condition, Schools Facility Condition, Electrical Power Condition.
117	First aid, Red Cross stations, contact areas, where is fresh water available if needed. What facilities available who or what areas need most help,
118	Honestly not much after the 2018 earthquake. We had purchased hand held radios and were monitoring MatCom for accurate infrastructure updates. While power was restored quickly that wasn't the MSB to do it.
119	What is wrong and what should I do?
120	Warnings, action plans, post event updates
121	Radio news

122	Areas affected, road closures.
123	Reminders of what to keep on hand and up to date in case of an emergency. Safe houses or meeting places in case of evacuations. The process to which we will receive direction during an emergency.
124	Where to go for help. Keep update on natural disaster.
125	Resources available, closures, travel conditions, emergency service status and reporting options,
126	Status updates, Areas Affected, Road Closures, Places to Avoid, Actions to Take, Where and how to recieve aid if needed
127	Where to go, where to avoid
128	Safe places to excess basic needs.
129	what is wrong, what is the estimated timeline on fixing and updates on the way
130	Whatever emergency help needed
131	Whatever is needed to keep safe. Places to avoid, etc.
132	Immediate actions to take. Damage updates. Road conditions. Relief available.
133	Evacuation orders
134	Road and bridge conditions. Wildfire location and projections.
135	Updates
136	Warnings and updates
137	Where to go for help
138	Frequent updates on all relative details
139	alerts
140	Status, Response Actions, Utility updates
141	Status updates, safety measures, available resources
142	Faster updates
143	Road closures, status of electrical grid, natural gas supply status
144	Updates of situation, resources available
145	Status of the event. Steps to take to mitigate. Places to seek assistance. Warnings.
146	Critical resources available
147	The 5 W's. Who, what, where, when and why
148	Warnings, where to get help
149	All
150	More than during the earthquake
151	Evacuations, Road conditions, shelters, etc
152	What’s happening, where, effects, what to do
153	How to get help, updated information
154	Nothing
155	sheltering, services, road closures
156	pertinent information, services and help available etc
157	Location of goods, water.. housing
158	Damage assessment, Repair schedule, services/roads affected

159	Updates of what to do to access things
160	updates on public safety issues- road closures, compromised infrastructure, etc
161	The dangers, what areas to avoid, what precautions we need to take
162	Updates on situations and resolutions
163	Response plans
164	An alert sent by text.
165	Where shelters are, what the current priorities are for 1st responders
166	Assistance locations, communication from MSB officials,
167	Radio needed more info on matsu NPT just Anchorage. TV was all about Anchorage too. Matsu needed to know what was happening, where to go if house was unsafe and where to get supplies.
168	Danger areas, shelters, regular mitigation progress reports.
169	safe havens, timelines of expected disaster - if applicable, recovery resources
170	evacuation, shelters, food and water supplies
171	Road conditions, power situation
172	Facts
173	What the magnitude of the disaster and the places that can be a safe place to go
174	More information than what we received after the earthquake
175	Resource help information. Knowledge of impacts and things to do lists about the type of disaster.
176	none, but info on where to get clean water, or shelter if they are needed
177	An update or text alert of some sort
178	Shelter areas, hazards to avoid
179	Certain safety
180	Progress and construction updates as well as closed pathways. Which crews are working where and how to get home safe and happy to your family and kids (if you have any or ARE)
181	Severity of issue, ways to protect or keep safe, estimated length
182	Help without hear say.
183	Where to go road updates
184	How/where to learn about resources and how the community can help each other in times of need
185	Warnings, road condition info, actions to take, etc
186	Regular updates on repairs and detours
187	Where to go for help with what you need and don’t have
188	Information was hard to come by. need to keep people better informed of whats going on
189	Instructions
190	Shelter locations, gas stations fuel , Grocery stores that are open
191	Anything pertaining to my immediate area.
192	Nature of the hazard and precautions and it active to take.
193	Where to get water what NOT to do

194	Safety, Medical, Food & Water
195	Everything
196	Safety, detour information, utility
197	All of it. Closures, dangers, timelines
198	Immediate notification via email, television and media announcements
199	Information on causes, hazards, evacuations, and assistance
200	Emergency declarations and periodic updates
201	Road hazards, timeline for repairs, recommendations for travel
202	Safety updates road closures
203	Fast updates
204	What roads are unusable, power outages, potential dangers.
205	What to do and what to expect.
206	What services can be used to get help and support.
207	Timeframes, shelter locations
208	anything that i could possibly need to know or would affect me
209	Evacuation and shelter info
210	Damages, FEMA station, death toll, emergency services
211	Status of important services such as roads and utility services
212	Timely updates and where to go for assistance
213	Road closures, major infrastructure damage, evacuation routes, safe places to go if home unavailable, how we can help
214	Road conditions, safety issues, lines down, fires, shelter if necessary, damages etc
215	Condition of roads, condition of power distribution, condition of health care facilities, conditions of schools.
216	Resources available
217	What is the current situation
218	Updates on where to find help if it's needed is the main thing.
219	Safety, disaster response, where help is needed
220	How it effects me, what are available resources
221	Evacuation and shelters
222	Danger to my community during fire. Closures of hospitals and emergency centers
223	Updates
224	Safety Information
225	Road closures, power/service outage areas, contact info for various agencies
226	At minimum, information about road closures, flood or wildfire hazards, and shelters. The borough really dropped the ball after the earthquake.
227	Road and utility updates, scope and location of damage (if known), shelters, organized response plans
228	Shelters, closures, and plans for recovery
229	I think Municipality of Anchorage did an amazing job of informing the community during the earthquake & the MSB should look at how they responded.
230	What actions are being taken by professionals.

231	Nothing
232	Road closures, utilities outages, emergency shelter locations
233	News
234	Roads, fires, cleanup, ems
235	Extent of damage.
236	Resource location, Gathering Center/areas
237	Updates on the event & where we can get help
238	A radio broadcast with shelter information.
239	Government is still functioning, Brief explanation of what hazard is occurring and what is expected, if needed Medical triage points, shelter operations locations or shelter in place notification, PODs operations and locations, VOAD and Volunteers activation and assembly points, etc...
240	Status of what's damaged, estimated recovery, available resources, etc
241	Updates... there weren't ANY during that event... only updates and information for the Glenn and Anchorage
242	Road damage, major areas effected
243	Safe locations, what to expect, what to do, just hearing the voice of reason and togetherness...just freaking be there!
244	Evacuation notices, shelters, hazards
245	Just normal updates
246	Open/closed roads.
247	Where emergency services can be found. Volunteer opportunity, damage reports, instructions on what to do next, and when to expect help or services to resume
248	Road closures, where to get supplies,
249	Borough Response to Infrastructure Damage
250	Place on fire
251	Latest updates
252	Road Closures, Safety Measures to be taken
253	What is going on, what we can do to keep safe, and where to go if we need to flee.
254	If everyone is safe
255	Supply spots,
256	Options for help, options to help. When we had the earthquake HHS and HMS were crazy, a lot of parents couldn't be reached. I started calling my kids friends parents and asking if they wanted me to take their kids to my house. They tried to handle it but need a volunteer committee to come in and help get kids home and deal with everything
257	Road conditions, shelter locations, status of utility repairs
258	What is happening and where is the best place to evacuate to if that needs to happen.
259	Type of disaster / road closures / where to go for help /
260	where do i get help
261	Emergency services; evacuation notices; tsunami warnings
262	Safety updates, warnings

263	Emergency instructions, updates on damage to infrastructure
264	Safety protocols
265	Alerts, Solutions
266	Warnings of possible danger. What to do after they happen.
267	Depends on the severity of the disaster.
268	What physical and or health risks there are.
269	Updates and progress
270	Alerts
271	Road situation, detours. Accessibility to shelters, where volunteers are needed to help.
272	Resources, safe-zones, emergency assistance
273	Text notification
274	how long it will last and where
275	Effected area & resources available
276	Updates on critical infrastructure, i.e. roads, hospitals, power.
277	What happened and how bad our accident was
278	E-VAC routes
279	Where to go if your home was destroyed. Level of disaster. Reminder to check on your neighbors if able.
280	Updates on a regular basis. What areas to avoid. Alternative routes around a disaster area. Available shelter if needed. Available resources.
281	All of it
282	Evacuation necessity
283	How soon is help on the way?
284	Where resources are if needed
285	Not much
286	Little to none. Possibly some announcements on Facebook that float around.
287	Severity of disaster, where to find help
288	Updates on severity, location,
289	Status updates, services available, known and potential dangers.,
290	Where to go, where to avoid, if our water is safe
291	Road closures, tsunami warnings, anything about imminent danger
292	Updates on situation. Shelter. Food/water.
293	How to find safety & connect with family
294	School Notices (Above All SO Important), Tsunami Warnings, Road Closures, Power Outages, Man just any information! When something happens like that big earthquake just be there and send us a msg letting us know you are there. Anything! Just to know someone is there.
295	Roads, medical info
296	Road conditions
297	What it is and what to do
298	What's going on and what should be done in response
299	Where to tune in, where to go, what to do/not to do

300	What is happening, where to go, what to do, how to access resources, what routes are safe, where shelters are, what is open/closed
301	Clear and concise information as best as possible via social media/nixle, Emergency alerts via mobile carriers.
302	What to do
303	Mitigation and recovery help
304	Updates on road closures, hazards, emergency services
305	Which roads/intersections have been compromised, how long utilities would be out
306	Status of roads, water, buildings
307	Updates as they are available
308	Whether to shelter in place or evacuate
309	Immediate shelter facilities, lists of local outreach resources available, economic recovery support, support of fire department information, support of earthquake information, support of flood information. I'm relying on the borough to be a hub of information that I can seek out in time of need.
310	Efforts that are underway and who/how to contact
311	Areas that are safe and areas to avoid
312	Resource availability, alternate routes/facilities
313	That they are aware and are working on a plan, within a reasonable amount of time. Basic acknowledgment of an issue.
314	Affected areas, emergency shelters, schools affected
315	Road closures, areas of danger.
316	I want to have regular updates on road conditions/closures, I want information about community support, information on what the borough is doing to assess damage and what the plan is going forward.
317	Infrastructure condition.
318	Current, accurate information regarding the nature of the disaster, the specific area affected, and information for the safety and well-being of me and my family.
319	Road closures, school closures, open shelter locations,
320	Better communication. Matsu residents had to get their news from Anchorage agencies.
321	Are we safe, are roads safe, are buildings safe, resources available,
322	Warnings, mainly.
323	Radio broadcast or facebook update.
324	When and where to evacuate to
325	Road closures, emergency assistance availability, evacuation procedures
326	Road reports, clean up, areas to stay away from, where to go to help or if need help
327	Announcement of disaster and frequent updates of status & location of emergency services.
328	What to do, where to go
329	Community resources for shelter, food, disaster updates
330	Critical infrastructure updates

331	Evacuations safe places
332	shelters Anything needed to assure safety , address transportation
333	Exactly what's going on and what we should do. Evacuate..
334	I expect to receive useless information since the administration muzzled the quality work of the public affairs staff during the last disaster (earthquake). Unconscionable idiocy.
335	More than what we got after the November 30th earthquake. Lots more.
336	What the disaster is, who is affected (or about to be), and what to do if help is needed.
337	Damages, shelters, future threats, evacuation routed
338	Updates on damage, affected areas, basic "what is going on" info
339	All
340	Current safety prognosis; If water and electric will be provided or safe; and emergency shelter info for families with dogs;
341	Closures such as borough roads, public offices and borough facilities. Overall status of the area and most impacted communities. Resources available to help those in need. Volunteer opportunities if applicable.
342	Impact areas, public danger, operational plan and recovery plan
343	Emergency alert
344	Warnings about imminent danger. I do not expect immediate status updates or even frequent updates, MSB should be focused on safety. I do not agree with the criticism of MSB not communicating enough from the earthquake.
345	Unsure
346	Where to go, what to avoid, estimated time for response/repair, regular updates.
347	Time sensitive up dates
348	Where to get help
349	What assistance is available
350	Area affected, what it is, where to get help if needed.
351	Closures, where safe locations are if a disaster happens
352	Road closures. Evac routes. Extent of disaster
353	Information as to what and where the problem areas are.
354	Road closures
355	What critical infrastructure is open\closed. What are critical warnings and alerts. What helps is or isn't needed.
356	Scope of disaster, help available, how I can help
357	Extent of, ie where roads/travel not good, availability of needed supplies/support, important phone numbers
358	Depends upon how large, but road conditions would be primarily important
359	Areas to be avoided, road closures.
360	What to do. Where to get help and resources, information on food and medical supplies
361	Status of roads, utilities, and emergency services. Instructions on what citizens can do to assist themselves and disaster services in the recovery process.

362	With the recent earthquake as an example. .little to none.
363	Whether evacuation is necessary, how others are doing, what expectations they have from me and my family.
364	Some form of alert of what to do/where to go. Emergency text/tv broadcast
365	Water quality, safety of city, all clear
366	Open/closed areas disaster safe zone for people to go to if need to ie: home flooded/gone
367	Quick communication and accurate facts who, what, where, when
368	Updates and health concerns.
369	Evacuation, shelter, detours
370	Closures, shelters, needs (food/blankets, etc)
371	Shelters, issues with roads, fire info
372	Warnings• emergency shelters available•updates
373	Public safety. Shelter info. Status updates
374	Safe harbor
375	What's going on, directions, what we should be doing.
376	Warning sirens anything so people will know that something is wrong like the lower 48 has.
377	Where to get help and where to help.
378	Places to go for help, resources we may need.
379	How the borough is responding and handling the situation
380	If roads are closed, what stores are open, shelters, utilities
381	What areas are impacted? What can be done to help? If areas need to be kept clear for maintenance or emergency crews? Detours to be expected?
382	Where disaster is affecting community, emergency shelters, emergency services announcements
383	Where to evacuate to for medical attention in the even of a mass casualty event
384	What's happen, where to go if shelter is needed for for help. What can we expect in the coming days.
385	Closures (roads, schools), where to get help
386	Services and utilities
387	What, where is the disaster and what to do(gas food supplies) and what is the eta for repairs
388	Updates
389	What's happening
390	Status of vital services, where assistance can be obtained, road closures
391	What it is and how it impacts me and my neighbors
392	Where, what, amount of danger
393	Location/area/distance—In a timely manner—follow up
394	Situation reports on infrastructure, situation reports on emergency itself
395	Where to go, what to expect, what options are available

396	Extent of initial damage, safe locations, instructions on what to do, and instructions on what should be considered an emergency requiring 911 calls.
397	information about the disaster, where aid is available.
398	Where to find basics to sustain life such as clean water
399	What is going on..... Where to find help
400	Road conditions, evacuation, safe meeting spot,
401	Updates regarding power, heat, transportation, and crisis centers if needed.
402	COMMUNICATION of any sort would be nice. Road closures, emergency services provided and where, any updates
403	Well, more than was given following the 11/30 earthquake. Take a page out of Anchorage's play book. They did it well.
404	Everything
405	Call even if it’s a recording
406	Information regarding what aid is available and how to proceed to utilize it. Information regarding what borough facilities and roads are functional or closed.
407	Roads, bridges that are effected. Water problems.
408	Service restoration was nfo
409	Response priority
410	Based on the last disaster, I don't expect the Borough will provide us anything.
411	As much info as possible
412	Current updates on actions the borough is taking during a disaster
413	updates on damage to road, buildings, power outages
414	damage report, ie roads, buildings,is water safe to drink and where shelters and red cross will be located
415	Closures of roads/services; shelters; medical help
416	Alert Message on Radio
417	Critical information
418	Status Updates on critical services - roads, schools, power etc and estimated repair times
419	Factual details of disaster, further direction if necessary, ways to help
420	regular notifications of ongoing hazards, instructions, updates
421	locations of shelters, water sources, I don't expect much
422	Road closures, community shelters, rescue, medical assistance
423	Alerts about conditions that may be a danger to me and my home, where to check for updates, where to go in the event of an evacuation.
424	timing of event and how serious
425	Infrastructure roads bridges EMS

426	Government response actions. Road closures and plan to reopen. Specific action being taken to restore function, not just generic crap like “staff is evaluating the situation” etc. CURRENT status of situation on social media, it is imperative that you are the first to post updates, not last. These updates can be amended as new info comes in and they do not have to be completely verified by staff as long as they are the best info at the time. Update at least hourly for the first few hours.
427	affected location, time to mitigate, ways to help
428	Life and Safety information - sheltering, evacuate, shelter in place, road closures, where to find updated information etc.
429	Where to go, time until services are restored, where to take debris, how to get food, how to get fuel for generators.
430	Warning, safety precaution info, general info, disaster relief option info
431	emergency information, evacuation details, timely facts
432	What is happening in my area. How is MSB (or others) addressing the situation. Are there resources available, i.e., shelter, etc. Where can I get information and updates.
433	Scoping statement on disaster and resource applications for mitigation or management of response.
434	damage assessment, hazard report, shelter locations, notification of situational risks
435	Whatever can be provided.
436	Information on what has happened
437	Type/nature and location of the event; degree/seriousness; area/population effected; status of reaction to it; collateral effects and damage anticipated; duration if known
438	Where to get help
439	WHEN, WHERE, WHAT, HOW TO PROTECT SELF AND FAMILY
440	Current happenings and status, updated warnings
441	shelters and risk areas
442	emergency procedures/policies
443	Safety
444	actions being taken and hazard location
445	Reports on Status, Locations, Impacted Areas, and Where to Help or Volunteer.
446	Extent of disaster, extent of damage, places to go to receive help
447	road reports, available shelter, available food and fuel, available medical
448	Risks to area residents and mitigation plans.
449	NONE!!!
450	I want to receive immediate emergency info via text messages. MSB should be using the Nixle system to provide this like Anchorage does.
451	Who, What, When, Where, Why... who is the point of contact for which type of question, what is msb doing about the disaster, where are affected areas and where can we get help, when can we expect the next update, when should we contact someone, what is the reasoning behind decisions/recommendations... basically, just be transparent and open with communication!
452	Press release

453	Shelters. status of roads. instructions if necessary. water quality. outages
454	Emergency information alerts, safe travel routes
455	updates, that are timely like with the 2012 flood.
456	Road Closures
457	Shelter info
458	Every detail I need to know to keep me and my family safe during a disaster. Frequent updates, interaction with the PIO's
459	Life Safety-evacuation-sheltering
460	Updated website with information of the disaster, unlike what happened during the earthquake 11/18. The Borough did a horrible job I was out of state and received more information from FOX News and not from my local government.
461	affected area
462	The Disaster, Location, Road Conditions, Drinking Water Condition, Safe Harbor, Power Outages, Weather Forecast,
463	Conditions of road, public buildings, and businesses. Instructions in the event of evacuations and possible further threats.
464	updates
465	I expect to receive information from the State not the Borough
466	Status of affected areas
467	Exactly what is going on, not no news is good news.
468	If applicable: shelter locations, pertinent phone numbers/email addresses, text/email updates
469	Any.
470	Evacuation route, emergency shelters, emergency water source
471	situation, location, risk to my area, how to help in other areas,
472	1) If people need help, as a citizen how we can do that. 2) If roads are not passable, where they are. 3) Where to go.
473	What is the disaster? Where it is at? Who will it affect? Updates as they are available.
474	Where to go if shelter is needed, how to contact local authorities, what the MSB is doing on a daily basis towards disaster mitigation
475	status of disaster, where to go, what to expect
476	Steps elected officials are taking to inform the public
477	updates of damage to roads, public facilities, hazards (drinking water, etc)
478	2-3 updates daily, what to do, what to help, where to go
479	Status of what has happened, what measures are being taken, any warnings.
480	Where to go for help, how bad it is in other areas, how I can help others, where do I go to work
481	I would expect to be informed of where you should go in the event of evacuation and what areas are being affected.
482	Information on the nature of the disaster and a safe place to go (or directions to shelter in place).
483	Regular updates of damages, road closures, building closures,

484	Safety mesages, clean up, status updates thru to completion of all activities
485	conditions, access to critical facilities, instructions on safety
486	Any relevant updates as quickly as possible, as well as updates that things are proceeding and nothing to worry about.
487	The type, size, impact of the disaster
488	Evacuation recommendations, road/bridge closures, damaged areas/regions, safe zones/collection points/evacuation areas, points of distribution, safe/unsafe water info, where to find information, how to document damage, recovery progress that is being made.
489	Location of impacted areas, evacuation and sheltering notices, local, state and federal assistance information.
490	What the risks to life, health & safety are for MSB Residents. If water is safe to consume. Where shelters are located. Where food & water is located. That the situation is being managed with confidence by the MSB. All information is relayed to the Public.
491	Emergency shelter locations, warnings about damaged roadways
492	I would like regular scheduled updates (even if there is no update say that) and a centralized location to go and view all information pertaining to the disaster.
493	Shelter Locations; evacuation information and general updates on the type, location and status of the disaster.

Any other comments/suggestions?

Answered: 120 Skipped 601

1	A clear communication plan of who and how to communicate the emergency, shelter, services, what is open, what routes are safe etc is needed. During the 11/2018 earthquake the response was ridiculously unorganized, badly managed and did not reflect the needs of the community for information and assistance. To be blunt it was like small town 1980 Mat su... when we are a growing population center and can't depend on Anchorage for everything. And please believe Anchorage had it together during that earthquake. We listened to the radio on our cell phones for any information and the mat su didn't have any information or response that day.
2	a dedication Facebook page for announcements, issues, regulations
3	A reenactment of a natural disaster occurred a couple years ago. It helped me to realize where the what to do ring binder was located. It made me more aware that there was a plan in place already and made me aware of the needs within that plan. I recommend that these drills occur in some minor form every two years. This would help in keeping the knowledge of these plans in the face of the people who may need them most.
4	A way for citizens to report in from outlying areas, the on the ground immediate conditions. Social media or website for that would be useful. Also, individual emergency response areas (roads, bridges, fire, gas, etc) with dedicated emergency phone numbers to report issues. Better reporting to radio stations from Boro officials, with more updates.
5	After nov 30th quake I herd nothing from the Matsu Valley and when I reached out to the news media I was told that the were not receiving any updates through any government officials. Our local gov failed us. I'm new to Alaska but did have preparations in place in my vehicle and my home. When I finally ran out of water, I had no idea where I could get more. The people of the valley helped me on Facebook not the government. I ran out fast because I though my well was ok so I used my backup water to clean filters and such while it settled. It wasn't until Dec 1 that my well failed and I had used up my back up. No information on where to get this but not everyone uses social media. These are things that should go to local media to put out for people. The Matsu Valley government was a huge let down but the people stood strong and for that I am blessed. Thanks for asking. You don't know how to fix it if you don't know what to fix. I understand
6	All mitigation measures are extremely important but public education might be the most cost-effective. Public/private partnerships emphasizing localized needs may take time to develop but can yield longer-lasting results than expecting government to take care of it all. We're all responsible.
7	All of these are critical in their own sense and impact the other in some way.
8	As a current emergency responder in the valley and during the 2018 earthquake, we need to improve our communications with the public during and after an disaster occurs. The public had very little information provided from emergency services leaders, especially Otto Feather. Furthermore, we need to educate our citizens on what is considered an emergency requiring 911 and what is not.
9	Assistance with fire hazard removal (beetle killed spruces)
10	Based on the few emergency situations I have experienced while living in the Mat-Su Borough, an excellent job of commmunication and response is being carried out.

11	Become a first class borough Stop the cycle of spending public money to clean up the mess made by poor development. Developers are taking short term profit at the expense of the public by building substandard roads everywhere, building subdivisions in swamps, building high density housing in inappropriate areas and creating 1 acre lots with insufficient room for replacement wells or replacement septic systems. The 10,000 foot useable space requirement is a joke, the paid engineers will always certify it or platting will waive it. The result is endless crappy development costing public money to fix when a “disaster “ (regular cycle of nature) strikes.
12	Being Proactive prevents a whole bunch of problems caused by being Reactive.
13	Clear concise communications by the MSB to each Community Council Area in the MatSu during a Catastrophic Event (like November's Earthquake) is paramount to saving lives and property. Without Assemblyman Jim Sykes coming to our meetings and briefing everyone on his own time at various Community Council Meetings, people through out this borough would've know a heck of a lot LESS. A deserving plug for a man that did his job right and serving those in his area. Thx
14	Communication from MSB
15	Communication from officials is most important immediately following a disaster and in the days following. Something like Nixel for the Matsu borough would be ideal.
16	Communication like roads bridges out, and planning for the public where to get supplies . A good borough emergency plan.
17	Communication. The borough as a government entity failed miserably on November 30th. Im still disgusted.
18	Communications during an emergency. With no power or cell phones this severely limits the options to stay informed. Most radio stations are based on Anchorage and reported its status during the earthquake, there was no mention of the valley. Regardless of the reason, unacceptable. Status updates during the emergency of resources available and known damage and/or hazard area affected.
19	Community preparedness education is key to the success in disaster resilience
20	Conduct COOP seminars and workshops for local businesses and service providers to help them build realistic COOP plans. Too often, their plans consist of "call the borough for help" as a first step. Some don't understand COOP or know where to start in developing a plan. The workshops can provide examples and experts to facilitate the process.
21	Cut down and remove every beetle kill trees in the Borough. They are of no benefit to man or nature and will only fuel future catastrophic fires. A good forest management plan is needed to clear underbrush and deadfall BEFORE the fire comes and ruins far more than just undeveloped areas. Open up all the forest lands in the MSB for people to cut free firewood from the beetle effected areas. If the goal is to protect "habitat", beetle kill removal should be a top priority.
22	Don't leave the people hanging. There was little to no information coming out after the earthquake. I don't have children, which means I don't have a child in school. However, the Mat Su School District gave out more info than anyone else. If it wasn't for watching the continued announcements given on the TV of the happenings in Anchorage, we would have known nothing.
23	During times of fire danger, it is ridiculous to allow burning. A lot of prevention is common sense. If the borough isn’t exercising it, And encouraging prevention through things like prolong burn bans, how can they possibly expect the few responsible/informed and educated residence to make a difference?

24	Educate home owners / landlords via meetings or mailings (meetings being the most important) about proper placement and anchoring of large appliances and furniture so they do not block exits during natural disasters, particularly earthquakes.
25	Emergency information as soon as possible.
26	Emergency services should include means to notify and communicate with people in the area.
27	Emphasis should be placed on food and water availability and secondarily fuel.
28	Encourage and educate neighborhood support groups to assist, help and aid the infant, elderly & disabled persons affected by said event. Professionals (emergency services) may not be able to get to victims and persons impacted by the event.
29	fix our roads, they are still damaged and many are likely to go soon
30	Focus on actual mitigation/prevention issues (dead spruce, ROW mowing, etc.)
31	Following plans like opening EOC
32	For public awareness and education: establish text or email alerts that residents can opt into, and advertise this widely. Newspaper notices, public meetings, etc. are way too slow.
33	Frequent updates to the public during an emergency can prevent misunderstandings, reduce anxiety, and elicit cooperation. Communication from the Borough during emergencies has been very minimal making it difficult for the public to make decisions during emergencies.
34	Get community councils active in communicating to their area residents (neighbors) about the above items 6-11. Some neighbors are recluse and need to be approached by people in their community to establish a friendship or familiarity for any help they may need for survival.
35	Get nixle system for the borough for emergency situations.
36	Get the community United without paying government People, who have proven to misuse the People's money.
37	Government should have readily available information of risks of various types: -flood plain areas -areas without readily available fire protection services -areas with bad water or lack of available -potable water (areas you can't put a well or where there is contaminated aquifers) -areas where it is unsafe to traverse (think mud flats) Government should also have maps of emergency shelters, evacuation routes and contact information about where to find emergency services.
38	Hard to rank importance here. Any given item is worth someone's life or well being.
39	Have schools, community centers, libraries and other public facilities stocked with water and other emergency supplies; in case of natural disasters. This will give those who are in need a temporary place to stay, until other arrangements can be made.
40	I am very supportive of proactive, sensible planning for our communities. We should limit sprawl, consider impact fees beyond the core area and never give up educating people on the cost of living beyond density. Involving and informing the public is money well spent.
41	I have issues with the borough spending money to relocate people who choose to build on a river that they know is eroding and shifting at all times .People do need to step up and take responsibility for their own choices at times

42	I have just been made aware of my age as of lately and these old timers make me feel like I have a long happy life ahead of me if I just quit asking so many damn questions and follow my gut on what I know to be right. It seems like as soon as I do the dishes in my house and get nice and comfy... before I even blink there's a pile of trash in the sink and I'm the only one to take care of that trash cuz it's MINE. I dunno... not a very effective speaker to play music in my house something's come in all scratchy
43	I live on Montana creek road,the fire was in my back yard and my home was a staging place. First hand I watched these brave men and women work long hot hours saving my home and the neighbors. They were quiet,well organized,professional. Each one of them we talked with, our own and out of state are heroes in my opinion. I can not praise them all enough. Wonderful wonderful human Angel's. The best . Thank you.
44	I think an important component of disaster response is educating the public about what happens when they don't have their children with them. Are schools supposed to keep kids? What if teachers have children in childcare that they need to go pick up? Are teachers obligated to stay at work? What if they have family members who need help?
45	I think better planning when approving subdivisions. I'm off shrock and Wilmington and we have only one way in and out of our neighborhood. If there is a fire we have no way out.
46	I think communication is extremely important during an emergency situation, and I think those channels of communication must be developed prior to the crisis.
47	I think getting the EOC to invest in one common operating picture would be beneficial, there are to many different software in the EOC that dont talk to each other making it very difficult in a time of great stress to communicate effective information to the decision makers.
48	I think the borough should find a way to do this with less taxes. The roads are crapp and only getting worse but taxes are just getting higher. The hospital has a backup gen and that is something that shouldn't be paid for by the tax payers.
49	i was looking at the tubs i prepared immediately after the earthquake. i realized i still have some things to take care of. people grow complacent, they forget. remind us. teach us. urge us to prepare. show us HOW to prepare. i have 6 tubs, marked. i have a generator to plug in my furnace. i was warm after no power till 430pm. practical matters: toileting, water, pet gear, to go bag, text, don't call, etc. etc.
50	I was very disappointed even discussed with fema so an alternative to them would be great
51	I would hope everyone would have the ability to be self-sufficient, but I realize this is not the case. Sad. Hopefully we will not have another Miller's Reach or 1964 earthquake.
52	I would like to see more public fresh water availibility in our community. Also, I worked with the seniors after our earthquake and noticed in damaged homes many of them needing availability to low cost showers.
53	If communications are down? How will we all connect to get the information needed.

54	I'm going to skip the rest, because is is pretty redundant, but will bring up one issue that needs to be dealt with. We live in an area that has only one way in, or out. Over 80 families live here now, and an alternate route to get in or out is highly needed. It was on the STIP at one time, but it was pulled for no apparent reason. Right now, the river isn't high, yet water is running right next to the road, and could cross the road even if the river wan't at flood stage. Damage from the Nov. earthquake left 2 faults, within 10-15' of the main road. One has now slid about 20' down the bank, and is continuing to slide down. If we had a large rain event, it could at some point encroach on the road, and block access. Public works has been informed about it, yet, no response. Sounds about normal.
55	Implement the Nixle system. Almost everyone has a mobile phone on them all the time and text messages provide an almost instantaneous way to provide emergency information to residents.
56	In the hours after the November 30th earthquake, the Anchorage radio stations that stayed on the air provided a valuable service sharing information on the extent of the damage, reporting risks & safety hazards and giving simple safety reminders. Once you survive the event, stay safe, check on your neighbor.
57	In this age of social media; just keeping the Mat-Su Borough's webpage/FB page up-to-the-minute with any and all updates is critical. Seems like people start to panic if no one is telling them it's okay.
58	Information classes to teach people show them what to do in emergency. You can tell on paper form but to show explain in person would better service people
59	Information is key. the more people have, the more able they are to help themselves. I sat in my truck after the earthquake tuned to 100.9 (a Valley radio station) and there was only information about Anchorage and the glenn.. zero information about the valley... i wanted to go pick up my child from school... didn't even know if i could... why?? NO INFORMATION
60	Is there a borough Emergency Operations Plan? Anchorage has their's posted on their web site. The Matsu Borough likely has one, but it should be made public on their web site as well. After the limited info debacle of the earthquake, where a lack of a real, actionable public communications plan was evident (or a lack of buy-in by borough/DES administrators), what's the plan's status now, and what is it? The last publicly-posted communications plan (on ready.alaska.gov) was from 2014 and was centered around the radio-driven emergency broadcasting system. Was that used for the Montana Creek fire? Has it been updated since 2014? Get on board with Nixle. Even Houston uses it, Anchorage uses it to great effect, but the Matsu Borough limits itself to social media, which only a portion of the folks here use, and the nature of FB is NOT reliable, quick information - Borough feeds can get lost in the static of other posts. Almost everyone has texting. Nixle is the best tool out there for emergency information dissemination.
61	Is this survey to assess the public's wants and/or needs in order to implement a reason to increase or add new taxes?
62	It is important to teach homeowners to be prepared for emergencies. Generators and solar panels should be made available to all homeowners.
63	Keep up the good work with getting important information out and keeping us updated.

64	Keeping the public informed across all avenues available between tv, local/statewide news, radio, ham radio, all mainstream social media. We learned alot from the November 2018 earthquake. Also having ASL interpreters for visual social media news crews etc and for those who use telephones and need the relay systems for typing instead of verbal communication.
65	Maintain a constant communications method, radio, Facebook real-time, or similar, in the initial hours of a natural disaster. Waiting for scheduled updates is ineffective as people in need of information generally are operating on different priorities.
66	Making all police troopers and Em's radio channels available for listening on scanners
67	Many people don't plan. The more information available to the general public during a natural disaster calms the populous.
68	Medical emergency services are severely lacking. Why are firefighters not being trained as emt's and paramedics like they are everywhere else in the world. During a natural disaster medical services are going to be stretched thin. Especially the ambulances.
69	More frequent radio updates, or perhaps a radio station everyone would know to go to for a continuous cycle of information, updated frequently.
70	More outreach in schools, make it ubiquitous (think Stop.Drop.Roll) and universal (such as firewise, family plans for evacuation/emergency supplies). I think you guys are doing a fabulous job already, but obviously there were some significant outreach issues during the actual quake that the "higher ups" probably should have nipped a little quicker.
71	More public awareness campaigns
72	MSB very very bad at protecting critical facilities. Expanding Lagoon in a floodplain and not even contacting adjacent land owners...Uffdah
73	Need a program to take down dead spruce on public lands.
74	Need more info as to entities than can assist homeowners to make their homes safer from wildfires, floods and other natural disasters.
75	Need more roads
76	Neighborhood plans to check on residents, especially those who might be limited physically or aged, with info gathered in central place.
77	Nixle Alert system: When the Malaspina and Talkeetna fires started this summer, I got constant Nixle alerts. I live in Meadow Lakes...far, far from those fires. However, when there was an active shooter situation IN MY NEIGHBORHOOD NEAR MY HOME today, I got NO Nixle alert! - Make sure the Nixle alerts and the emergency alerts that are sent out to cell phones are accurate and sent to the people who are affected.
78	Nope:)
79	Number 7 is the responsibility of the private property owner.
80	Offer some community first aid courses. How to properly treat bleeding, burns, and maybe some basic splinting ect.
81	Outreach to the public and real estate professional helps educate the population and gets them into the borough to inquire about steps to take to prevent a hazardous situation.

82	Please listen. The borough never enforces Alaska state code or there own building codes. Big lake has a ton of illegal septics and lot line issues. They know about it and they don't care. The borough never enforces a thing. They tell us lay people we need to pay more and more but they never do a thing. They are more concerned with ignoring things than they are at enforcing there own laws. During the earthquake they sucked big time!
83	Prevention, education, and planning are all critical elements. Coordinate the local response teams and the government entities so that there isn't confusion during an emergency. Lack of electricity and overload of cell phone systems prevented phone, television, and computers from working during our last earthquake. Think of your communication systems and how to get word out to everyone under those circumstances. In 1964, we relied on battery operated radios and ham radios for communication. The bright spot in the last earthquake was that all the training in our schools meant that every student reacted quickly and did as they had been trained. It worked. No one died. That wasn't just luck, it was training that paid off.
84	Prevention, which in the case of building codes and subdivision construction (being allowed in flood plains, etc.) is way behind and needs to be brought to the forefront. Emergency facilities must be maintained to ensure adequate resources are ready to 'pick up the pieces.' Emergency responders must be trained and equipped to manage the problem, mitigate the problem, and make up for the lack of planning and preparation on the part of the citizens.
85	Private property owners are in desperate need of grants to remove beetle kill. This is the best way to help mitigate wildfires.
86	Provide hassle free point of contact information for concerned citizens and to answer questions. Provide ability for trained personnel to do onsite surveys and provide feedback to residents. Ie hazard mitigation, firewise, etc.
87	Put the public information office back in charge of putting information out to the public. They always did a good job. That changed when we had the earthquake. Should never have happened.
88	Quit letting people build along river areas such as the knik, they build monster houses in these flood areas and then we will have to pay for their mistake.
89	Quit wasting taxpayers money, and start cutting, I don't get any benefits from my tax dollars so pretty much winds up being taxation without representation! Looks like all of the legislation needs to be fired for doing such a piss poor job managing funds ! Time to make cuts! Including cuts to my taxes!
90	Some plan for elimination of dead was beetle killed trees needs to be implemented. For example, permit or allow open cutting of areas by companies or private individuals to remove dead trees.
91	Some type of plan should be implemented concerning the amount of standing dead spruce trees and the obvious potential of a large forest fire.

92	Status updates are very important to the general public. I am an Admin on several large Facebook groups and we constantly get questions. What's happening? Where can I find xyz? When will the (power, phones, Internet, whatever) be back? Do I need to evacuate? I need help, who do I call or where do I go? In the earthquake aftermath, we all did our best to find out things for ourselves to try to help out neighbors and friends. Had to rely on word of mouth and our own personal networks to find answers and get to those needing help. Quick and rapid response of what to do or not do, what roads are open or not, where damages are, where or where not to be, emergency assistance (not worthy of a 911 call) are all important factors. People need to know what's going on in order to remain calm. It's very hard to keep people from freaking out when there is no information forthcoming.
93	Stop sending millions to private citizens who built poorly planned and constructed homes near beautiful views that are now literally eating their homes. Spend money on updating zoning, building, and right of way codes. Make navigable water ways public access! Enforce taxes on those shit hole homes that don't add siding to dodge taxes. Look forward towards creating a better valley, not back at what pits are available to throw money into.
94	Suggest an MSB critical incident website for posting event info, status, and safety based response options or resources available to individuals and in some cases communities - especially outlying communities such as Lake Louise and Skwentna as location examples. The Emergency Broadcast Services network could be used to initiate info dissemination and inform the public that the website is active and current. This would be especially useful during events such as forest fires or floods. The site could also be used to identify resources responding to an event to inform the public of actions being taken in response to an event, such as aviation response, road closures, medical assistance availability, shelter activation, etc.
95	Thank you for your hard work!
96	The borough doesn't need excuses to grow or expand its reach. It has only a few important functions. It should rein itself in and do a better job on those few things: schools, roads, emergency services. Reduce property taxes and impose a low sales tax, take care of its core responsibilities, and cut the rest. If it's important, then volunteers will step up. We have shunted far too much onto government.
97	The borough should help low income, elderly and handicapped with mitigation, for example helping clear dead trees from property.
98	The Borough should list major evacuation routes and location of shelter facilities
99	The cleanup and fixing of roadways was amazing. However the lack of information and places to seek was was very appalling.
100	The lack of response from the mayor and radio silence following the November earthquake was embarrassing. Just because we have a smaller population doesn't mean we should be left to fend for ourselves. Vine road was left open for days with people letting small children climb down into the craters during big aftershocks. The city should have blocked that off so all the idiots couldn't put their kids in danger.
101	The Mat Su needs a better way of communicating with the disabled community, such as the deaf, during a disaster. This is an area of emergency management that is seriously lacking.

102	The Mat-Su Borough should really look at urban planning to mitigate hazard vulnerability. The Mat-Su Borough continues to grow rapidly and there truly needs to be more time and energy put into how we are developing our community and that should include planners working closely with emergency management to ensure there is a real understanding of known hazards in the area, and community participation and empowerment to help build a more resilient community. Planners should be a part of pre-disaster and post disaster recovery planning to gain a better understanding of how to mitigate the risk exposures to threats and hazards, and to help determine the community's unique needs and goals for recovery and resilience as part of their planning process. Emergency management responds to disasters resulting from hazards, they can provide valuable insight on areas that where future development should not be allowed. Land use planning is not something that should be done without input from the people in the community who will be utilizing lands and infrastructure in the area, and emergency management who plan and train to respond to hazards and can provide planners with critical information that can help mitigate hazard vulnerability. Protecting natural resources, avoiding hazards, public information, education and outreach, restricting development in flood plains, can all be accomplished by cultivating relationships and partnerships with key stakeholders within the community. There needs to be community engagement in the planning process, it can be painful, but it is well worth it in the end to have that public buy in. With regard to the importance of outreach and education: There are many challenges for protecting private infrastructure. The best way to encourage and increase the likelihood of hazard mitigation with regards to private infrastructure is through outreach and education making people aware of how to be prepared for disasters.
103	The MSB needs to improve the way it communicates with the public. The MSB provided little to no information after the earthquake. Anchorage provided much better information. Prevent and Plan and quick Reacting!
104	The ongoing information campaign is vital. People need to be regularly reminded of natural hazards and the potential for disaster. We especially need plans for our school children whose parents might be unable to come to the Valley from Anchorage in an emergency situation (say the bridges are destroyed.) The schools no longer have functioning kitchens and therefore there is little food storage there.
105	The way the earthquake disaster was handled discouraged many. Running a process through three agencies and still receiving a do not qualify after one or two is confusing and wrong. It should only be one application even if it goes to each one. They all ask for the same information but worded differently.
106	These actions all require funding to implement, which people in the Mat-Su historically oppose. We need to somehow change this mindset.
107	This past earthquake seemed as though no one knew what was going on - or at least it wasn't communicated to the general public in an expeditious manner. I really think, though, that EMS, Fire, and Police were working this event very efficiently and in an organized manner.
108	Timely reporting from the MSB to the public regarding the disaster is extremely important.
109	Train knowledgeable volunteers pro actively
110	Use the school district alert system to send updates when emergencies happen. People have already provided their cellphone and email and you'll catch a large portion of the community. Also MEA has an excellent communications model that could be replicated where they for use their Facebook page to keep residents up to date on power outages and confirm the power is back on through phone calls back to homeowners.

111	We desperately need more exit routes from KGB (to the Parks Hwy). We lost Vine in the earthquake and if anything would have happened to KGB many people would be stuck. I am afraid of the traffic if we ever had to do a quick fire evacuation.
112	What to do before emergency responders arrive. Keep a phone charged at all times for home emergencies...most homes don't have wired house phones anymore.
113	When there is a problem let the public know what it is. After the earthquake the Borough did a very poor job of informing the public and this was from the top down.
114	While November's earthquakes were bad enough, I believe that they were a warning to Alaska about preparedness. I'm extremely proud of how well everyone came together, restoring power so quickly, and fixing the roads that divide thousands of families daily due to work in anchorage. But, because we don't have cable and before power was restored, I was lost looking for information and help using just my phone. The phone is our new life line and I would like to see more information available quicker. I'm alone out here until my husband is able to get home from anchorage. It took 8 hours for him to get home. I was very scared. And everyone has 2 to 3 fur babies that can't be left alone after such an event. There needs to be help available for all of us. Especially those of us who are alone 85percent of the time and disabled to boot. Thanks for doing all we can do to help in recovery efforts after emergencies.
115	While these are all important I have in my career as a risk manager have found any time a government entity gets involved; an excessive amount of many is spent with very poor results. It all sounds great but, these kind of actions are rarely successful.
116	With no police powers in the borough, what should the public expect in the form of protection and enforcement of dangerous situations exist where life, safety and protection of property happens?
117	You failed miserably with public info after the earthquake.

MATANUSKA-SUSITNA BOROUGH
LOCAL EMERGENCY PLANNING COMMITTEE

NEW LOCATION
COTTONWOOD PUBLIC SAFETY BUILDING – STATION 65
680 N. SEWARD MERIDIAN PARKWAY, WASILLA

SEE SECOND PAGE FOR TELECONFERENCE INFORMATION

AGENDA

JANUARY 15, 2020 – 5:30 P.M.

I. CALL TO ORDER

II. ATTENDANCE / DETERMINATION OF QUORUM

III. APPROVAL OF AGENDA / INTRODUCTIONS

IV. APPROVAL OF MINUTES
- A. October 16, 2019

V. PERSONS TO BE HEARD
- A. School District

VI. REPORTS
- A. MSB Emergency Management
- B. Public Health
- C. Willow/Talkeetna/Glacier View CERT – May 2 Willow Emergency Preparedness Fair
- D. Palmer/Wasilla CERT
- E. Mat-Su Regional
- F. Preparedness Events – Expo in May

VII. OLD BUSINESS
- A. EOP Review
- B. Hazard Mitigation Plan Review – School District has 35 grant applications in and will work with Tammie - same with MSB Departments

VIII. NEW BUSINESS
- A. Vice Chairperson Election
- B. MSRMC – Hazard Vulnerability Assessment Review
- C. CFR 44 – Regulations for Plan Reviews and Hazard Planning for Hazmat

IX. INFORMATIONAL ITEMS

X. NEXT MEETING DATE
- A. April 15, 2020, 5:30 p.m.

XI. ADJOURNMENT

Activated Red Cross + 2 shelters 5 times during last 13 months

LEPC ADVISORY BOARD MEETING

JANUARY 15, 2020

	NAME	AGENCY
1	Kathy Watkins	Willow Cert
2	TAUNIE Boothby	MSB Planning
3	Tonya Holbrook	ARES
4	Michael Chmielewski	Radio Free Palmer
5	JENNIFER LEMAY	Borough Contractor
6	Patrick LeMay	Borough Contractor
7	Bea Adler	volunteer
8	Kevin Munson	MSHS
9	Missy cook	MSB
10	Daniel Hansen	ENSTAR
11	Jesse Christensen	Maple Springs
12	Talon Boeve	MSB - EOC
13	Kara Cahill	MSEMC
14	Rene Dillon	MSPHC
15	Margo Jones	TKA Cert
16	Mike Brown	MSBSD - guest speaker
17	Dawn Hicks	Mat-Su Public Health
18	Scott Bell	City of Wasilla - Menard parts
19	Jo Pawluk	DES/EOC

OVER

20	~~Kathy~~ Coppa	P/W CERT
21	Micah Weinstein (called in)	MTA
22	Bill Morrow (late arrival)	Red Cross
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Comment #	Date Received	Comment	Response/Action Taken
1	Jan. 31, 2020	Christian Hartley, Fire Chief of Houston: On page 11, current: "The City of Houston encompasses 22.4 sq. miles of land..." Please amend to "The City of Houston encompasses 25.3 sq. miles of land..." This is due to annexation of large parcels in 2016. An article on the annexation can be found at https://www.frontiersman.com/news/houston-annexation-approved-big-lake-ok-on-hold/article_1b42d99c-e7e0-11e4-b8ad-63a0a437ae6d.html<https://linkprotect.cudasvc.com/url?a=https%3a%2f%2fwww.frontiersman.com%2fnews%2fhouston-annexation-approved-big-lake-ok-on-hold%2farticle_1b42d99c-e7e0-11e4-b8ad-63a0a437ae6d.html&c=E,1,iRJYcGP_dtq5If8V78VZ0hWzL3vtNh1EFPgox1MRXP0URpmzqf0td5gwPe2fc5kyZTpsMTnrzWwKiQesweK20N8CrRoQv11XwRMvVLvMW6urk-eB&typo=1>. On page 101 (and elsewhere), Praetor is actually spelled Prator. On all documents, including city records of the Prator Lake Fire, there is no e. On page 101, it is mentioned that, "Investigations suggested that fireworks may have started the fire." Why is there no mention of the escaped campfire that was also investigated as a potential cause? In fact, fireworks were not evidenced to have caused the wildfire at all but the repeated inclusion of this sentence confuses many people to believe that it was proven. I understand the logic behind the sentence is to increase arguments against fireworks, but in fact no large wildfires have been found to be caused by fireworks. Additionally, the sentence at the paragraph conclusion that, "Unfortunately, the City derives a significant portion of its operating income from fireworks sales permits and has no plans to end the practice." is wholly inaccurate and misleading. The permits are only $5,000 each, so the $20,000 would hardly be considered a significant income to any city by any measure. If the document's author was trying to say that the sales tax revenue is of high monetary value to the city, that would also be incorrect. The actual tax paid by individual businesses is not public record, but even if all four stands were combined the revenue wouldn't be considered substantial. Another example of this bias against fireworks is the fact that open debris burning is not mentioned as the cause of the Sockeye wildfire despite it having been proven by the investigators involved. In fact, no LOCAL large wildfires have been found to be caused by fireworks.	The suggested changes were made on page 11. Prator was corrected throughout the document. On page 101, two potential causes were included for the fire. Per confirmation with Phillip Blydenburgh at DNR, a definitive cause was not established. All fireworks information was removed.
2	February 13, 2020	Bea Adler, LEPC Volunteer: a. Add headings on pages v to X to the TOC on page iv. b. Capitalize Community Councils. c. Page 14, last paragraph. Remove space in between flight and seeing. d. Table 1 on page 17. Casey Cook is the chair. Casey Laughlin is the secretary. Change Bea Adler's and Norman Straub's phone numbers. e. Changes dates on page 21. f. In row with fire information, lowercase State History. Last sentence, change very from were to was. g. Page 33, second to last paragraph. Do readers know how this relates to MSB? Last paragraph—Confusing. Did MSB experience drought? Evidence shown is for KPB? h. Page 35, second bullet, last sentence: change has to have. Fourth bullet, last sentence: should large be changed to longer or larger fires? Last bullet, last sentence: over winter needs a hyphen. i. In Section 5.3.1.4, is the Nelchina River larger than the Susitna River? j. Last sentence on page 36. Why is this sentence here?	a. The following was added after 9.0 References on page iv: • Table of Tables v • Table of Figures vi • Appendices vii • Acronyms/Abbreviations vii. b. Community Councils were capitalized

		k. Page 37, first sentence of second paragraph under Extent. Substitute effects of instead of affects from. l. Page 38, 5.3.2 Subsection header needs to be bolded to signal the change of topic. m. Page 44, second statement: add in the Borough after Houston Middle School. n. Page 51, fuzzy resolution. Replace with a cleaner copy. o. Page 57, first paragraph: Separate natural from man-made in two sentences. Also add which streams are affected by ice jams. In second paragraph, add comma after occasionally. p. Page 58, add colon instead of period after second sentence. q. On 60, in 5.3.3.3, add described after events in first sentence. Also, what do the numbers refer to? r. On 63, in Table 10, remove the hyphens after FEMA and Governor. s. On 64, last sentence of row 4, remove the space between water and front. t. On 71, fourth bullet, reword: The existence of attenuating features. u. On 72, under Recurrence Probability, add or increased in front of rates. v. On 79, 5.3.4: bold to signal change of topic. w. On 80, third sentence from end of first paragraph: delete but, and start the new sentence with Lightning. On 80, fourth line down of second paragraph, lowercase City. x. On 81, rewrite last paragraph as follows: The Borough has experienced a few tenths of an inch of ashfall on residents' vehicles and homes. Planes are grounded. Operation of motorized equipment including vehicles is discouraged due to potential for damage. y. On 82, 5.3.5, bold to signal change of topic. z. On 83, first paragraph, add ground before blizzards in last sentence. aa. On 85, 5.3.5.2, last sentence of paragraph #2, insert locations in in front of high northern latitudes. bb. On 86, first sentence of 5.3.5.3, add described between events and in. cc. On 95, second paragraph under Impact: reword first sentence to start out as Borough residents most vulnerable to the hazard of. dd. On 96, recurrence probability. Add new last sentence: While the trend is toward warming, periods of extreme cold persist. January 2020 is an example of that. Climate change is causing extremes of both heat and cold, resulting in unpredictability in how current and future residents prepare. ee. On 96, 5.3.6, bold to signal change of topic. In first sentence under bullets, add For the purpose of this HMP,. In the last paragraph, delete also. Change up to as of. ff. On 98, second sentence of second paragraph, make fire plural. In second sentence of third paragraph, change fire to life. In second sentence of fourth paragraph, remove hyphens. gg. On 100, first paragraph, last sentence: use a comma between water and food. Second to last sentence of second paragraph, replace enhancing with increasing. Third paragraph, add more recent examples such as Paradise, California. Last paragraph before 5.3.6.3, delete Wasilla and Houston and replace with Borough. Add the following sentence as new first sentence: Fire services are operated by the Borough and City of Palmer. Second paragraph after 5.3.6.3, first sentence: replace a with the. Delete Additionally, and replace with For example. hh. On 101, 5.3.6.4, add described between events and in. Under 1996 Prator Lake Fire, add comma after Wildfire, No. 2. Replace Ford with Fire. ii. On 102, AK-15-249 paragraph. How does a red flag warning in itself hamper fire response? Add conditions leading to before red flag warnings. Delete to date (third line up). jj. On 107, third full paragraph, replace on with in.	throughout the document. c. Removed space. d. Incorporated all. e. Updated dates for 2020 meetings. f. Incorporated. g. The paragraph in question was deleted. The last paragraph was clarified to reflect that the MSB experienced drought. h. First and third comments were incorporated. Large was changed to longer regarding the second comment. i. The Nelchina River is 28 miles in length. The Susitna River's length is 313 miles. No action taken. j. Droughts and increased fire risk contribute to areas within the Borough affect by changes in the cryosphere. Spruce bark beetle populations grow when the temperatures are above 60 degrees F. No action taken. k. Incorporated. l. Incorporated. m. Incorporated. n. Incorporated. o. Added text regarding the Borough's winter monitoring and

		kk. On 128, three row. Think AHEAD program ended. Sixth row. Project Impacted ended. Seventh row. Add emergency preparedness expo annual in September to special events. ll. On 129, third row. Capitalize Community Councils. Row FL 1: spell out floods instead of FL. mm. On 130, first row, Has been completed through River Watch Program. Seventh row down: lower case Annual Chance of Flooding. Last tow. Replace and with about. nn. On 131, replace SW with severe weather for descriptions under SW 1 and SW 2. oo. On 132, replace WF with wildfire. pp. On 136, delete italics after Table 28 title. qq. On 136, be consistent with DoF or DOF. rr. On 137, EQ2. Yes, there have been Alaska Shield Exercises since 2014. ss. On 139, put a period between area and Depending on last row. tt. On 140, first row—language is too informal.	maintenance of creeks and streams. Added comma. p. Incorporated. Also, added sentence that numbers refer to the State's various tracking systems for disaster events over the years. q. Incorporated. r. Incorporated. s. Incorporated. t. Incorporated. u. Incorporated. v. Incorporated. w. Incorporated. x. Incorporated. y. Incorporated. z. Incorporated. aa. Incorporated. bb. Incorporated. cc. Incorporated. dd. Incorporated. ee. Incorporated. ff. Incorporated. gg. Incorporated. hh. Incorporated. ii. Incorporated. jj. Incorporated. kk. Incorporated. ll. Incorporated. mm. Incorporated. nn. Incorporated. oo. Incorporated. pp. Incorporated. qq. Incorporated. rr. Incorporated. ss. Incorporated. tt. Incorporated.

Matanuska-Susitna Borough
Hazard Mitigation Plan Update ONLINE Open House

On March 16, 2020, the Matanuska-Susitna Borough released an Online Open House to allow the public to review and provide comments on the Draft Hazard Mitigation Plan update. The project page, located on the borough website, has information on this update process and the draft plan. You can find the project information by copying and pasting the following link to your browser https://www.matsugov.us/projects/2019-hazard-mitigation-plan-update; or by scanning the QR Code below with your smartphone.

This online open house will provide the reader with an overview of the plan and the opportunity to submit comments.
If you have any question on these open houses or the Hazard Mitigation Plan, please contact the following staff:

Taunnie Boothby, Planner II
Office: 861-8525
Email: Taunnie.boothby@matsugov.us

Pam Graham, Planner II
Office: 861-8526
Email: pam.graham@matsugov.us

Publish: March 27 & April 1, 2020

03-20-20

Hazard Mitigation Plan Update



Hazard Mitigation Plan Update

of the 2013 All-Hazard Mitigation Plan

Pam Graham **March 16, 2020**

"Hazard mitigation…*any sustained action taken to reduce or eliminate the long-term risk to people and property from natural hazards and their effects. Hazard mitigation is the only phase of emergency management specifically dedicated to breaking the cycle of damage reconstruction and repeated damage..."*

The Borough adopted a Hazard Mitigation Plan in 2013. FEMA requires Plans to be updated every five years. LeMay Engineering & Consulting, Inc. was hired by the State of Alaska Division of Homeland Security & Emergency Management to assist the Matanuska-Susitna Borough in updating the Hazard Mitigation Plan in accordance with the 2018 State of Alaska Hazard Mitigation Plan and FEMA guidance that was updated in 2015. The effort to update this Plan is a public process, and you are invited to participate.

Your input is needed. Comments can be provided at the end of this online open house or by calling or emailing Taunnie Boothby, Borough Planner, at 907-861-8526 or taunnie.boothby@matsugov.us.

The Borough has posted the Draft Hazard Mitigation Plan on its website for review by the community, https://www.matsugov.us/projects/2019-hazard-mitigation-plan-update. The public comment period is currently open and will continue through April 4. All comments will be included into a public comment log and placed in Appendix B of the Plan. The log will state how each comment was addressed and incorporated into the Draft Hazard Mitigation Plan.



The Plan Process

- Online Public Survey: June 5 to July 31, 2019. 721 people looked at the survey. Responses were received by 584 people. Responses were incorporated into the Draft Plan Update.
- The LEPC reviewed the Draft Plan Update in January and February. Comments were incorporated into the Draft Plan in February.
- Online Open House was posted on the Borough's website in March. Comments will be incorporated into the Draft Plan in April.
- The Draft Plan will be available on the Borough's website for public comment March 6.
- Public Comments will be incorporated into the Revised Draft Plan (April 15).
- State DHS&EM/FEMA review and pre-approval of Revised Draft Plan (April and May).
- Borough Planning Commission adoption (May).
- Borough Assembly adoption (June).
- Final Approval from FEMA (June).

After the 2020 Hazard Mitigation Plan is completed, approved, and adopted, the Borough will be eligible to apply for mitigation project funds from DHS&EM and FEMA for five years until the plan requires an update in 2025.

Interests

For the Hazard Mitigation Plan Update, we were interested in information related to:

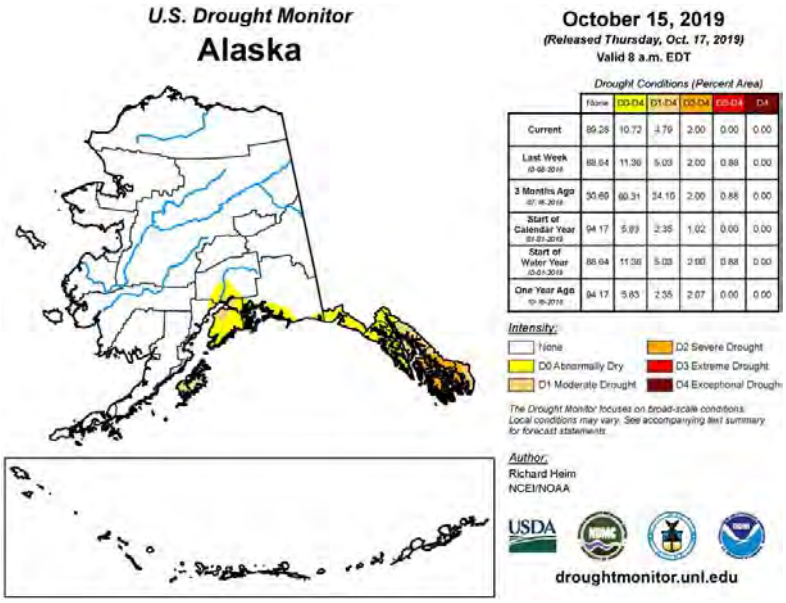
- Hazard Identification,
- Profiles (characteristics),
- Previous occurrences,
- Locations,
- Extents (breadth, magnitude, and severity),
- Impacts, and

- Recurrence probability statements.

The following hazards are applicable for the Borough and were included in the Hazard Mitigation Plan Update:

- Floods/Erosion,
- Wildland/Conflagration Fires,
- Earthquakes,
- Volcanic Ashfall,
- Severe Weather, and
- Changes in the Cryosphere

Changes in the Cryosphere



The Borough is susceptible to changes in the cryosphere such as droughts, glaciers, thawing permafrost, and avalanches.

A brief summary from *Alaska's Changing Environment: Documenting Alaska's physical and biological changes through observations* is provided below (Thoman and Walsh, 2019).

- Temperatures have been consistently warmer than at any time in the past century. The growing season has increased

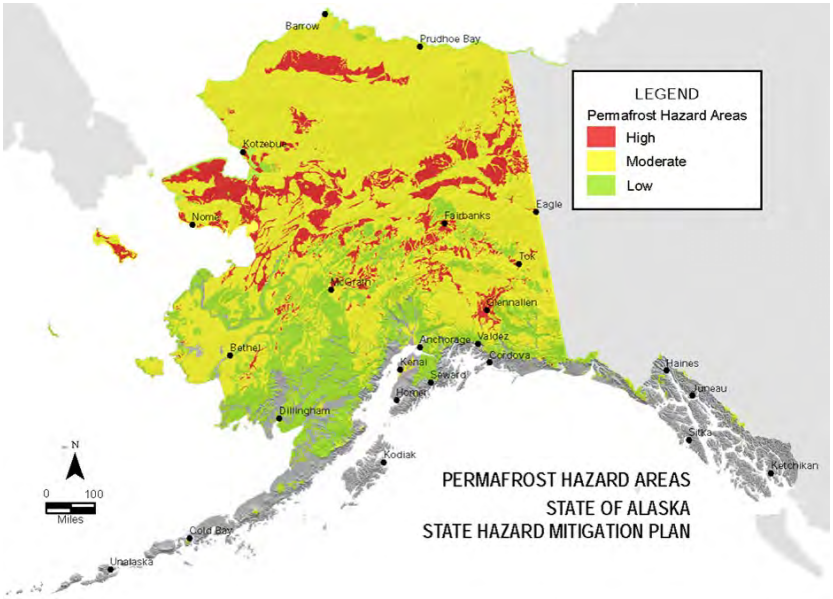
substantially in most areas, and the snow cover season has shortened.

- Precipitation overall has increased. In Southcentral, annual precipitation since the 1990s has increased 3.4%. Flooding and erosion have also increased.

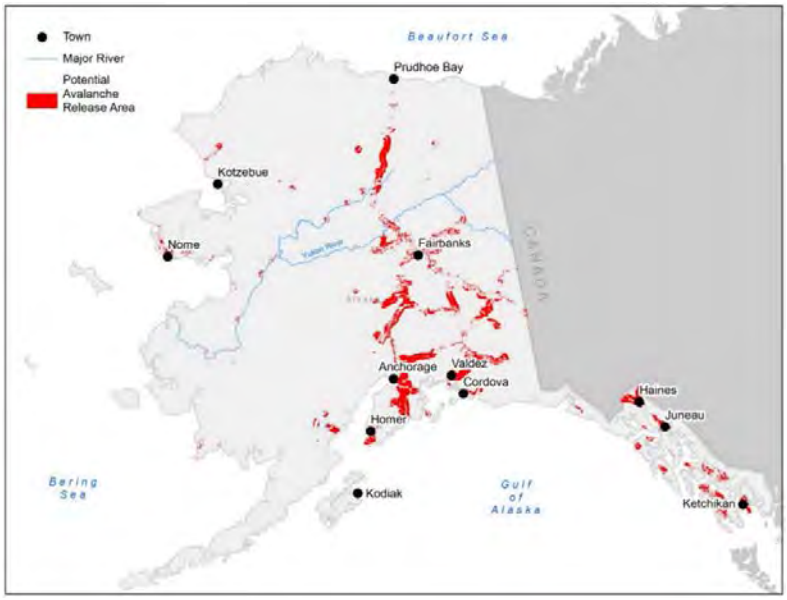
- Recent years have brought many temperature extremes to Alaska, including the warmest year (2016), the warmest month (July 2019), and in places like Anchorage, the warmest day (July 4, 2019).

- Warmer springs and earlier snow melt have lengthened the wildfire season. Wildfire seasons with more than one million acres burned have increased 50% since 1990, compared to the 1950 – 1989 period. The frequency of longer wildfire seasons has increased dramatically.A major outbreak of spruce bark beetles has been spreading through Southcentral Alaska during the past several years. The area affected by the outbreak increased from 33,000 acres in 2015 to 593,000 acres in 2018. While small populations of beetles are always present in spruce forests, sudden increases in their populations are favored by a dry summer, which reduces trees' capacity to produce sap, a defense against the beetle. Longer and warmer summers also increase beetles' reproductive capacity, while milder winters increase over-winter survival rates.

  Although the Borough did not declare a disaster emergency declaration, the U.S. Drought Monitor showed moderate and abnormally dry conditions in the Borough in 2019. Drought conditions increase the potential for wildfires.



The Borough is underlain by isolated, sporadic, and discontinuous permafrost. The following figure is a generalized permafrost hazard potential map of Alaska that was produced in 2018 as part of the State of Alaska HMP Update. The Borough is generally in a low or moderate permafrost hazard area. Permafrost issues within the Borough include frost cracking, heaving, and jacking.



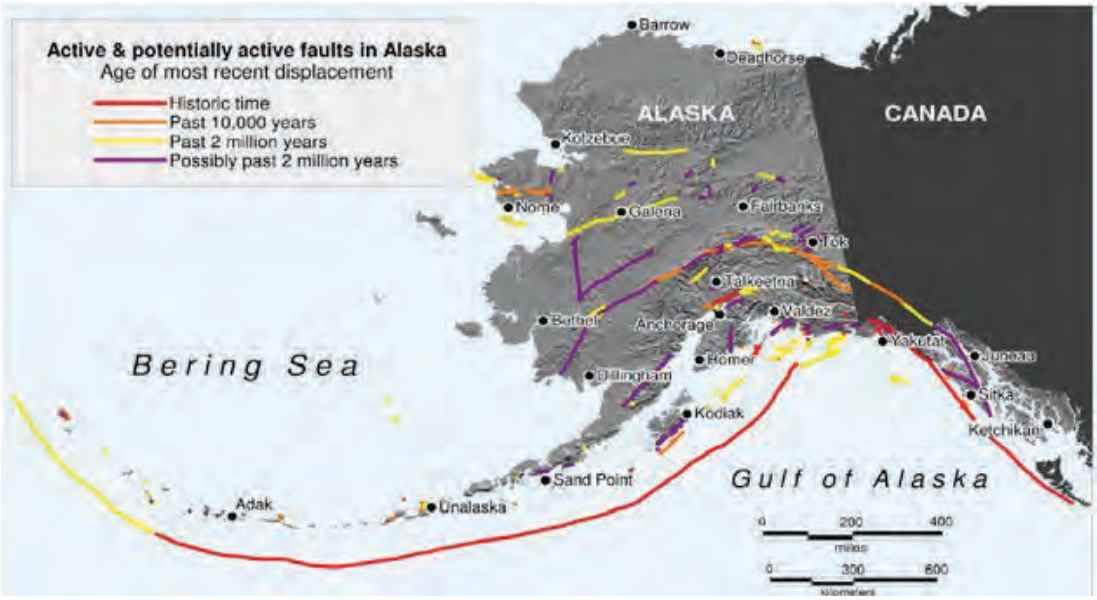
New Alaska avalanche studies are currently being carried out by the DGGS and the University of Alaska Fairbanks. The following figure depicts potential snow avalanche release areas within a six-mile buffer of roads. The slopes throughout the Hatcher Pass area

and the slope of Pioneer Peak between Goose Creek and the Knik River Bridge are well-known avalanche areas in the Borough.

The Matanuska and Nelchina Glaciers are located within Borough boundaries. At 27 miles long by four miles wide, the Matanuska Glacier is the largest glacier accessible by car in the U.S. Its terminus feeds the Matanuska River. It lies near the Glenn Highway about 100 miles northeast of Anchorage and flows about one foot per day. Due to ablation of the lower glacier, as of 2007, the location of the glacier terminus has changed little over the previous three decades. Nelchina Glacier is located 15 miles south of Eureka. Nelchina Glacier heads on the north side of the Chugach Mountains, with Mounts Siegfried, Valhalla, and Fafnir on its western fork, and Audubon Mountain on its eastern fork. It trends north to its terminus at the head of the Nelchina River. Nelchina Glacier is 22 miles long and drains into Tazlina Lake.

1. December 9, 2000 - An avalanche fatality occurred around MP 196 of the Parks Highway.
2. February 3, 2001 - Two Snow machiners were killed in an avalanche near Eureka.
3. February 12, 2001 - Three avalanches closed the road above Motherlode Lodge.
4. November 11, 2001 - A small wind slab avalanche buried a person.
5. April 20, 2002 - A storm dumped more than three feet of snow around Hatcher Pass.
6. February 9, 2003 - Two snowboarders were caught in an avalanche of Hatch Peak, one perished.
7. February 28, 2006 - An avalanche in Hatcher Pass killed a snowboarder.
8. November 2015 - A skier disappeared and was assumed to be buried by an avalanche.
9. January 2, 2016 - A snow machiner was buried under six feet of snow and perished.

10. January 16, 2016 - A snowboarder died in an avalanche on Skyscraper Mountain.
11. November 22, 2017 - A ski coach was killed in an avalanche in Hatcher Pass.
12. March 19, 2018 - Ten people were stranded at the Hatcher Pass ski area due to an avalanche that closed the road, no one was injured.

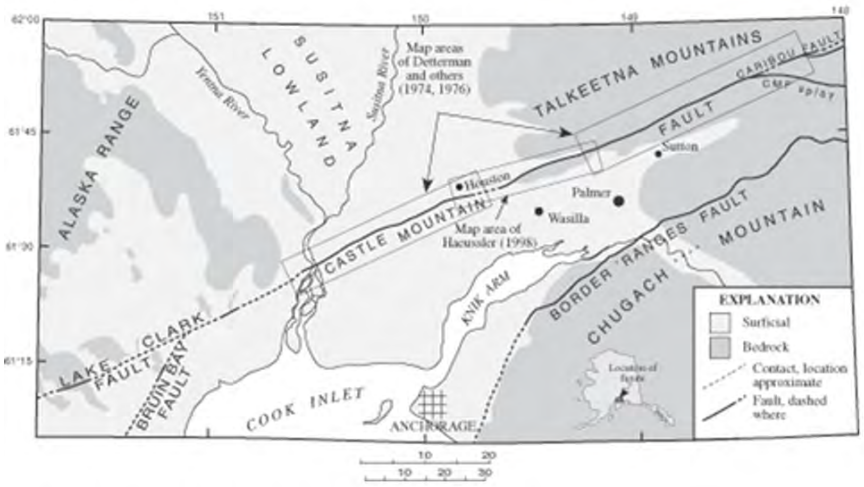


Earthquakes

- The November 30, 2018 earthquake with its epicenter at Point MacKenzie had a magnitude of 7.1. Wide-spread damage occurred to structures and roadways throughout the Borough. This event is a State and Federally declared disaster.

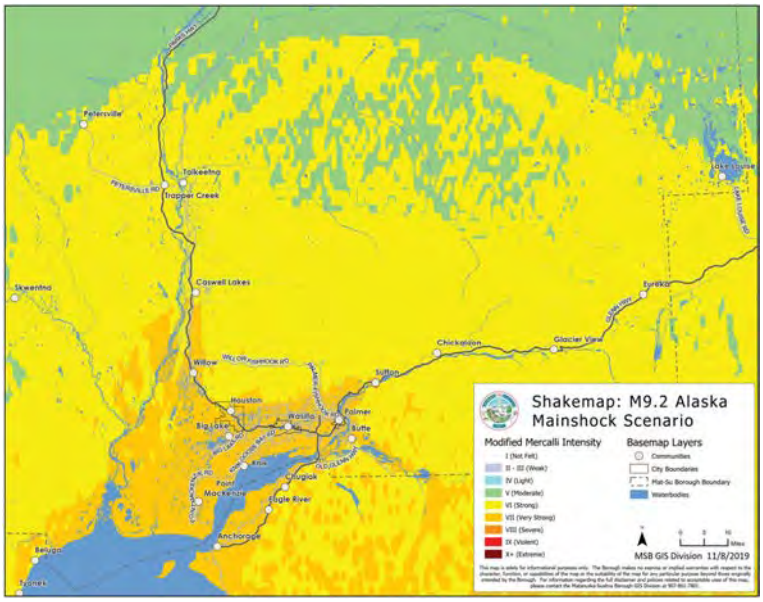
  The entire geographic area of Alaska is prone to earthquake effects. The most recent large earthquake on the Denali Fault occurred November 3, 2002 with a magnitude of 7.9. This event affected the Borough and the Parks Highway and was a State and Federally declared disaster.

Location of Major Faults in the Houston-Wasilla-Palmer Area

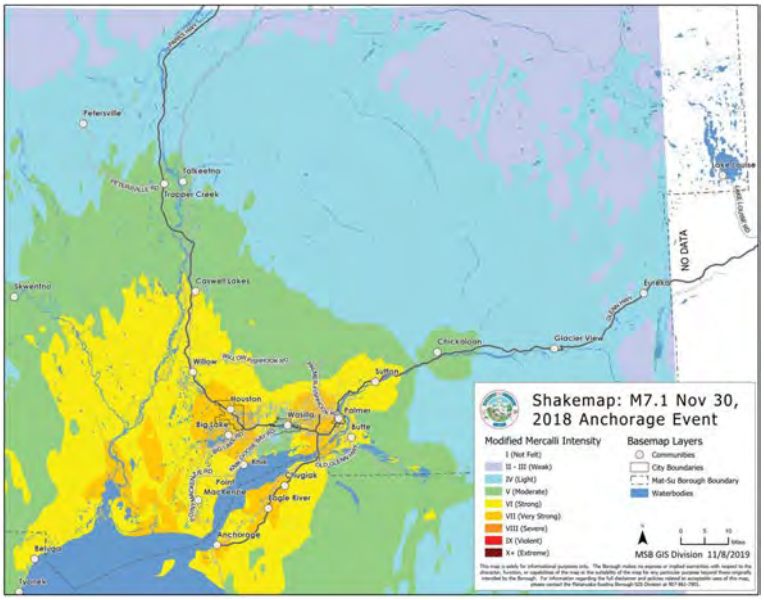


Source: U.S. Geological Survey website

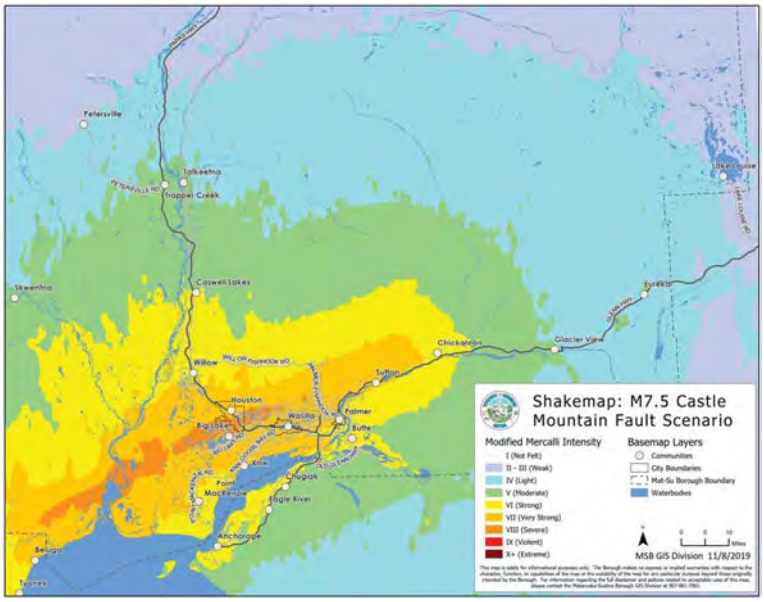
A number of major faults are located under the area where most residents of the Mat-Su Borough reside.



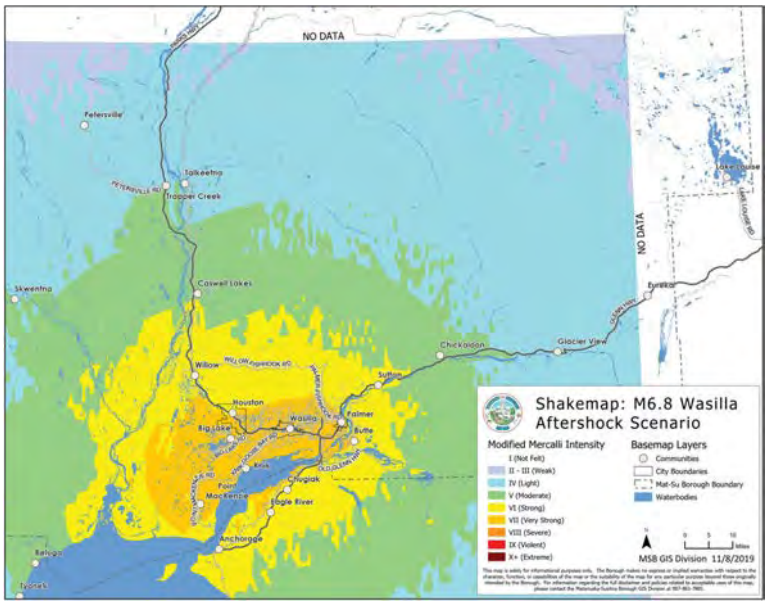
Shake maps use recorded and predicted ground motions to show where and how intensely the ground shook during an earthquake —most crucially, they help identify areas of likely damage within minutes of a significant earthquake. Shake maps are color-coded to show how strongly the ground shook in different places. Each color corresponds to a number on the Modified MMI (link or sidebar), which was created to describe an earthquake's severity in a given place. This figure is a fabrication of the 1964 Great Alaska Earthquake using existing infrastructure in the Borough.



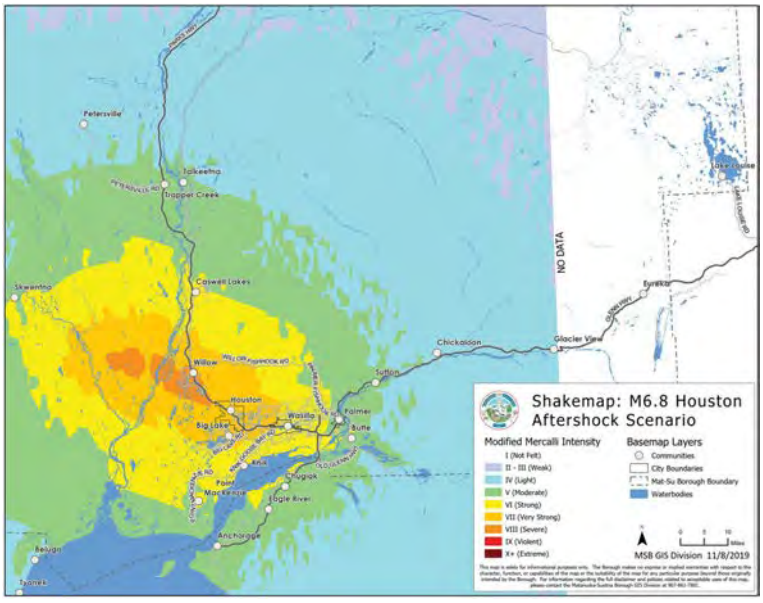
This figure is the actual shake map generated from the November 30, 2018 Earthquake.



This figure is a fabricated scenario meant to show the potential hazard from an earthquake with a magnitude of 7.5 with its epicenter near the Castle Mountain Fault.



This figure is a fabricated scenario meant to show the potential hazard from an aftershock with a magnitude of 6.8 if the epicenter was centered in Wasilla.



This figure is a fabricated scenario meant to show the potential hazard from an aftershock with a magnitude of 6.8 if the epicenter was centered in Houston.



Flooding

The Borough has had many State and FEMA declared floods.

- **Willow Creek, December 20, 1979:** Abnormal weather conditions, caused by a combination of extreme debris jams, abnormal temperature variations and glaciation caused flooding of Willow Creek in the **Matanuska-Susitna Borough**, rendering roads in the area impassable and threatening homes.
- **Southcentral Alaska Flood (Major Disaster), October 12, 1986, FEMA declared (DR-0782) on October 27, 1986:** Record rainfall in Southcentral Alaska caused widespread flooding in Seward, **Matanuska-Susitna Borough**, and Cordova. The President declared a Major disaster implementing all public and individual assistance programs, including Small Business Association (SBA) disaster loans and disaster unemployment insurance benefits. Flooding was particularly severe in the Seward area of the Kenai Peninsula and in tributaries to the Susitna River from Talkeetna downstream. Flood damage was estimated at $20 million, and the region was declared a Federal disaster area."
- **FEMA declared DR-1072 on October 13, 1995**: On September 21, 1995, the Governor declared a disaster as a

result of heavy rainfall in Southcentral Alaska and as a result, the Kenai Peninsula Borough, **Matanuska-Susitna Borough**, and the Municipality of Anchorage were initially affected and suffered severe damage to numerous personal residences, flooding, eroding of public roadways, destruction and significant damage to bridges, flood control dikes and levees, water and sewer facilities, power and harbor facilities. On October 13, 1995, the President declared this event as a major disaster (AK-1072-DR) under the Robert T. Stafford Disaster Relief and Emergency Assistance Act. Individual Assistance totaled $699K for 190 applicants. Public Assistance totaled $7.97 million for 21 applicants with 140 DSR's. Hazard Mitigation totaled $1.2 million. The total for this disaster was $10.5 million. In the Mat-Su, the 77-foot span of Hunter Creek Bridge on Knik River Road slumped into Hunter Creek, leaving 36 people and their animals stranded on the far end of the dead-end road, about 10 miles southeast of Palmer. The National Guarded helped evacuate 27 people to the other side of the Knik River using helicopters.

The creek, usually narrow enough to throw rocks over, carved a 150-foot wide swath down the hillside on its way to the Knik River just downstream. “You could hear boulders crashing into the pillars and see the trees piling against them.” The area was one of several places throughout Southcentral Alaska hampered by heavy rain the a few days. More than 2.5 inches of rain fell in Palmer and much more fell in the mountains nearby. Several other areas flooded, including the Susitna Valley settlement of Skwentna where some residents took refuge in the post office and roadhouse. In addition, the Old Glenn Highway was closed after the Knik River sent more than three feet of water cascading over it just past the Old Knik River Bridge (ADN, 1995).



- **07-220 2006 August Southcentral Flooding (AK-07-220) declared August 29,2006 by Governor Murkowski, then FEMA declared (DR-1663) on October 16, 2006:** Beginning on August 18, 2006 and continuing through August 24, 2006, a strong weather system caused severe flooding, resulting in severe damage and threats to life and property, in the Southcentral part of the State including the Matanuska-Susitna Borough, the City of Cordova and the Copper River Highway area in the Chugach REAA, the Richardson Highway area in the Copper River REAA and Delta/Greely REAA, the Denali Highway area, and the Alaska Railroad and Parks Highway areas in the Matanuska-Susitna Borough and the Denali Borough. The Little Susitna River flooded its banks north of the communities of Wasilla and Meadow Lakes. Concurrently, the Talkeetna River overflowed its banks in the downtown and surrounding areas of Talkeetna. Willow Creek in the community of Willow also overflowed. Governor Murkowski signed a state disaster declaration bringing recovery resources to the several homeowners who were severely impacted and enabling washed-out roads and bridges to be rebuilt. Damage cost estimates were near $21 million in Public Assistance primarily for damage to roads, bridges, and rail lines. Individual Assistance estimates were near $2 million.



- **12-240, 2012 September Storm declared by Governor Parnell on October 17, 2012, then FEMA declared November 27, 2012 (DR-4094):** Beginning on September 4, 2012, and continuing, a strong weather system produced high winds and heavy rains, resulting in severe and widespread wind damage and flooding throughout much of Southcentral and Interior Alaska. The series of storms created a threat to life and property in the **Matanuska-Susitna Borough,** Kenai Peninsula Borough, Alaska Gateway REAA, and the Chugach area. The magnitude of the storm resulted in wind damages and flooding which necessitated debris clearance, emergency protective measures, damage to public facilities including roads, bridges, railroad, electrical distribution and water systems; and damage to private residences to include losses of personal property. A large number of roads and bridges were affected; damage to the Alaska Railroad was severe enough to shut down the rail service for several days. Approximately 823 properties suffered damage from flooding and erosion, almost 60 homes were either severely damaged or destroyed, traffic on 60 roads was disrupted, and 40 of those roads were closed. Most of the damage occurred along the Little Susitna River and Willow Creek. As a result of the raging rivers, the Talkeetna dike/revetment was damaged, part of the Shirley Towne Bridge was washed away and the

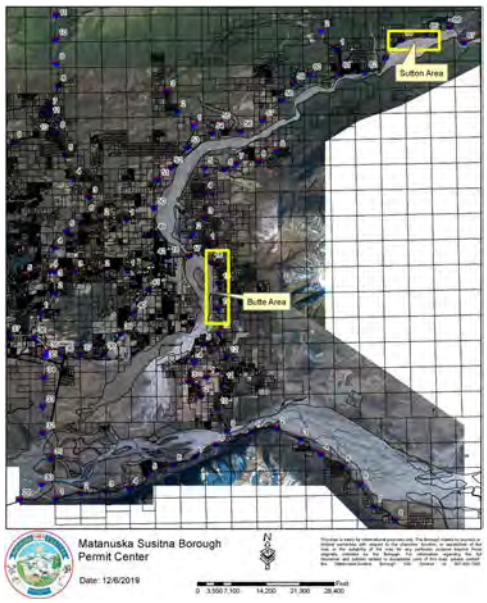
approach to Yoder Bridge was washed out. Super saturated ground and elevated water tables caused additional flooding of homes and septic systems, damaging property and road beds outside of typical “flood prone” areas. State estimates of damage to individual property approached $3.5 million, public infrastructure exceeded $19 million statewide. There was one fatality associated with the flooding.



- **FEMA-4391-DR, 2018 Damage to the Alaska Railroad declared by Governor Bill Walker on June 28, 2018, then President Trump declared on September 5, 2018:** Ice jams formed along the Susitna River during spring breakup, which resulted in flooding along the river northeast of Talkeetna during the period from May 11-13, 2018. Workers with the Alaska Railroad Corporation discovered a five-mile section of track flooded and covered with chunks of ice after an ice jam caused an eight- to ten-foot vertical water level rise between Talkeetna and Curry, on the Susitna River. Significant sections of track were damaged and moved horizontally by as much as 25 feet. At the same time, significant areas of erosion/damage to the railroad bed itself also occurred which had to be rebuilt. Rail service was disrupted for several days. The total Public Assistance cost estimate was $2,011,378.

Erosion

This figure shows the impacts of the land that is eroding adjacent to the Matanuska River.

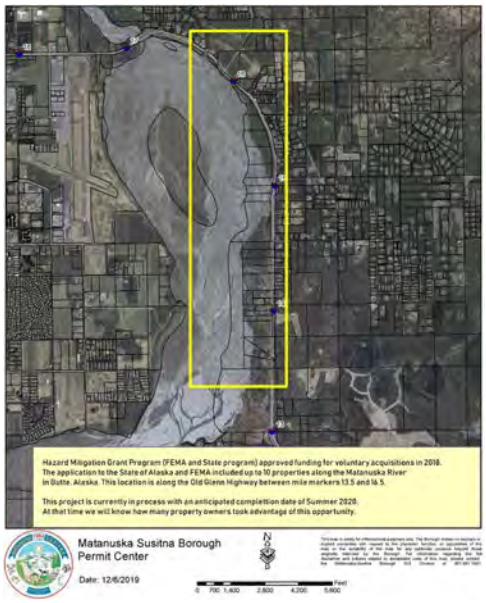


- **Mat-Su Borough, July 18, 1991:** Severe bank erosion near the Circle View Subdivision area along the Matanuska River destroyed one home and threatened several others, causing the **Matanuska-Susitna Borough** to support either construction of emergency bank protection measures or relocation of homes. The Governor's Declaration authorized a loan of up to $500,000 dollars to the **Matanuska-Susitna Borough**. The following year, the legislature converted this loan to a grant.
- **Matanuska River Erosion:** On July 1, 1994, **Matanuska-Susitna Borough** sustained serious damage and threats to life and property resulting from erosion of the Matanuska River, in the vicinity of Circle View Estates. As a result of this disaster, authority was granted under Alaska Statutes, Section 26.23.020 to loan $500,000.00 from the Disaster Relief Fund to the **Matanuska-Susitna Borough**.
- **16-258, 2016 Matanuska River Erosion declared by Governor Walker on August 22, 2016:** During the week of August 14 through 20, 2016, there was imminent threat of flooding in the **Matanuska-Susitna Borough** along the Old

Glenn Highway from Mile 12 through Mile 15. Flooding in this area had the potential to cause substantial damage to the highway, infrastructure, and local homes. The ADOT&PF was immediately called to accomplish necessary emergency protective measures to prevent damaging flooding from public and private infrastructure.



This figure shows the Sutton area where HMGP projects occurred in 2018. Two homes in the Sutton area were acquired and demolished, and the land has been deeded to remain as open space in perpetuity.



This figure shows the Butte area where HMGP projects are occurring. Five homes in the Butte area have been acquired and will be demolished by Summer 2020 with the land deeded to remain as open space in perpetuity. One additional homeowner in the Butte area may decide to participate.



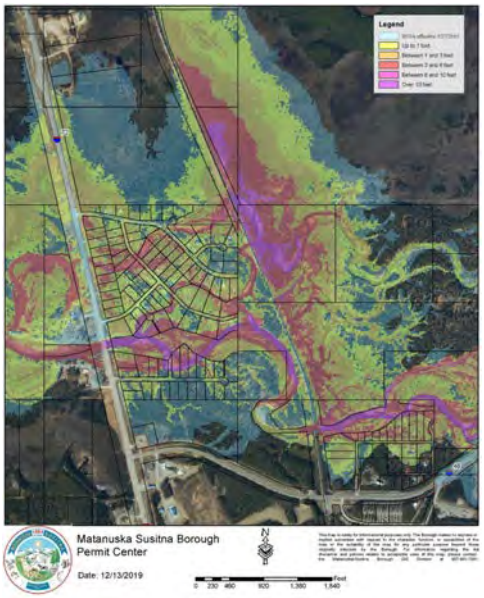
Floods/Erosion

The Cedars Subdivision platting was finalized in 2014, and single-family residential development is ongoing in this area. The figure illustrates the location of the Subdivision with regard to the alluvial fan.

Another area of flooding concern is an alluvial fan, outside of the Borough's mapped "Special Flood Hazard Area" at Mile 9.6 of Hunter Creek on the Knik River Road. The 77-foot span of the Hunter Creek Bridge slumped into the creek in September 1995.

The Alaska Department of Fish and Game (ADF&G) Fish Passage Assessment Program was created in 2000 and charged with assessing state-owned road crossings for impacts to fish passage. Since that time ADF&G has also assessed crossings on Borough, municipality, private, and federal roads and on the Alaska Railroad. Salmon and other fish move throughout the

watershed year-round, and unobstructed access to habitat is critical to helping maintain a healthy fish population. Properly designed bridges and culverts have little or no adverse effect on fish, aquatic organisms, and other riverine animals, but when culverts are too small, too steep, or incorrectly placed relative to the natural stream, they impede both up- and downstream fish movement. This program has been continued, and more information on the projects within the Borough can be accessed at: https://www.adfg.alaska.gov/index.cfm?adfg=fishpassage.main



Flood depth grids were completed for the Borough in 2019. Flood depth grids illustrate the flood depth, in feet above the ground surface, to demonstrate the variability of flood depths in flood-prone areas. The following figures include depth grids for multiple flood scenarios for Willow Creek which recently flooded on December 21, 2019: 10% (10-year), 4% (25-year), 2% (50-year), and 1% percent (100-year) annual chance. This information is useful for visualizing flood impacts outside of the regulatory purview and for examining the vulnerability of structures in terms of severity and frequency.

10-Year or 10% Flood Depth Grid Willow Creek



25-Year or 4% Flood Depth Grid Willow Creek



50-Year or 2% Flood Depth Grid Willow Creek



100-Year or 1% Flood Depth Grid Willow Creek

Emergency Program Date Identified	**Regular Program Entry Date**	**Map Revision Date**	**NFIP Community Number**	**CRS Rating Number**	**Borough Total # of Current Policies (9/30/19)**
2/28/1978	5/01/1985	9/27/2019	020021	-	225
Borough Total Premiums	**Borough Total Dollars of Paid Losses**	**AK State Average Value of Losses**	**AK State # of Current Policies**	**AK State Total Premiums**	**AK Total Loss Dollars Paid**
$222,010	$1,248,284	$15,227	2,352	$2.2 million	$9.7 million
Borough Average Premium	**AK State Average Premium**	**Borough Repetitive Loss Claims**	**Borough Dates of Rep. Losses**	**Borough Total Rep. Loss**	**Borough Average Building Rep. Loss**
$987	$906	6	2006 & 2012	$45,296	$7,480
Borough Minus Rated Policies	**Borough Total Insurance in Force**	**Borough Total Claims Since 1978**	**AK State Total Claims Since 1978**	**Borough Average Value of Losses**	**Borough Total Dollars of Paid Losses**
18	$55,983,700	78	640	$16,004	$1,248,284

The Borough participates in the National Flood Insurance Program. Flood insurance rate maps (FIRMs) were updated in 2019.

Flood Zones	Acres	Land Appraisal	Building Appraisal	Number of Structures
only 1% chance/year	174,778	$180,789,300	$324,628,308	1,893
both 1% & 0.2% chance/year	26,614	$47,431,200	$69,170,600	672
only 0.2% chance/year	2,777	$11,125,000	$21,420,148	210
TOTALS	**204,169**	**$239,345,500**	**$415,219,056**	**2,775**

Borough Structures Within the Flood Zones

Flood Zones	Undeveloped	Residential	Commercial	Agricultural	Mixed Use	Other	Total
only 1% chance/year	55.81%	40.58%	1.66%	0.05%	1.17%	0.73%	100%
both 1% & 0.2% chance/year	49.04%	48.02%	0.45%	0.23%	1.81%	0.45%	100%
only 0.2% chance/year	45.45%	45.06%	1.98%	0.00%	4.35%	3.16%	100%

Borough Flood Zones by Land Use



Volcanic Ash

The Borough has experienced volcanic ash in 1989, 1990, and 1992 from Mt. Redoubt and Mt. Spurr. These eruptions disrupted transportation and industry, particularly jet aircraft.



Severe Weather

Severe weather occurs throughout Alaska with extremes experienced by the Borough that include increasing high winds,

winter storms, thunderstorms and lightning, hail, heavy and drifting snow, heavy rain/freezing rain/ice storm, and cold.

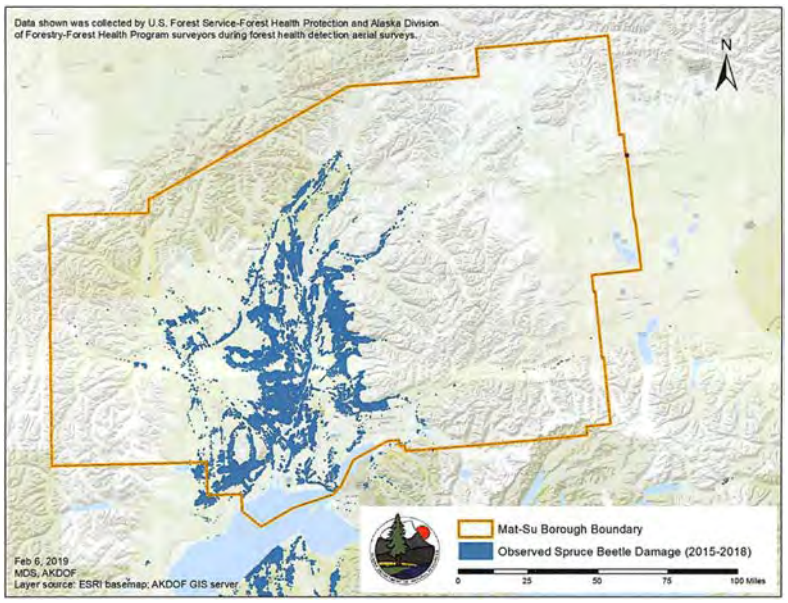
- High Winds: 100 mph (December 15, 2010)
- Heavy Snow: 36 inches in Hatcher Pass (February 12, 2001)
- Freezing Rain
- Extreme Cold: -70 degrees Farhenheit



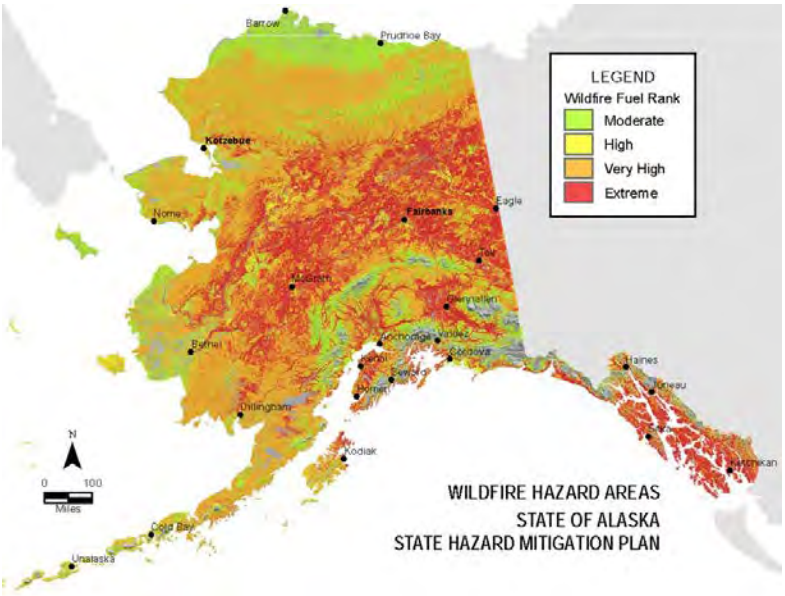
Wildland/Conflagration fires

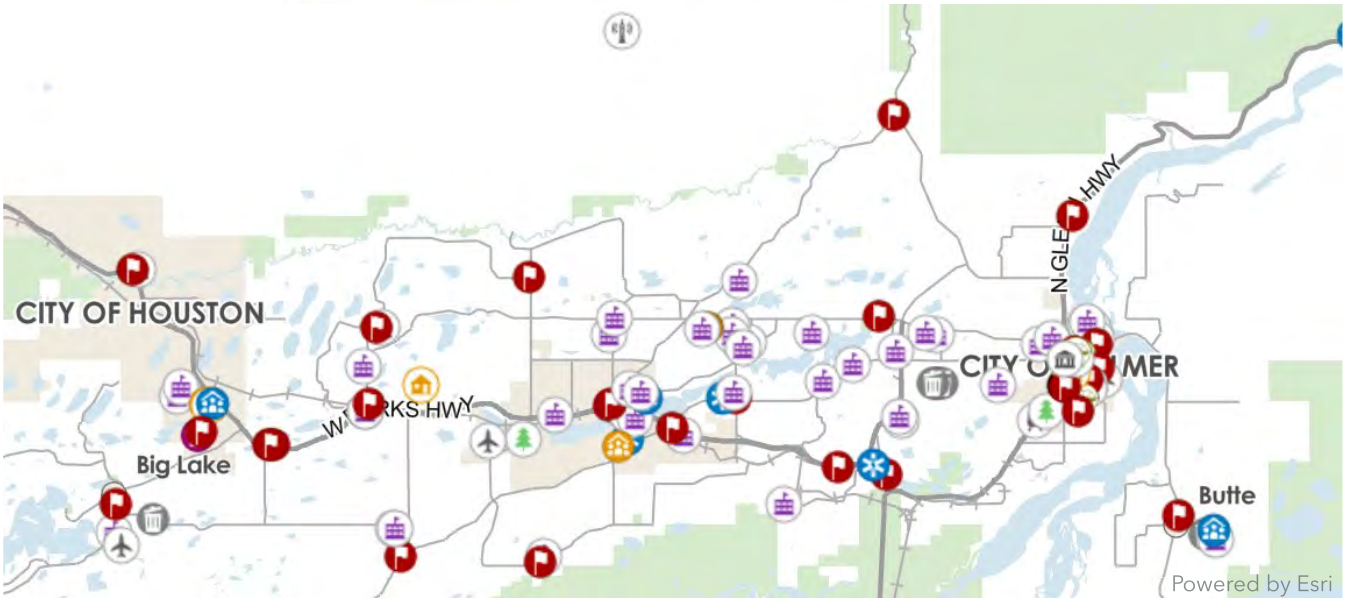
The Borough has experienced a regional spruce bark-beetle outbreak. Fire risk has increased in recent years due to spruce bark beetle infestations which have affected both white and black spruce forest stands. These infestations have impacted an estimated 309,746 acres (nearly 500 square miles) of spruce forest in the Borough. Dead and dying spruce trees present a wildfire hazard when standing because they can support intense, rapidly moving crown fires. These insect-killed trees also present a hazard after they have fallen because they can support very intense surface fires. Wildfire in either fuel type is very difficult for firefighters to control by direct attack. As of 2004, an estimated four million acres of spruce in Southcentral Alaska have been affected. While spruce bark beetle outbreaks are natural events,

the magnitude of spruce mortality during historic episodes was typically much less (20% to 30%) than the current infestation in which mortality rates exceeded 90% (DOF, 2008). The following figure illustrates observed spruce bark beetle damage from 2015 to 2018.



- 1996 Prator Fire
- 1996 Millers Reach Fire
- 2015 Sockeye Wildfire
- 2019 McKinley Wildfire
- 2019 Deshka Landing Wildfire
- 2019 Montana Creek Wildfire
- 2019 Malaspina Wildfire





Critical Facilities - Critical Infrastructure

This map shows those facilities that are considered Critical - Critical infrastructure is defined as a facility that provides essential products and services to the general public, such as preserving quality of life while fulfilling important public safety, emergency response, and disaster recovery functions. Critical facilities and infrastructure for the Borough are profiled the plan

Government: Borough administrative offices, departments, or agencies;

Emergency Response: including fire personnel services; and fire-fighting equipment;
Health Care: medical clinics, congregate living, health, residential and continuing care, and retirement facilities; and Community Gathering Places.

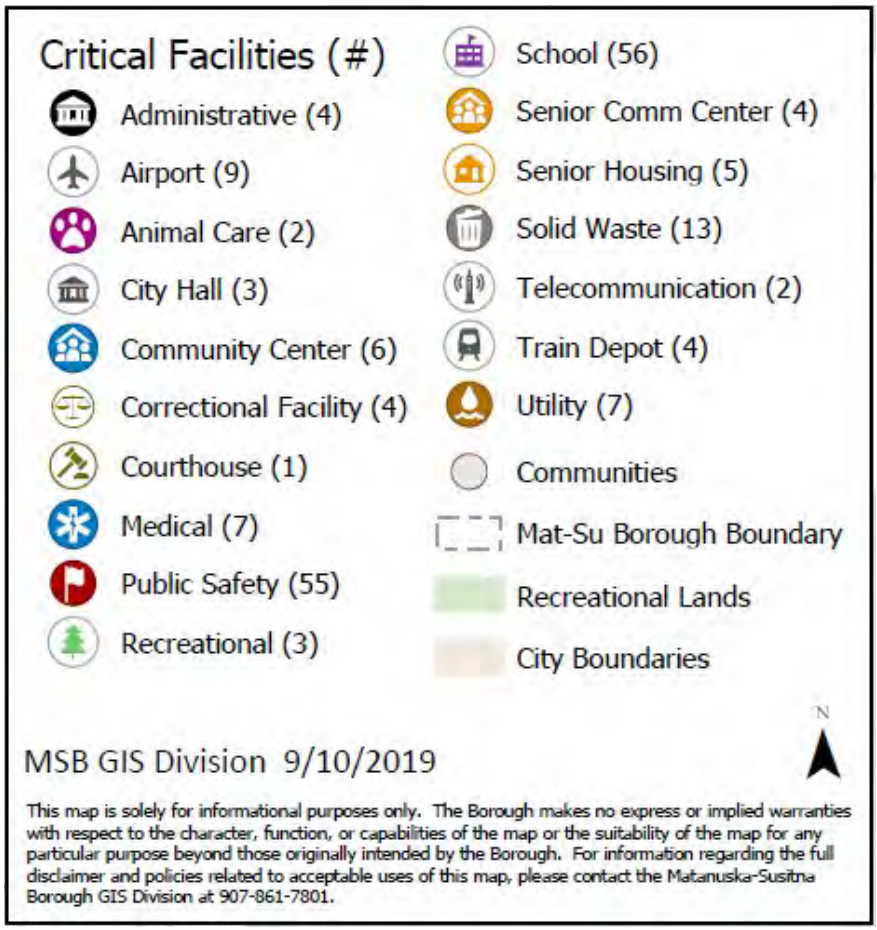


Table 25. Mitigation Goals

No.	Goal Description
Multi-Hazards (MH)	
MH 1	Ensure residents of and visitors to the Borough are aware of their vulnerability to natural hazards and know how to mitigate the effects and prepare for emergency response.
MH 2	Strengthen partnerships between the Borough, other jurisdictions, and agencies serving Borough residents.
MH 3	Utilize Borough governmental powers to integrate hazard mitigation into all development planning.
MH 4	Reduce vulnerability to repetitive power outages.
Natural Hazards	
FL 1	Eliminate vulnerability to flooding (FL) within the Borough.
FL 2	Decrease the financial losses caused by floods.
FL 3	Improve habitat preservation and stream enhancement.
ER 1	Reduce property damage caused by wind or water erosion (ER).
SW 1	Mitigate vulnerability to severe weather (SW) within the Borough.
SW 2	Strengthen the ability of public facilities to withstand SW.
WF 1	Reduce the fire (F) danger in the WUI.
WF 2	Improve the fire suppression capability of Borough firefighters.
WF 3	Use the Borough Assembly's legislative power to institutionalize fire mitigation measures in Borough code.
EQ 1	Increase public awareness of how to survive an earthquake (EQ).
EQ 2	Promote adoption of building codes to require earthquake-resistant construction practices and materials.
CC 1	Eliminate the loss of life and assets due to avalanche.
V 1	Reduce health problems caused by volcanic ash (V).
V 2	Reduce property damage caused by volcanic ash.

Mitigation Goals

Requirements of hazard mitigation goals, as stipulated in DMA 2000 and its implementing regulations, are described below.

DMA 2000 Requirements: Mitigation Strategy –Hazard Mitigation Goals

Local Hazard Mitigation Goals

Requirement §201.6(c)(3)(i): [The hazard mitigation strategy shall include a] description of mitigation goals to reduce or avoid long-term vulnerabilities to the identified hazards.

Element

Does the plan include a description of mitigation goals to reduce or avoid long-term vulnerabilities to the identified hazards?

Source: FEMA, 2015.

The exposure analysis results were used as a basis for developing the mitigation goals and actions. Mitigation goals are defined as general guidelines that describe what a community wants to

achieve in terms of hazard and loss prevention. Goal statements are typically longrange, policy-oriented statements representing community-wide visions. As such, goals were developed to reduce or avoid long-term vulnerabilities to identified hazards.

Hazard Mitigation Plan Update - Open House Comments

Public comments on the Draft Matanuska-Susitna Borough Hazard Mitigation Plan Update.

Name *

Please enter your name

Submit your comments using this form by clicking this link: Open House Comments

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Growing with the Valley since 1947.

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Wasilla, AK 99654

(907) 352-2264 ph
(907) 352-2277 fax

AFFIDAVIT OF PUBLICATION

UNITED STATES OF AMERICA, STATE OF ALASKA, THIRD DIVISION

BEFORE ME, THE UNDERSIGNED, A NOTARY PUBLIC, THIS DAY

PERSONALLY APPEARED BEFORE **BENJAMIN BORG** WHO, BEING

FIRST DULY SWORN, ACCORDING TO LAW, SAYS THAT HE IS THE

LEGAL AD CLERK OF THE **FRONTIERSMAN**

PUBLISHED AT WASILLA AND CIRCULATED THROUGH OUT MATANUSKA SUSITNA

BOROUGH, IN SAID DIVISION THREE AND STATE OF ALASKA

AND THAT THE ADVERTISEMENT, OF WHICH THE ANNEXED IS A TRUE

COPY, WAS PUBLISHED ON THE FOLLOWING DAYS:

03/27/2020 04/01/2020

AND THAT THE RATE CHARGED THEREIN IS NOT IN EXCESS OF

THE RATE CHARGED PRIVATE INDIVIDUALS.

SUBSCRIBED AND SWORN TO BEFORE ME
THIS 1st DAY OF APRIL, 2020

NOTARY PUBLIC FOR STATE OF ALASKA

NOTARY PUBLIC
NANCY E DOWNS
STATE OF ALASKA
MY COMMISSION EXPIRES AUG. 25, 2023

MAT-SU BOROUGH/PAGE
4.1
ACCOUNT NUMBER 405249

Appendix C: Adoption Resolution and FEMA Approval Letter

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Appendix D FEMA Review Tool

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APPENDIX A:
LOCAL MITIGATION PLAN REVIEW TOOL

The *Local Mitigation Plan Review Tool* demonstrates how the Local Mitigation Plan meets the regulation in 44 CFR §201.6 and offers States and FEMA Mitigation Planners an opportunity to provide feedback to the community.

- The Regulation Checklist provides a summary of FEMA's evaluation of whether the Plan has addressed all requirements.
- The Plan Assessment identifies the plan's strengths as well as documents areas for future improvement.
- The Multi-jurisdiction Summary Sheet is an optional worksheet that can be used to document how each jurisdiction met the requirements of each Element of the Plan (Planning Process; Hazard Identification and Risk Assessment; Mitigation Strategy; Plan Review, Evaluation, and Implementation; and Plan Adoption).

The FEMA Mitigation Planner must reference this *Local Mitigation Plan Review Guide* when completing the *Local Mitigation Plan Review Tool*.

Jurisdiction: Matanuska-Susitna Borough, Alaska (Region 10)	**Title of Plan:** Draft Matanuska-Susitna Borough Hazard Mitigation Plan Update	**Date of Plan:** May 15, 2020
Local Point of Contact: Taunnie Boothby, CFM	**Address:** Matanuska-Susitna Planning Department 350 E. Dahlia Avenue Palmer, AK 99645	
Title: Borough Floodplain Coordinator and Planner		
Agency: Matanuska-Susitna Borough		
Phone Number: (907) 861-8526	**E-Mail:** Taunnie.Boothby@matsugov.us	

State Reviewer:	**Title:**	**Date:**
JJ Little	DHS&EM Planner	18 June 2020

FEMA Reviewer:	**Title:**	**Date:**
Date Received in FEMA Region ***(insert #)***	06/22/2020	
Plan Not Approved	07/28/2020	
Plan Approvable Pending Adoption		
Plan Approved		

SECTION 1: REGULATIONCHECKLIST

1. REGULATION CHECKLIST **Regulation** (44 CFR 201.6 Local Mitigation Plans)	Location in Plan (section and/or page number)	Met	Not Met
ELEMENT A. PLANNING PROCESS			
A1. Does the Plan document the planning process, including how it was prepared and who was involved in the process for each jurisdiction? (Requirement §201.6(c)(1))	PDF 26-32, 174-254	X	
A2. Does the Plan document an opportunity for neighboring communities, local and regional agencies involved in hazard mitigation activities, agencies that have the authority to regulate development as well as other interests to be involved in the planning process? (Requirement §201.6(b)(2))	PDF 26-32, 174-254	X	
A3. Does the Plan document how the public was involved in the planning process during the drafting stage? (Requirement §201.6(b)(1))	PDF 29-32, 177-254	X	
A4. Does the Plan describe the review and incorporation of existing plans, studies, reports, and technical information? (Requirement §201.6(b)(3))	PDF 32-33, 163-165	X	
A5. Is there discussion of how the community(ies) will continue public participation in the plan maintenance process? (Requirement §201.6(c)(4)(iii))	PDF 155, 157-158, 280-284	X	
A6. Is there a description of the method and schedule for keeping the plan current (monitoring, evaluating and updating the mitigation plan within a 5-year cycle)? (Requirement §201.6(c)(4)(i))	PDF 153-154, 276-284	X	
ELEMENT A: REQUIRED REVISIONS			

1. REGULATION CHECKLIST **Regulation** (44 CFR 201.6 Local Mitigation Plans)	Location in Plan (section and/or page number)	Met	Not Met
ELEMENT B. HAZARD IDENTIFICATION AND RISK ASSESSMENT			
B1. Does the Plan include a description of the type, location, and extent of all-natural hazards that can affect each jurisdiction(s)? (Requirement §201.6(c)(2)(i))	Changes in the Cryosphere: PDF 37-43, 46-47; Earthquake: 48-51, 54-56; Flood/Erosion: 67-70, 74-81; Volcanic Ashfall: 89-92; Severe Weather: 92-95, 104; Fire: 106-110, 120	X	
B2. Does the Plan include information on previous occurrences of hazard events and on the probability of future hazard events for each jurisdiction? (Requirement §201.6(c)(2)(i))	Changes in the Cryosphere: PDF 43-46, 48; Earthquake: 51-54, 58, 60, 67; Flood/Erosion: 70-74, 82; Volcanic Ashfall: 90-92; Severe Weather: 95-105; Fire: 110-119, 120-121	X	
B3. Is there a description of each identified hazard's impact on the community as well as an overall summary of the community's vulnerability for each jurisdiction? (Requirement §201.6(c)(2)(ii))	Changes in the Cryosphere: PDF 47-48; Earthquake: 56-66; Flood/Erosion: 81; Volcanic Ashfall: 91; Severe Weather: 104-105; Fire: 120; Overall Vulnerability: 127-128	X	
B4. Does the Plan address NFIP insured structures within the jurisdiction that have been repetitively damaged by floods? (Requirement §201.6(c)(2)(ii))	PDF 82, 87-89	X	

ELEMENT B: REQUIRED REVISIONS

Element B2.b. The plan uses terms such as likely, highly likely, etc. to describe the probabilities associated with the cryosphere, volcanic ashfall, severe weather, volcanic ash hazards identified in the plan. However, it does not define what those general descriptors mean (i.e. highly likely could be defined as equals or near 100% chance of occurrence next year or happens every year, etc.). Please revise to include this information, perhaps within each hazard profile or as part of a legend for Table 20 – Hazard Vulnerability Analysis. Further definition and clarification were added as requested to PDF pages 48, 60, 82, 91, 105, and 121.

Element B4.a. The plan estimates the number of repetitive loss structures, but does not describe the type (residential, commercial, institutional, etc). Please revise the plan to include this information. If the Borough is unable to locate this, please contact Scott Van Hoff (scott.vanhoff@fema.dhs.gov) from the FEMA Region X Floodplain Management and Insurance Branch and he can provide this information. The repetitive loss properties in Tables 12 involve three structures that are all single-family homes. Text has been modified accordingly on PDF page 82. Also, FL 18 was added to Table 28 on PDF page 152 concerning these three properties.

ELEMENT C. MITIGATION STRATEGY			
C1. Does the plan document each jurisdiction's existing authorities, policies, programs and resources and its ability to expand on and improve these existing policies and programs? (Requirement §201.6(c)(3))	PDF 15-16,125, 129, 132-136, 156-157	X	
C2. Does the Plan address each jurisdiction's participation in the NFIP and continued compliance with NFIP requirements, as appropriate? (Requirement §201.6(c)(3)(ii))	PDF 82, 87-89	X	
C3. Does the Plan include goals to reduce/avoid long-term vulnerabilities to the identified hazards? (Requirement §201.6(c)(3)(i))	PDF 137	X	
C4. Does the Plan identify and analyze a comprehensive range of specific mitigation actions and projects for each jurisdiction being considered to reduce the effects of hazards, with emphasis on new and existing buildings and infrastructure? (Requirement §201.6(c)(3)(ii))	PDF 139-145	X	
C5. Does the Plan contain an action plan that describes how the actions identified will be prioritized (including cost benefit review), implemented, and administered by each jurisdiction? (Requirement §201.6(c)(3)(iv)); (Requirement §201.6(c)(3)(iii))	PDF 148-152, 270-273	X	
C6. Does the Plan describe a process by which local governments will integrate the requirements of the mitigation plan into other planning mechanisms, such as comprehensive or capital improvement plans, when appropriate? (Requirement §201.6(c)(4)(ii))	PDF 154-156	X	

ELEMENT C: REQUIRED REVISIONS

Element C6.d. The plan includes a process (pg. 145/PDF 155) that describes how the community will integrate data, information, and hazard mitigation goals and actions into other planning mechanisms. However, as an update to an existing mitigation plan, it does not describe how the Borough integrated the previous plan, where appropriate, into planning mechanisms as a demonstration of progress in local hazard mitigation efforts. Please revise the plan to include this information, or if this was not accomplished, please note this and perhaps what prevented this from occurring and how the Borough will address these challenges with the updated plan. The following text was added on PDF page 156: Since this HMP is an update, the Borough integrated the previous HMP into the following planning mechanism: All of the Community Council plans prior to the previous HMP did not have a natural hazard section. Some Community Council plans have since been updated and now include a natural hazard section. Moving forward, the plan is to update the Core Areas Comprehensive Plan with a natural hazard section.
Additionally, MH 4 was added to Table 28 on PDF page 148 concerning this priority.

1. REGULATION CHECKLIST **Regulation** (44 CFR 201.6 Local Mitigation Plans)	Location in Plan (section and/or page number)	Met	Not Met
ELEMENT D. PLAN REVIEW, EVALUATION, AND IMPLEMENTATION (applicable to plan updates only)			
D1. Was the plan revised to reflect changes in development? (Requirement §201.6(d)(3))	PDF 125-134	X	
D2. Was the plan revised to reflect progress in local mitigation efforts? (Requirement §201.6(d)(3))	PDF 27, 148-152	X	
D3. Was the plan revised to reflect changes in priorities? (Requirement §201.6(d)(3))	PDF 27, 146, 148-152	X	

ELEMENT D: REQUIRED REVISIONS

Element D1 – The plan describes the growth in population and number of new residential structures but does not describe whether these changes in development have occurred in hazard prone areas or increased or decreased the vulnerability of the Borough since the last plan was approved. If no changes in development have impacted the Borough's overall vulnerability, the updated plan should note this and validate the previous plan. The following text was added on PDF page 129: Due to an increased awareness of hazards on a national level and increased public education by the Borough, the vulnerability of the Borough since the last HMP was approved may have slightly decreased. However, not all flood hazards have been mapped. Best practices are encouraged in floodplain areas that haven't yet been mapped due to unintended consequences elsewhere. The Borough continues to educate its population on hazards with no regulations in the hope of its residents making wise decisions when constructing residential homes. Building inspections are conducted in regard to earthquake hazards if the building is being financed. If private funding is used, the Borough has no enforcement capability to ensure construction occurs to code. Building compliance is of concern when selling properties. Deconstruction inspections, although useful in identifying some deficiencies, is a sampling, and is not representative of a complete inspection.

ELEMENT E. PLAN ADOPTION			
E1. Does the Plan include documentation that the plan has been formally adopted by the governing body of the jurisdiction requesting approval? (Requirement §201.6(c)(5))	Adoption Letter to be included in Appendix C once it is issued		X
E2. For multi-jurisdictional plans, has each jurisdiction requesting approval of the plan documented formal plan adoption? (Requirement §201.6(c)(5))	N/A		X

ELEMENT E: REQUIRED REVISIONS

ELEMENT F. ADDITIONAL STATE REQUIREMENTS (OPTIONAL FOR STATE REVIEWERS ONLY; NOT TO BE COMPLETED BY FEMA)			
F1.			
F2.			

SECTION 2:
PLAN ASSESSMENT

INSTRUCTIONS: The purpose of the Plan Assessment is to offer the local community more comprehensive feedback to the community on the quality and utility of the plan in a narrative format. The audience for the Plan Assessment is not only the plan developer/local community planner, but also elected officials, local departments and agencies, and others involved in implementing the Local Mitigation Plan. The Plan Assessment must be completed by FEMA. The Assessment is an opportunity for FEMA to provide feedback and information to the community on: 1) suggested improvements to the Plan; 2) specific sections in the Plan where the community has gone above and beyond minimum requirements; 3) recommendations for plan implementation; and 4) ongoing partnership(s) and information on other FEMA programs, specifically RiskMAP and Hazard Mitigation Assistance programs. The Plan Assessment is divided into two sections:

1. Plan Strengths and Opportunities for Improvement
2. Resources for Implementing Your Approved Plan

Plan Strengths and Opportunities for Improvement is organized according to the plan Elements listed in the Regulation Checklist. Each Element includes a series of italicized bulleted items that are suggested topics for consideration while evaluating plans, but it is not intended to be a comprehensive list. FEMA Mitigation Planners are not required to answer each bullet item, and should use them as a guide to paraphrase their own written assessment (2-3 sentences) of each Element.

The Plan Assessment must not reiterate the required revisions from the Regulation Checklist or be regulatory in nature, and should be open-ended and to provide the community with suggestions for improvements or recommended revisions. The recommended revisions are suggestions for improvement and are not required to be made for the Plan to meet Federal regulatory requirements. The italicized text should be deleted once FEMA has added comments regarding strengths of the plan and potential improvements for future plan revisions. It is recommended that the Plan Assessment be a short synopsis of the overall strengths and weaknesses of the Plan (no longer than two pages), rather than a complete recap section by section.

Resources for Implementing Your Approved Plan provides a place for FEMA to offer information, data sources and general suggestions on the overall plan implementation and maintenance process. Information on other possible sources of assistance including, but not limited to, existing publications, grant funding or training opportunities, can be provided. States may add state and local resources, if available.

A. Plan Strengths and Opportunities for Improvement

This section provides a discussion of the strengths of the plan document and identifies areas where these could be improved beyond minimum requirements.

Element A: Planning Process

Plan Strengths:

- The plan includes excellent documentation and the Borough should be proud of its approach to public involvement throughout the planning process. The use of a website, survey, and public meetings provided numerous opportunities for direct public engagement and it's clear that the Borough's efforts paid off based on the numerous comments were shared through the survey.

- The matrix that lists comments along with the actions taken to address them within the plan is an outstanding practice to demonstrate the value of community input and how that information has been included in the plan.

- The incorporation of the community wildfire protection plan into the hazard mitigation plan as an appendix is an excellent example of how these plans can help support one another. Further, this can demonstrate how the planning process can be leveraged to update one or both plans concurrently.

- The inclusion of a broad and diverse group of participants on the planning committee including community planners, elected officials, residents, and other organizations is a great way to help solicit whole community feedback and input to the planning process to ensure different perspectives are represented.

- The use of an online story map to help support a virtual open house due to the pandemic is an outstanding way to continue public participation and solicit input from the community in the event the in-person meetings are unavailable.

Opportunities for Improvement:

- The plan identifies the tribal stakeholders within the planning the Knik Tribe, Native Village of Chickaloon, and Native Village of Eklutna. The plan notes that the two tribes were provided an opportunity to review the Borough HMP Update. This is not the same as an opportunity to be invited or engaged in the planning process. Consider how through the plan maintenance and evaluation process as well as future updates how these tribes can be more explicitly included in the process or more clearly document how they were invited to participate. The planning team involved representatives from the municipalities but should show how they were invited to participate. This could include a narrative discussion or documentation, such as an email to stakeholders, not just the community, expressly soliciting their participation. Note to FEMA: The Borough Planner personally invited all three tribes to participate in the HMP Update. No feedback was received. Text was modified accordingly on PDF pages 15 and 16.

Element B: Hazard Identification and Risk Assessment

Plan Strengths:

- The inclusion of climate change considerations and its associated impacts on current and future conditions is an excellent way to help identify near-term mitigation actions that reduce or eliminate longer term issues.

- Identifying the data limitations in Section 6.2.1.4 and noting how the plan can be improved by incorporating that information provides an important consideration for future mitigation actions. Further, including data limitations also can be an approach for Planning Related Activities via FEMA Hazard Mitigation Assistance (HMA) grants or Cooperating Technical Partner (CTP) agreements through RiskMAP may present opportunities.

- Hazard profiles are very detailed and inclusive of both primary natural hazards and secondary hazards that can occur. This information can help inform how one or more community assets may be vulnerable and support the development of mitigation actions or projects to address them.

- The inclusion of some information from the 2019 Risk Report, such as earthquake ShakeMaps, flood depth grids, etc. are excellent ways to leverage new or updated information to identify areas at risk from hazards and community assets that may be vulnerable and where mitigation actions may be considered.

Opportunities for Improvement:

- Consider how additional data that was developed as part of the 2019 Risk Report may be used to augment current risk assessment efforts within the plan. This information can support enhanced identification of vulnerable facilities, cost-benefit analyses, and more specific mitigation actions either on a larger scale or even at a building-specific scale. The Borough may wish to consider how this can be included within a future plan update.

Element C: Mitigation Strategy

Plan Strengths:

- The goals identified within the updated plan highlight the various opportunities that exist for the Borough to reduce risk overall and within each of the hazards that have been identified over the 5-year planning horizon and beyond.

- The integration of the mitigation plan with other community planning mechanisms, such as the items in the Mitigation Strategy related to incorporation of the 2020 HMP Update into 2020 Comprehensive Plan updating process is robust action that can make a significant impact in long-term natural hazard risk reduction efforts.

- The Mitigation Action Plan is very robust, clearly aligns with the outcomes of the risk assessment, and includes actions for each of the identified hazards. The plan also has a strong emphasis on reducing risk to new development and redevelopment through actions such as regulating development in floodplains, seeking to adopt codes for snow loads and wind resistance.

Opportunities for Improvement:

- Consider how the 2019 Risk Report and associated Risk Data can be further incorporated into the next plan update and build off the problem statements and resilience strategies that have been captured through the RiskMAP process.

Element D: Plan Update, Evaluation, and Implementation (*Plan Updates Only*)

Plan Strengths:

- The plan contains information from the Borough's comprehensive plan and other community planning efforts that document where the Borough's future development may occur as well as some of the tools and capabilities that the Borough has at its disposal as it evaluates how changes in development may affect risk and vulnerability over the lifecycle of this plan.

Opportunities for Improvement:

- Consider how the Borough's actions related to regulating development within the floodplain and any additional hazard areas can be captured through any existing permitting processes to help evaluate how changes in development may be increasing vulnerability or capturing mitigation actions (i.e. number of structures built to floodplain standards, structures that incorporate snow and wind loading considerations from adopted building codes. etc.).

B. Resources for Implementing Your Approved Plan

The **Region 10 Integrating Natural Hazard Mitigation into Comprehensive Planning** is a resource specific to Region 10 states and provides examples of how communities are integrating natural hazard mitigation strategies into comprehensive planning. You can find it in the FEMA Library at http://www.fema.gov/media-library/assets/documents/89725.

The **Integrating Hazard Mitigation Into Local Planning: Case Studies and Tools for Community Officials** resource provides practical guidance on how to incorporate risk reduction strategies into existing local plans, policies, codes, and programs that guide community development or redevelopment patterns. It includes recommended steps and tools to assist with local integration efforts, along with ideas for overcoming possible impediments, and presents a series of case studies to demonstrate successful integration in practice. You can find it in the FEMA Library at http://www.fema.gov/library/viewRecord.do?id=7130.

The **Mitigation Ideas: A Resource for Reducing Risk from Natural Hazards** resource presents ideas for how to mitigate the impacts of different natural hazards, from drought and sea level rise, to severe winter weather and wildfire. The document also includes ideas for actions that communities can take to reduce risk to multiple hazards, such as incorporating a hazard risk assessment into the local development review process. You can find it in the FEMA Library at http://www.fema.gov/library/viewRecord.do?id=6938.

The **Local Mitigation Planning Handbook** provides guidance to local governments on developing or updating hazard mitigation plans to meet and go above the requirements. You can find it in the FEMA Library at http://www.fema.gov/library/viewRecord.do?id=7209.

The **Integration Hazard Mitigation and Climate Adaptation Planning: Case Studies and Lessons Learned** resource is a 2014 ICLEI publication for San Diego with a clear methodology that could assist in next steps for integration impacts of climate change throughout mitigation actions. http://icleiusa.org/wp-content/uploads/2015/08/Integrating-Hazard-Mitigation-and-Climate-Adaptation-Planning.pdf

The **Local Mitigation Plan Review Guide and Tool** resource is available through FEMA's Library and should be referred to for the next plan update. http://www.fema.gov/library/viewRecord.do?id=4859

Volcanic Eruption Mitigation Measures: For information on Mitigation Actions for Volcanic Eruptions that would satisfy the C4 requirement, please visit: http://earthzine.org/2011/03/21/volcanic-crisis-management-and-mitigation-strategies-a-multi-risk-framework-case-study/ and http://www.gvess.org/publ.html.

The FEMA Region 10 **Risk Mapping, Analysis, and Planning program (Risk MAP)** releases a monthly newsletter that includes information about upcoming events and training opportunities, as well as hazard and risk related news from around the Region. Past newsletters can be viewed at http://www.starr-team.com/starr/RegionalWorkspaces/RegionX/Pages/default.aspx. If you would like to receive future newsletters, email rxnewsletter@starr-team.com and ask to be included.

The mitigation strategy may include eligible projects to be funded through FEMA's hazard mitigation grant programs (Pre-Disaster Mitigation, Hazard Mitigation Grant Program, and Flood Mitigation Assistance). Contact your Acting State Hazard Mitigation Officer, Rick Dembroski at Rick.Dembroski@alaska.gov, for more information.

Appendix E: Benefit-Cost Analysis Fact Sheet

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Benefit Cost Analysis Fact Sheet

Hazard mitigation projects are specifically aimed at reducing or eliminating future damages. Although hazard mitigation projects may sometimes be implemented in conjunction with the repair of damages from a declared disaster, the focus of hazard mitigation projects is on strengthening, elevating, relocating, or otherwise improving buildings, infrastructure, or other facilities to enhance their ability to withstand the damaging impacts of future disasters. In some cases, hazard mitigation projects may also include training or public education programs if such programs can be demonstrated to reduce future expected damages.

A Benefit-Cost Analysis (BCA) provides an estimate of the "benefits" and "costs" of a proposed hazard mitigation project. The "benefits" considered are avoided future damages and losses that are expected to accrue as a result of the mitigation project. In other words, benefits are the reduction in expected future damages and losses (i.e., the difference in expected future damages before and after the mitigation project). The costs considered are those necessary to implement the specific mitigation project under evaluation. Costs are generally well-determined for specific projects for which engineering design studies have been completed. The timing and severity of benefits, however, must be estimated probabilistically because they depend on the improved performance of the building or facility in future hazard events.

All benefit-costs must be:

- Credible and well documented
- Prepared in accordance with accepted BCA practices
- Cost-effective (BCR $\geq$ 1.0)

General Data Requirements:

- All data entries (other than FEMA) standard or default values) must be documented in the application.
- Data must be from a credible source.
- Provide complete copies of reports and engineering analyses.
- Detailed cost estimate.
- Identify the hazard (e.g., flood, wind, seismic).
- Discuss how the proposed measure will mitigate against future damages.
- Document the project's useful life.
- Document the proposed Level of Protection.
- The Very Limited Data (VLD) BCA module cannot be used to support cost-effectiveness (screening purposes only).
- Alternative BCA software must be approved in writing by FEMA HQ and FEMA Region 10 staff prior to submittal of the application.

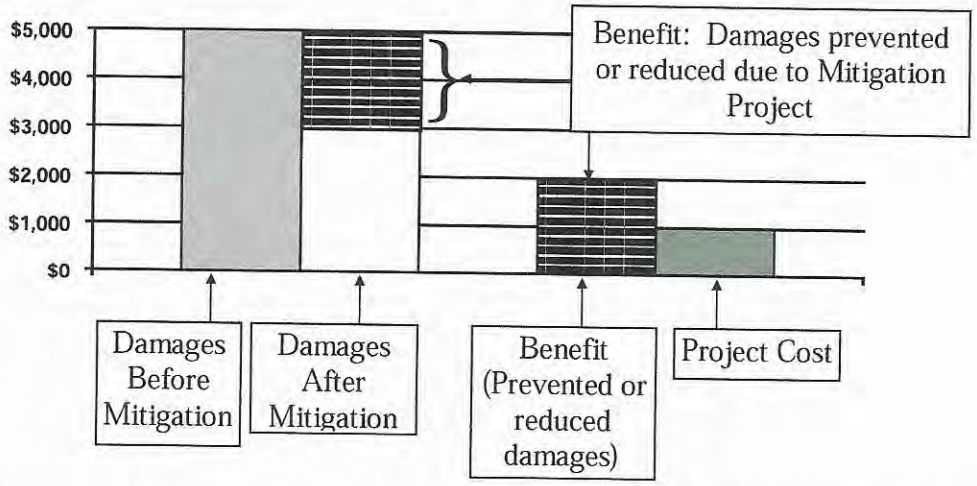
Damage and Benefit Data

- Well documented for each damage event.
- Include estimated frequency and method of determination per damage event.
- Data used in place of FEMA standard or default values must be documented and justified.
- The Level of Protection must be documented and readily apparent.

Benefit Cost Analysis Process

How to Determine Cost-Effectiveness of Mitigation Projects

When Congress enacted the Stafford Act's mitigation provisions, one of the criteria to determine priorities for mitigation funding was cost effectiveness. This cost effective provision was in response to the recognition that there would never be enough funding to completely mitigate against every hazard. To determine the cost effectiveness of proposed mitigation projects, FEMA implemented a benefit cost analysis (BCA) requirement to mitigation grant funding applications. The basic requirement of the BCA is that the benefit of the mitigation project must equal or exceed the cost, a benefit cost ratio (BCR) of 1:1 or greater. Over several years, FEMA developed a set standard values for use in BCA and custom software that establishes mitigation benefits and calculates the BCR. Benefit cost analysis submitted to FEMA to justify mitigation funding requires substantial documentation of project costs and benefits. FEMA provides the custom BCA software and training online at https://www.fema.gov/benefit-cost-analysis. An overview of the BCA process for a mitigation projects follows.



FEMA Basic Benefit-Cost Model. For more information about FEMA's Benefit-Cost Modules, please contact the FEMA Region X Mitigation Division at 425-487-4600.

It is important to understand that benefit-cost analysis is basically the same for each type of hazard mitigation project. The only differences are the types of data that are used in the calculations, depending on whether the project is for floods, earthquakes, or other natural hazards. For example, whereas the depth of flooding is used to estimate damage for flood mitigation projects, the severity of ground shaking is used to estimate damage for earthquake mitigation projects.

Calculating the Benefit – Cost Ratio

In the graph above, cost-effectiveness is determined by comparing the project cost of $1,000, to the value of damages prevented after the mitigation measure, which is $2,000. Because the dollar value of benefits exceeds the costs of funding the project, the project is cost-effective. This relationship is depicted numerically by dividing the benefits by the costs, resulting in a benefit-cost ratio (BCR). The BCR is simply a way of stating whether benefits exceed project costs, and

by how much. To derive the BCR, divide the benefits by the cost ($2,000 ÷ $1,000); if the result is 1.0 or greater, then the project is cost-effective. In this instance, the BCR is 2.0, which far exceeds the 1.0 level. On the other hand, if the cost of the project is $2,000 and the benefits are only $1,000, the project would have a BCR of 0.50 ($1,000 ÷ $2,000) and would not be cost-effective.

Conducting a benefit-cost analysis determines one of two things: either the project is cost-effective (BCR > 1.0), or it is not (BCR < 1.0). If the project is cost-effective, then no further work or analysis needs to be done, there is no third step other than to move the project to the next phase in the approval process. However, if the project is not cost-effective, then it is generally not eligible for FEMA mitigation grant funding.

There are four key elements to all benefit-cost analyses of hazard mitigation projects:

1. An estimate of damages and losses before mitigation
2. An estimate of damages and losses after mitigation
3. An estimate of the frequency and severity of the hazard causing damages (e.g., floods), and
4. The economic factors of the analysis (e.g., discount rate and mitigation project's useful lifetime)

These four key elements and their relationships to one another are detailed in the following example.

Consider a 1,500 square foot, one-story, single family residence located in the Acorn Park subdivision along Squirrel Creek. A proposed mitigation project will elevate the structure four feet at a cost of $20,000. Whether this project is cost-effective depends on the damages and losses from flooding without the mitigation project, the effectiveness of the mitigation project in reducing those damages and losses, the frequency that the house is flooded and the depth of the flood water, and the mitigation project's useful lifetime.

If the pre-mitigation damages are frequent and/or severe, then the project is more likely to be cost-effective. Even minor damage that occurs frequently can, over the life of a project, exceed the up-front costs of implementing a mitigation measure. On the other hand, if the building in the example above only flooded once, then it may not be cost-effective to elevate, unless the damages were significant in relation to the value of the structure and its contents.

- When using the Limited Data (LD) BCA module, users cannot extrapolate data for higher frequency events for unknown lower frequency events.

Building Data

- Should include FEMA Elevation Certificates for elevation projects or projects using First Floor Elevations (FFEs).
- Include data for building type (tax records or photos).
- Contents claims that exceed 30 percent of building replacement value (BRV) must be fully documented.
- Method for determining BRVs must be documented. BRVs based on tax records must include the multiplier from the County Tax Assessor.
- Identify the amount of damage that will result in demolition of the structure (FEMA standard is 50 percent of pre-damage structure value).
- Include the site location (e.g., miles inland) for the hurricane module.

Use Correct Occupancy Data

- Design occupancy for hurricane shelter portion of tornado module.
- Average occupancy per hour for the tornado shelter portion of the tornado module.
- Average occupancy for seismic modules.

Questions to Be Answered

- Has the level of risk been identified?
- Are all hazards identified?
- Is the BCA fully documented and accompanied by technical support data?
- Will residual risk occur after the mitigation project is implemented?

Common Shortcomings

- Incomplete documentation.
- Inconsistencies among data in the application, BCA module runs, and the technical support data.
- Lack of technical support data.
- Lack of a detailed cost estimate.
- Use of discount rate other than FEMA-required amount of 7 percent.
- Overriding FEMA default values without providing documentation and justification.
- Lack of information on building type, size, number of stories, and value.
- Lack of documentation and credibility for FFEs.
- Use of incorrect project useful life (not every mitigation measure equals 100 years).

Appendix F: Plan Maintenance Documents

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Annual Review Questionnaire

PLAN SECTION	QUESTIONS	YES	NO	COMMENTS
PLANNING PROCESS	Are there internal or external organizations and agencies that have been invaluable to the planning process or to mitigation action			
	Are there procedures (e.g., meeting announcements, plan updates) that can be done more efficiently?			
	Has the Task Force undertaken any public outreach activities regarding the MHMP or implementation of mitigation actions?			
HAZARD PROFILES	Has a natural and/or human-caused disaster occurred in this reporting period?			
	Are there natural and/or human-caused hazards that have not been addressed in this HMP and should be?			
	Are additional maps or new hazard studies available? If so, what have they revealed?			
VULNERABILITY ANALYSIS	Do any new critical facilities or infrastructure need to be added to the asset lists?			
	Have there been changes in development patterns that could influence the effects of hazards or create additional risks?			
MITIGATION STRATEGY	Are there different or additional resources (financial, technical, and human) that are now available for mitigation planning within the			
	Are the goals still applicable?			
	Should new mitigation actions be added to the a community's Mitigation Action Plan?			
	Do existing mitigation actions listed in a community's Mitigation Action Plan need to be reprioritized?			
	Are the mitigation actions listed in a community's Mitigation Action Plan appropriate for available resources?			

Mitigation Action Progress Report

Progress Report Period: _____ (date) to _____ (date)

Project Title: _____ Project ID# _____

Responsible Agency: _____

Address: _____

City: _____

Contact Person: _____ Title: _____

Phone #(s): _____ email address: _____

List Supporting Agencies and Contacts:

_____

_____

Total Project Cost: _____

Anticipated Cost Overrun/Underrun: _____

Date of Project Approval: _____ Start date of the project: _____

Anticipated completion date: _____

Description of the Project (include a description of each phase, if applicable, and the time frame for completing each phase): _____

_____

_____

_____

Milestones	Complete	Projected Date of Completion

Plan Goal (s) Addressed:

Goal: _____

Indicator of Success: _____

_____

_____

_____

Project Status

☐ Project on schedule

☐ Project completed

☐ Project delayed*

*explain: _____

_____

☐ Project canceled

Project Cost Status

☐ Cost unchanged

☐ Cost overrun*

*explain: _____

_____

☐ Cost underrun*

*explain: _____

_____

Summary of progress on project for this report:

A. What was accomplished during this reporting period?

_____

_____

_____

_____

B. What obstacles, problems, or delays did you encounter, if any?

_____

_____

_____

_____

C. How was each problem resolved?

_____

_____

_____

_____

Next Steps: What is/are the next step(s) to be accomplished over the next reporting period?

Other Comments:

Community Local Hazard Mitigation Plan Survey

This survey is an opportunity for you to share your opinions and participate in the mitigation planning process. The information that you provide will help us better understand your concerns for hazards and risks, which could lead to mitigation activities that will help reduce those risks and the impacts of future hazard events.

The hazard mitigation process is not complete without your feedback. All individual responses are strictly confidential and will be used for mitigation planning purposes only.

Please help us by taking a few minutes to complete this survey and return it to:

Mat-Su Borough Planning Department: Hazard Mitigation Plan

Vulnerability Assessment

The following questions focus on how vulnerable the community or its facilities are to damage from a particular hazard type using the following vulnerability scale:

0= Don't Know 1 =Minimally Vulnerable 2=Moderately Vulnerable 3=Severely Vulnerable

1. How vulnerable to damage are the *structures* in the community from:

a. Flooding?	0 1 2 3
b. Wildfire?	0 1 2 3
C. Earthquakes?	0 1 2 3
d. Volcanoes?	0 1 2 3
e. Snow Avalanche?	0 1 2 3
f. Severe weather storms?	0 1 2 3
g. Ground failure (landslide)?	0 1 2 3
h. Changes in the cryosphere?	0 1 2 3
i. Other hazards?	0 1 2 3
Please Specify:	

2. How vulnerable to damage are the *critical facilities* within our community from:

[Critical facilities include community shelters, bulk fuel storage tanks, generators, medical facilities, law enforcement offices, fire departments, schools, public works, water treatment, water supplies, communications towers, landfill, etc.

a. Flooding?	0 1 2 3
b. Wildfire?	0 1 2 3
C. Earthquakes?	0 1 2 3
d. Volcanoes?	0 1 2 3
e. Snow Avalanche?	0 1 2 3

f. Severe weather storms?	0 1 2 3
g. Ground failure (landslide)?	0 1 2 3
h. Changes in the cryosphere?	0 1 2 3
i. Other hazards?	0 1 2 3

Please Specify:

3. How vulnerable to displacement, evacuation or life-safety is the community from:

a. Flooding?	0 1 2 3
b. Wildfire?	0 1 2 3
C. Earthquakes?	0 1 2 3
d. Volcanoes?	0 1 2 3
e. Snow Avalanche?	0 1 2 3
f. Severe weather storms?	0 1 2 3
g. Ground failure (landslide)?	0 1 2 3
h. Changes in the cryosphere?	0 1 2 3
i. Other hazards?	0 1 2 3

Please Specify:

4. Do you have a record of damages incurred during past flood events? Yes No

If yes, please describe:_____

_____

_____

Preparedness

Preparedness activities are often the first line of defense for protection of your family and the community. In the following list, please check those activities that you have done, plan to do in the near future, have not done, or are unable to do. *Please check one answer for each preparedness activity*.

Have you or someone in your household:	Have Done	Plan to do	Not Done	Unable to do
Attended meetings or received written information on natural disasters or emergency preparedness?	☐	☐	☐	☐
Talked with family members about what to do in case of a disaster or emergency?	☐	☐	☐	☐
Made a "Household/Family Emergency Plan" in order to decide what everyone would do in the event of a disaster?	☐	☐	☐	☐

Prepared a "Disaster Supply Kit" extra food, water, medications, batteries, first aid items, and other emergency supplies)?	☐	☐	☐	☐
In the last year, has anyone in your household been trained in First Aid or CPR?	☐	☐	☐	☐

5. Would you be willing to make your home more resistant to natural disasters? ☐ Yes ☐ No

6. Would you be willing to spend more money on your home to make it more disaster resistant? ☐ Yes ☐ No ☐ Don't know

7. How much <u>are you willing to spend</u> to better protect your home from natural disasters? *(Check only one)*

☐	Less than $100	☐	Desire to relocate for protection
☐	$100-$499	☐	Other, please explain
☐	$500 and above		
☐	Nothing / Don't know		
☐	Whatever it takes		

Mitigation Activities

A component of the Local Hazard Mitigation Plan activities is developing and documenting additional mitigation strategies that will aid the community in protecting life and property from the impacts of future natural disasters.

Mitigation activities are those types of actions you can take to protect your home and property from natural hazard events such as floods, severe weather, and wildfire. Please check the box for the following statements to best describe their importance to you. Your responses will help us determine your community's priorities for planning for these mitigation activities.

Statement	Very Important	Somewhat Important	Neutral	Not Very Important	Not Important
Protecting private property	☐	☐	☐	☐	☐
Protecting critical facilities (clinic, school, washeteria, police/fire department, water/sewer, landfill)	☐	☐	☐	☐	☐
Preventing development in hazard areas	☐	☐	☐	☐	☐
Protecting natural environment	☐	☐	☐	☐	☐
Protecting historical and cultural landmarks	☐	☐	☐	☐	☐

Promoting cooperation within the community	☐	☐	☐	☐	☐
Protecting and reducing damage to utilities, roads, or water tank	☐	☐	☐	☐	☐
Strengthening emergency services (clinic workers, police/fire)	☐	☐	☐	☐	☐

8. Do you have other suggestions for possible mitigation actions/strategies?

_____

_____

_____

_____

_____

General Household Information

9. Please indicate your age: _____

and Gender: ☐ Male ☐ Female

10. Please indicate your level of education:

☐	Grade school/no schooling	☐	College degree
☐	Some high school	☐	Postgraduate degree
☐	High school graduate/GED	☐	Other, please specify
☐	Some college/trade school		

11. How long have you lived in the Matanuska-Susitna Valley?

☐ Less than 5 years ☐ 5 to 10 years ☐ 11 to 20 years ☐ 21 or more years

12. Do you have internet access? ☐ Yes ☐ No

13. Do you own or rent your home? ☐ Own ☐ Rent

If you have any questions regarding this survey or would like to learn about other ways that you can participate in the update of the Local Hazard Mitigation Plan, please contact the MSB Planning Department.

Thank You for Your Participation!

This survey may be submitted anonymously; however, if you provide us with your name and contact information below we will have the ability to follow up with you to learn more about your ideas or concerns (optional):

Name: _____

Address: _____

_____

Phone: _____

Appendix G: Horseshoe Lake Road Community Assessment and Wildfire Protection Plan

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COMMUNITY ASSESSMENT AND WILDFIRE PROTECTION PLAN (CWPP)

HORSESHOE LAKE

Matanuska-Susitna Borough, Alaska

May 2006/Revised July 2019

COMMUNITY ASSESSMENT AND WILDFIRE PROTECTION PLAN

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Introduction

Horseshoe Lake is a residential community which includes four lakes, Horseshoe Lake, West Lake, Hourglass Lake and Bottle Lake. All lakes have partial road access. Many properties are accessible by walking trail, boat, and plane or snow machine. The community is located within the larger, unincorporated community of Big Lake, Alaska. The area began attracting recreational development in the form of small cabins in the 1950's. The Horseshoe Lake Community was heavily impacted by the 1996 Miller's Reach Fire with many residents losing their homes and surrounding forest to the fire. What was once a scattering of homes nestled among the spruce forest at the edges of the lake has become a community of modern, re-built homes standing proud amid regenerating wildlands.

Planning Process

Project Methodology

Beginning in the winter of 2004, the Matanuska-Susitna Borough Emergency Programs Coordinator met informally with Horseshoe Lake community members to discuss the idea of becoming a Firewise USA Community. In October 2005, community leaders met in a planning session with Chief Bill Gamble of the Big Lake fire department, a forester on contract to the Borough, and Borough Emergency Services representative to formally initiate the process of meeting the requirements to become the first Firewise USA community in Alaska. The contract forester and his partner made several visits to the community to compare aerial photographs and borough GIS maps against what the saw on the ground. This resulted in the Community Assessment of fuel types, vulnerabilities, and risk level that is part of this document.

Preparation of the Horseshoe Lake Protection Plan

The Matanuska-Susitna Borough contracts with Sanders Forestry to conduct and prioritize fire risk assessments in all borough communities. Prescriptions for fuel treatments such as shaded fuel breaks are being written and put out to bid. The Mat-Su area Forester provided professional guidance by visiting the community to compare his observations against this assessment and plan. The Borough's GIS Hazards Mapping Technician provided the Fire Risk Hazard Rating Map. This map reflects data gathered by the foresters in preparation of this plan. It reflects the vegetation fuels types and loading and does not consider the structures.

Community Participation

Public Involvement

Because the 1996 fire had been so traumatic and destructive, the community has become pro-active about preventing and mitigating wildfire. Many residents have systematically cleared burnt standing timber and used Firewise recommendations in rebuilding their homes. Residents of Horseshoe Lake have formed the Horseshoe Lake Road Firewise Community, Inc. and are a non-profit with 501 C-3 tax status that has been a recognized FIREWISE, USA community since 2006. The community organizes many projects each year. They organize an Annual Clean-up Day in May and an Annual FIREWISE Day in June. Residents in the community maintain (5) FIRE HUTS, a demonstration garden and maintain a Fire Danger Sign in the area. The community publishes a local directory which includes the locations of properties, emergency contact information and properties that have personal fire pumps, hose, and homeowner firefighting tools and capabilities. The community maintains an e-mail list of property owners and sends out messages on a regular basis to discuss common interests and provide emergency information. The borough has set up a free woody debris disposal site at the Big Lake transfer site. This is available to Horseshoe Lake residents and neighboring communities throughout the summer.

On June 15, 2006, the entire Big Lake community held a commemoration of the 10 year anniversary of the Miller's Reach Fire to be held at the Big lake Public Library. Horseshoe Lake residents will be on hand to distribute Firewise brochures and talk with other area residents about how to create and maintain defensible space at their homes. The borough Wildfire Mitigation Program staff, assisted by Horseshoe Lake residents, will run a continuous loop of Miller's Reach pictures coupled with a Power Point presentation about Firewise principles. The Horseshoe Lake Road Firewise Community has held several Public "Safety Fairs" in Big Lake and neighboring Meadow Lake since that time. The most recent was held to commemorate the 20 year anniversary of the Miller's Reach Fire. A permanent monument now sits at Station 8-1 in Big Lake to remember that event and the impacts it had on the area.

Public Outreach

The Jordan Lake Park and the Big Lake Public Library are sites of Firewise defensible space demonstration projects completed in 2013 and 2005. The Matanuska-Susitna Borough had been conducting Firewise activities in the Big Lake area as part of its borough-wide Wildfire Mitigation Program. During the summer of 2005, the borough partnered with the Chugachmiut Native Corporation to deliver Firewise education to homeowners in the Big Lake area including Horseshoe Lake.

Firewise presentations were first made to the public attending Big Lake Chamber of Commerce meetings in the winter of 2005 and spring of 2006 and at meeting of the Big Lake Chamber of Commerce during the same months. Horseshoe Lake residents were present at these meetings and shared information about wildfire safety planning. Presentations such as these have also been provided in Sutton, Butte, Wasilla and Willow.

A Horseshoe Lake resident currently sits on the West Lakes Fire Service Board, Local Emergency Planning Commission as well as on the Horseshoe Lake Road Community Firewise Board. The Fire Department provides a monthly report at the Big Lake Community Council meetings. The Council has responsibility for providing Borough administration with community opinions regarding public works projects, firebreaks, road development and maintenance.

COMMUNITY BACKGROUND

The Horseshoe Lake Community is located north of Big Lake in the Matanuska-Susitna Borough (MSB) in southcentral Alaska. This community was developed in the early 1950's consisting of parcels used for recreational cabin sites built by Anchorage and Palmer residents. Over the years the number of year-round residents has increased, though many structures are still recreational or seasonal in use. Initially a single pioneer road was constructed for access and later improved to serve permanent residents. This community is now served by a single access paved road, West Lakes Blvd. which connects via Beaver Lake Rd. to Big Lake Road. Horseshoe Lake Road, the main artery through the community, is an improved paved/chip sealed road which is approximately a 5 mile loop which connects back onto West Lakes Blvd.

MSB real property records list 258 parcels with 142 improved parcels. There are 115 parcels with livable dwellings of which 35 are full-time residences within the community boundaries. The MSB 2019 real property value assessments for the Horseshoe Lake Road Community total $24,517,900.

Electricity is provided to residents by the Matanuska Electrical Association (MEA). Residents use generators as an alternative power source. Natural gas is also available through Enstar Natural Gas. The Big Lake Fire Station 8-2 is a secondary station located south of Horseshoe Lake off of West Lakes Blvd.

The geographic features of this area offer a variety of land use activities including recreation, residential and commercial development. The majority of the homes and properties in the area represent high assessed values with new construction in progress. Currently, there are several home-based businesses in the community including a church camp on Hourglass Lake which is used year round. An FAA VOR site exists west of Horseshoe Lake.

EMERGENCY PREPAREDNESS

Fire protection is provided to the Horseshoe Lake area residents by the West Lakes Fire Department (WLFD) and the State of Alaska, Division of Forestry (DOF). The Division of Forestry has statutory authority to protect forested lands from wildfire on state, municipal, and private lands. The DOF bases its Mat-Su area operations in the City of Palmer at the Palmer Airport. All funding for DOF is from the SOA Legislature.

The West Lakes Fire Department is a semi-autonomous geographical region referred to as a "Fire Service Area" (FSA). The property owners within the FSA pay a tax called a mill-levy that provides the funding for operations and capital projects for the Fire Department.

A national risk analysis organization, the Insurance service Office (ISO), through an on-site audit/evaluation process provides community fire departments with a risk rating on which most insurance companies base homeowner insurance premiums. Under this rating system a 1 rating is the best and a 10 rating the worst meaning "no fire protection is provided". The current risk rating for the West Lakes Fire Department is a 4 rating for all residential structures within five road miles of a fire station and a 10 rating for all residential structures beyond five road miles from a fire station. This rating has improved from an 8 in 2006 when this original document was created.

The West Lakes Fire Department operates five fire stations located strategically throughout the communities it protects, Big Lake and Meadow Lakes. Two stations are located within the community of Big Lake, Station 8-1 and Station 8-2, and three located within the community of Meadow Lakes, Station 71, Station 72, and Station 73. The fire department is staffed by five full-time employees and fifty-five paid-on-call responders. Although structural protection is a primary mission, the fire department has evolved into a multi-risk or "All Hazard" department including limited HAZMAT response to EMS and Wild Land Fire Fighting support.

Additional support for both of these organizations is provided through cooperative, automatic and mutual aid agreements with six other Matanuska-Susitna Borough Fire Departments (Butte, Caswell Lakes, Central Mat-Su, Sutton, Talkeetna, and Willow) and two independent Cities (Houston and Palmer). Another inter-agency agreement between SOA DOF and Bureau of Land Management (BLM) Alaska Fire Service exists to protect both State and Federal jurisdiction land. In the event of a large scale incident additional suppression support would be provided.

Station 7-1

Engine 7-1	1500 GPM	1000 Gal.
Tender 7-1	750 GPM	2800 Gal.
Pumper Tender 7-1	1250 GPM	2000 Gal.
Brush Truck 7-1		
Command 7-2		

Station 7-2

Engine 7-2	1250 GPM	1000 Gal.
Super Tender 7-2	1250 GPM	3000 Gal.
Tender 8-2	1250 GPM	2500 Gal.

Station 7-3

Rehab. 1-Support Vehicle		
Brush Truck 7-3		
Super Tender 7-3	1250 GPM	3000 Gal.
Command 7-3		

Station 8-1

Engine 8-1	1500 GPM	1000 Gal.
Pumper Tender	1250 GPM	2000 Gal.
Brush Truck 8-1		
Command 7-3		
Command 8-1		
Aerial Ladder Truck 7-3		
Fire Boat 8-1		
Fire Boat/Rescue Boat 8-2		

Station 8-2

Engine 8-2	1250 GPM	1000 Gal.
Aerial Ladder Truck 8-2		

The State Division of Forestry has statutory authority to protect forested lands from wildfire on state, private, and municipal lands. The DOF bases its Mat-Su area operations in the City of Palmer and shares a cooperative agreement with the MSB to provide wildland fire protection. Another inter-agency agreement between the State and the BLM Alaska Fire Service exists to protect State and federal jurisdiction lands in southern Alaska. Standard initial attack resources for the Mat-Su Area, Division of Forestry are as follows:

Standard initial attack resources for the Division of Forestry - Mat-Su Area during fire season (April 1 – August 31) are as follows:

Apparatus

(1) Engine – Type 4
(6) Engines – Type 6
(5) Engines – Type 7

Aircraft

(1) Helicopter – Type 2
(1) Air Tanker – Type 1

Fire Crews

Pioneer Peak Hot Shot Crew – Type 1	20 Person
Gannet Glacier Initial Attack Crew – Type 2	20 Person

Fire Suppression Personnel

(13) Fire Suppression Technicians

(2) Fire Suppression Foreman
(1) Fire Management Officer
1) Assistant Fire Management Officer

Fire Prevention Personnel

(2) Fire Prevention Officers
(1) Fire Prevention Foreman

Fire suppression success is determined by an effective initial attack on wildfires to conserve the values at risk and reduce suppression costs. A mutual response of State and Borough trained, experienced and well-equipped firefighters is critical to preparedness.

COMMUNITY RISK

The Horseshoe Lake community consists of multiple private parcels intermixed with wildland fuels. This rural interface community borders several lakes and is surrounded by a greater wildland environment previously burned in the 1996 Miller's Reach Fire. Most of the forest vegetation in the developed areas near Horseshoe Lake survived the devastating affect of the Miller Reach Fire. Other lake communities in the north Big Lake area suffered catastrophic losses. Natural and human caused events that influenced the conservation of homes and forests near Horseshoe Lake do not predicate a low risk probability for future wildland fires.

Fire frequency and ignition potential in the Mat-Su Borough has increased with socioeconomic activities and climatic warming trends. Human caused fires are the most common, specifically debris burning and recreational activities.

FUEL VEGETATION DESCRIPTION

Two general vegetative fuel models can be identified for this area. The first could be described as a previously burned black spruce and muskeg forest fuel complex varying in stand density with a mixed hardwood component. Lesser stands of green black spruce and muskeg vegetation are occluded by burned areas. Surface vegetation consists of spruce/hardwood fire slash, low shrubs, grass/forbs and moss. The regeneration of predominant hardwood seedlings and saplings with an understory of spruce seedlings is evident in most of the burned area. Dead standing fire-killed trees are expected to add to the surface fuel load volume within the next ten years.

The second fuel model more representative of the immediate fire hazard to local residents is the live dense spruce/hardwood forests surrounding homes and roads.

Black and White Spruce are the dominant tree types. Field observations and low level photography indicate a contiguous stand of these types intermixed with structures and in close proximity to single access/egress roads. (Re: Community Maps)

FUEL HAZARDS

Assessment of fire hazard in the project areas is based on prediction of fire intensity, behavior, and the likely effectiveness of fire suppression tactics. Hazard level assessment is based on photo interpreted vegetation types (fuels), and site-specific field observations.

Fire Slash, Hardwood/Spruce Seedlings, Shrubs, Grass/Forbs
(FS, Hd1Bs1C, OS, GH)

Moderate to Very High Hazard Level

The burned areas represent a more transitional fuel model influenced by the regeneration of forest vegetation and the changing composition of fire killed spruce trees. This fuel complex is more representative of a slash model and surface fire behavior varying in intensity determined by live and dead fuel load volumes. Surface fuel loads are expected to accumulate as standing dead trees fall from wind and stump decay. Fuel comparisons can be made with Anderson's Fuel Models #2, #5, #10, #11, #12, and #13*. Rapidly spreading fires with high heat intensities capable of generating firebrands can occur where fuels are well distributed. Active flames can be sustained for longer periods in concentrated material larger than 3 inches. Severe weather conditions could make fire control efforts very difficult.

Natural regeneration after the 1996 burn will require long-term monitoring and research to determine changing wildfire hazard levels and risk probabilities. Custom fuel class models are not available at this time.

(2019)The fuel type originally described as "fire slash, hardwood/spruce seedlings, shrubs, grass/forbs" is still predominant on undeveloped land surrounding the lake and approaching individual lots. However, much of the standing dead and down fire slash is gone, either removed through community management or decaying over time. Walking through some of these areas I noted an ericaceous understory, abundant hardwood regeneration, and scattered spruce regeneration.



Black Spruce Stands (Bs1C, Bs1Hd2C, Bs2Hd2C, Ws2Hd2C)
Very High to Extreme Hazard Level
Spruce stands in this area contain seedling, sapling and pole-size black spruce, white spruce and mixed hardwoods (aspen, birch, cottonwood) trees. Fires in closed black and white spruce stands are often very intense, generating dangerous flame lengths and spread characteristics. Fires in dense spruce stands can exhibit extreme fire intensity, including crowning, torching and spotting behavior. These conditions could best be described by Anderson's Fuel Models # 4, # 6 and # 7*. Consequently, fires burning in severe conditions can be very resistant to ground and aerial control efforts.

*Forest Service General Technical Report INT-122, H.E. Anderson

(2019)The fuel type originally described as "black spruce stands" is still accurate; this fuel type predominates on some private lots along Horseshoe Lake Road. Much of the time, these stands of black spruce (with scattered white spruce) have such high stand densities that self-pruning has taken care of some of the lower canopy ladder fuels, and shading has prevented a shrub/grass understory from developing. With the recent Spruce Bark Beetle infestation Stewardship would recommend reducing stand density and dead trees to reduce the risk from, and effect of, crown

fire, followed by ongoing management of the understory & grass layer that would likely develop in the newly available growing space.



Fire Hazard Summary

The high spruce component found in the described stands is capable of supporting very intense wildfires that exhibit extreme fire behavior and are very resistant to control by direct attack. Wildfire in these fuel types could be life threatening. In the event of wildfire, area residents would need to use the S. Horseshoe Lake Road and West Lakes Blvd. to evacuate which is bordered by hazardous fuel types and has very narrow clearing limits. A wildfire in close proximity to the road could make the road impassable for emergency ingress and egress traffic.

WILDFIRE RISK ASSESSMENT

Wildfire risk is based on the probability a fire could occur.

Risk of Ignition

Big Lake and surrounding communities are subject to a high fire risk due to the vegetation fuel types, topography, weather patterns and the probability of ignition. Debris burning and outdoor recreation activities leading to escaped wildland fires are common.

The local community of Horseshoe Lake has the benefit of natural fuel barriers (lakes). These barriers also limit emergency response vehicles and public evacuation to single road ingress and egress routes. Development density (values at risk) is concentrated in spruce stands where fires are more likely to occur. Human caused ignition within these residential areas represents a higher level of risk to property owners.

Risk to Infrastructure

Most of the residences, critical ingress/egress routes and facilities are within or adjacent to forested areas classed as high to extreme wildfire hazard. Fire risk and hazard evaluations have been performed using low-level aerial photography and ground-truthing by qualified forestry/fire personnel. Many residents had individual home assessments completed by the MSB Department of Emergency Services (DES) in compliance with the Firewise program when the community was designated a Firewise Community. Funding for this service/program is no longer available but can be done by a local Fire Department Prevention Officer upon request.

The majority of values at risk are private homes and properties in a well-established rural community. Part of this community is a church camp (Camp Maranatha) that provides housing and organized activities during the summer fire season. Multiple structures have been constructed on this site, some of them used for facilitating large groups of children and adults. Many of the private homes have been improved or rebuilt with new construction indicating high capital investments reflected by the total assessed property values. Further consideration should be given to more realistic replacement values when evaluating individual structures and facilities.

Power lines should be protected to maintain communications and power to water wells during fire emergencies. This could be combined with the treatment prescriptions of ingress/egress routes where appropriate. Other important values such as recreational lands, fish and wildlife habitat, and water quality are at risk and could be adversely impacted by fires.

HAZARD REDUCTION PRIORITIES

All of the properties prioritized for fuel reduction treatment are privately owned with the exception of public roads and ROW easements. Cooperative land owners and representative agencies should prioritize home defensible and survivable space. Residential homes and other structures should be individually assessed for the

level of risk. Defensible spacing should incorporate the three zone requirements outlined in Firewise Alaska AWFCG. Safe access routes should be provided to the main road system.

Priority projects identified for fuel reduction in the 2006 plan which have been completed include:

- Properties adjacent to the total S. Horseshoe Lake Road system
- Properties along the west shore of West Lake
- The private road accessing properties north and west of West Lake
- The north and west properties of Hourglass Lake and connecting access roads to South Horseshoe Lake Road
- Big Lake Station 8-2

Priority projects identified for fuel reduction are but not limited to:

- Assist residents in maintaining properties adjacent to the total S. Horseshoe Lake Road system through Annual Firewise Day chipping events.
- Assist residents in maintaining properties along the west shore of West Lake through Annual Firewise Day chipping events.
- Assist residents with properties north and west properties of Hourglass Lake and connecting access roads to South Horseshoe Lake Road through Annual Firewise Day chipping events.
- Maintain vegetation clearance at public access on Horseshoe Lake as an evacuation route and water pumping site. A dry hydrant is located at the bottom of the access and used by emergency personnel.
- Eliminate the spruce bark beetle kill trees in the area by providing residents with information on resources available such as the Free woody debris dump site at the Big Lake Transfer Site and grant monies available to help property owners who may need assistance.

Fuel Reduction

The project plan has accomplished risk/hazard fuel reduction objectives by constructing primarily shaded hardwood fuel breaks along Horseshoe Lakes Road, West Lakes Blvd. and on private property (cooperating landowners). The treatment areas were 50-200 feet wide from the existing cleared ROW. Defensible space within the home ignition zones was assessed individually also recognizing threats to adjoining properties.

General Treatment Prescription

All Vegetation (Fuel) Types

- Space, cut, chip or remove live and dead seedling/sapling and pole-timber sized spruce trees by means of mechanical and/or manual fuel reduction contracts. This includes the deposition of dead woody surface debris greater than 3 inches in diameter and 4 feet in length.
- Retain chips on-site to inhibit regeneration of spruce trees and bluejoint reed grass establishment.

- Modify forest fuels characteristics by retaining most hardwood trees, when present, (birch, aspen, cottonwood) to create a hardwood shaded fuel break.
- On private property, sound (rot free) boles greater than 5 inches in diameter and 4 feet in length or greater will be decked for salvage/utilization. This will remain the property of the landowner for private utilization, unless otherwise directed.

The proposed community treatment areas included Horseshoe and West Lakes, the north half of Hourglass Lake and property north of W. Lakes Blvd. including Bottle Lake. (MSB Parcel Map LS09).

General Legal Description:
Sections 12, 13, 14, T17N, R4W, S.M.
Section 11 north of E. Lakes Blvd., T17N, R4E, S.M

The treatment prescriptions are designed to treat hazardous fuels adjacent to primary access/egress routes and provide defensible space to home owners. To complete the project as designed it will be necessary to inform private landowners with land inside or adjacent to the proposed treatment areas about the treatment methods, predicted condition of lands following treatment, project benefits, and to request and obtain their written approval to conduct hazard fuel reduction on specified portions of their lands.

The Firewise Community maintains these areas previously treated through voluntary property owner participation. Chipping Days are held every other year, yearly if necessary to assist property owners.

ACTION PLAN

Information gathered through community meetings, the MSB Emergency Management SBBWMP and the State of Alaska, Division of Forestry has identified a list of primary goals for this CWPP. Emergency preparedness, education, hazard fuel reduction and wildfire mitigation management topics are listed in descending order of priority. Community participants and planning members will need to identify roles and responsibilities, funding needs, project priorities and timetables for implementing the recommended actions.

The actions recommended for the Horseshoe Lake community and proposed hazard fuel reduction projects are listed below.

Emergency Preparedness

Fire Resources and Planning

- Maintain a wildfire pre-suppression plan and evacuation procedures for the Horseshoe Lake community to be coordinated by the West Lake Fire Department (formerly known as the Big Lake Fire Department) and the State Division of Forestry.
- Maintain a fire protection map including: vegetation hazard ratings, ingress/egress routes, values at risk, safety zones, drafting locations, heliports and GPS coordinates.
- Identify emergency response resource needs and maintain a baseline level of equipment, personnel and training to provide adequate fire protection.
- Provide homeowners with fire prevention and planning information.
- Encourage property owners to properly display 911 address signage. Signs can be obtained from the Firewise Community.
- The Firewise community has developed (5) Fire Huts around the community to assist residents and emergency responders. Yearly training is provided to interested residents.

Education

- Educate residents on Firewise objectives, fire prevention and escape routes/safety zones.
- Contact absentee landowners to get them involved in fuel hazard mitigation on their properties.
- Provide education on "shelter in place" versus evacuation
.
- Educate residents on the use of Fire Pumps and associated equipment located in the (5) Fire Huts located throughout the community.
- Maintain Fire Danger Sign located at the entrance of the community to keep resident informed on the latest fire danger.
- Maintain Firewise Demonstration Garden at the entrance of the community and at Jordan Lake Park to educate on safe planting practices and defensible space.

Mitigation Management

- Determine the best locations for fire breaks.
- Encourage the use of hardwood shaded fuel breaks and defensible space.

- Provide residents with treatment prescription specifications and sustained maintenance.

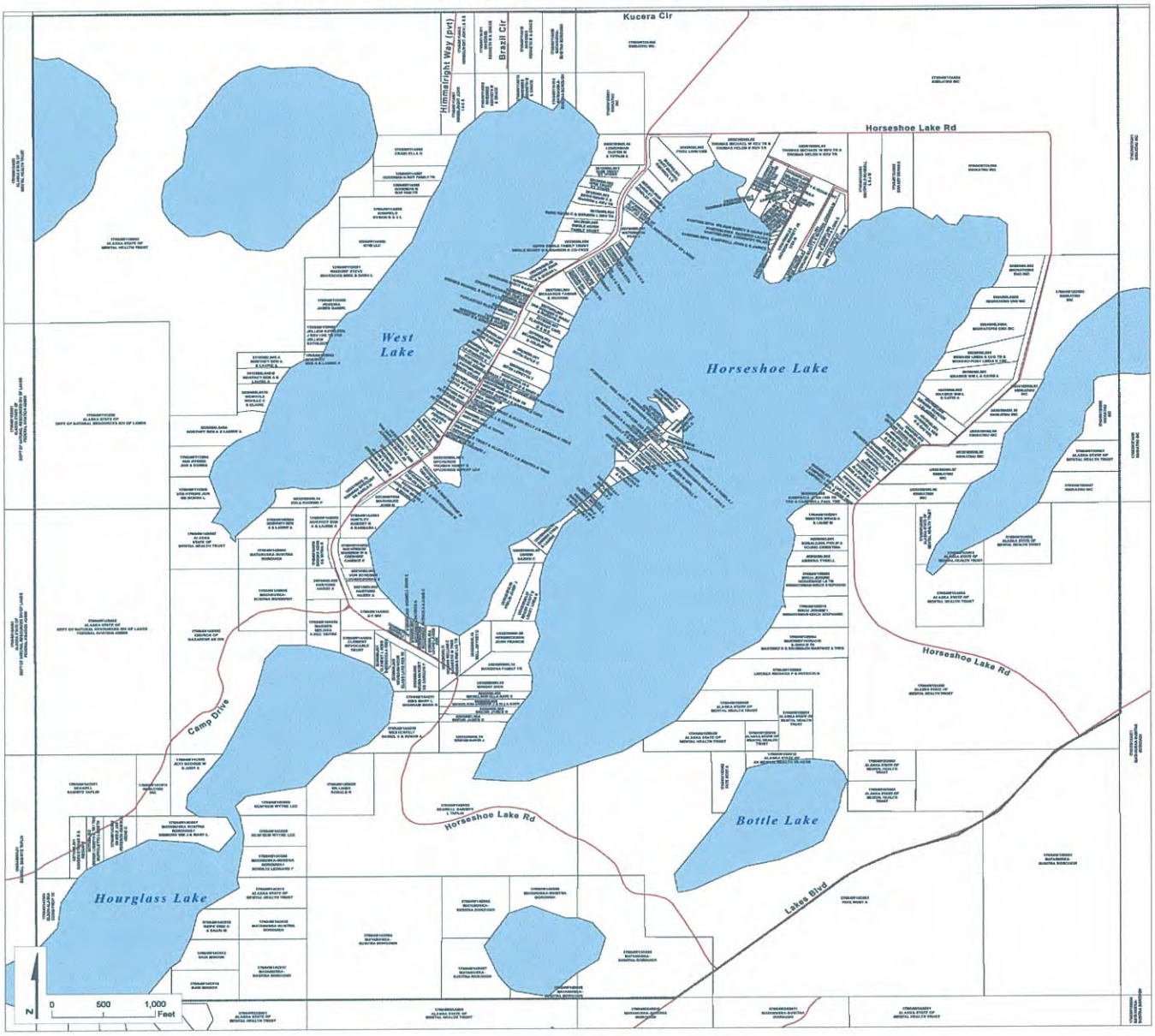
Treatment /Disposal

- Perform fuel reduction treatment by cutting, chipping, shredding, mulching or burning using mechanical or hand labor methods. Remove excess vegetation from the treatment areas.
- Utilize the MSB Big Lake Transfer Site for wood disposal.
- Authorize and coordinate controlled burning with the State of Alaska, Division of Forestry in Palmer utilizing Burn Permit guidelines.

Public Safety

- Identify and maintain ingress/egress routes for South Horseshoe Lake Road and connecting private roads.
- Develop community evacuation plans including future subdivision or development planning.
- Maintain a public notification system for emergencies. Have an alternate telephone calling system for emergency information. The community currently maintains an e-mail list as well as a written community directory that is updated, distributed and published every 2 years. This directory includes emergency contact information and location of all Fire Huts in the area. Emergency responders will be provided with updated copies of the directory as needed.

Horseshoe Lake Community



Horseshoe Lake Community Assessment and Wildfire Protection Plan
Matanuska-Susitna Borough, Alaska
May 2006 / Revised July 2019

June 2006


Horseshoe Lake Community Wildfire Protection Plan
Fire Risk Hazard Rating
based on Vegetation Type

Declaration of Agreement and Concurrence

The following community representatives / agencies have reviewed and supported this Community Assessment and Wildfire Protection Plan.

Stephen Nickel Digitally signed by Stephen Nickel Date: 2019.09.27 08:11:10 -08'00'

Mat-Su Area Forester
Alaska Division of Forestry

West Lakes Fire Chief
Matanuska-Susitna Borough

Cathi Kramer 10/1/19

Cathi Kramer
President
Horseshoe Lake Road Firewise

Tom Buckley 9/27/19

Director, Department of Emergency Services
Matanuska-Susitna Borough

U.S. Department of Homeland Security
FEMA Region 10
130 – 228th Street, SW
Bothell, Washington 98021

FEMA

August 20, 2020

Mr. Rick Dembroski
Acting State Hazard Mitigation Officer
Alaska Division of Homeland Security and Emergency Management
P.O. Box 5750
Fort Richardson, Alaska 99505-5750

Dear Mr. Dembroski:

The Federal Emergency Management Agency (FEMA) Region 10 completed a pre-adoption review of the draft *Matanuska-Susitna Borough Hazard Mitigation Plan Update*. The attached Mitigation Plan Review Tool documents the Region's review and compliance with all required elements of 44 CFR Part 201.6, as well as identifies the jurisdictions participating in the planning process. This letter serves as Region 10's commitment to approve the plan upon receiving documentation of its adoption by participating jurisdictions.

Formal adoption documentation must be submitted to FEMA Region 10 by at least one jurisdiction within one calendar year of the date of this letter, or the entire plan must be updated and resubmitted for review. Once FEMA approves the plan, the jurisdictions are eligible to apply for FEMA Hazard Mitigation Assistance grants.

Please contact John Schelling, Regional Mitigation Planning Program Manager, at (425) 487-2104 or john.schelling@fema.dhs.gov with any questions.

Sincerely,

Ted Perkins

Ted Perkins, P.E.
Acting Chief, Risk Analysis Branch
Mitigation Division

Attachment

JS:v1

CODE ORDINANCE

Sponsored By:
Introduced:
Public Hearing:
Adopted:

MATANUSKA-SUSITNA BOROUGH
ORDINANCE SERIAL NO. 20-XXX

AN ORDINANCE OF THE MATANUSKA-SUSITNA BOROUGH ASSEMBLY ADOPTING MSB 15.24.030(H) THE MATANUSKA-SUSITNA BOROUGH HAZARD MITIGATION PLAN UPDATE.

BE IT ENACTED:

Section 1. Classification. This Ordinance is of a general and permanent nature and shall become a part of the Borough Code.

Section 2. Adoption of Subsection. MSB 15.24.030(H) is hereby adopted to read as follows:

15.24.030(H) The Matanuska-Susitna Borough Hazard Mitigation Plan 2020 Update has been adopted by the commission and assembly as part of the overall Matanuska-Susitna Borough Comprehensive Plan.

Section 3. Effective Date. This ordinance shall take effect upon adoption.

DRAFT

ADOPTED by the Matanuska-Susitna Borough Assembly this __ day of _____, 2021.

_____
VERN HALTER, Borough Mayor

ATTEST:

_____
LONNIE R. McKECHNIE, CMC, Borough Clerk

(SEAL)

DRAFT

By: Taunnie Boothby
Introduced: November 16, 2020
Public Hearing: December 07, 2020
Action:

MATANUSKA-SUSITNA BOROUGH
PLANNING COMMISSION RESOLUTION NO. 20-42

A RESOLUTION OF THE MATANUSKA-SUSITNA BOROUGH PLANNING COMMISSION RECOMMENDING ASSEMBLY ADOPTION OF THE MATANUSKA-SUSITNA BOROUGH HAZARD MITIGATION PLAN 2020 UPDATE.

WHEREAS, the Matanuska-Susitna Borough recognizes the threat that natural hazards pose to people and property; and

WHEREAS, undertaking hazard mitigation actions before disasters occur will reduce the potential for harm to people and property and save taxpayer dollars; and

WHEREAS, assembly adoption of the Matanuska-Susitna Borough Hazard Mitigation Plan 2020 Update is required as a condition of future grant funding for mitigation projects; and

WHEREAS, the Matanuska-Susitna Borough Hazard Mitigation Plan 2020 Update was developed in coordination with the planning team identified in detail on page 17 of the plan, and included the Local Emergency Planning Committee representing multiple jurisdictions and private partners in emergency preparedness and planning; and

WHEREAS, the Matanuska-Susitna Borough Hazard Mitigation Plan 2020 Update was published on Matanuska-Susitna Borough website; and

WHEREAS, the public process included notification to all

community councils, boards and commissions; and

WHEREAS, notice was published in the Frontiersman on March 13, March 27, and April 1, 2020.

WHEREAS, in-person meetings cancelled due to the COVID-19 pandemic response and a vigorous online campaign was conducted to solicit public comment; and

WHEREAS, the Matanuska-Susitna Borough Hazard Mitigation Plan 2020 Update was reviewed and preliminary approved by the State of Alaska, Division of Homeland Security and Emergency Management and the Federal Emergency Management Agency to meet the required elements of 44 Code of Federal Regulations Part 201.6.

NOW, THEREFORE, BE IT RESOLVED, that the Matanuska-Susitna Borough Planning Commission does hereby recommend Assembly adoption of the Matanuska-Susitna Borough Hazard Mitigation Plan 2020 Update.

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DRAFT

ADOPTED by the Matanuska-Susitna Borough Planning Commission this ___ day of _____, 2020.

COLLEEN VAGUE, Chair

ATTEST

KAROL RIESE, Planning Clerk

(SEAL)

DRAFT

YES:

NO:

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COMMISSION BUSINESS

Upcoming PC Agenda Items

(Page 617-622)

COMMISSION BUSINESS

MATANUSKA-SUSITNA BOROUGH
Planning and Land Use Department
350 East Dahlia Avenue • Palmer, AK 99645
Phone (907) 861-7822
Email: planning@matsugov.us

MEMORANDUM

DATE: January 8, 2021

TO: Planning Commissioners

FROM: Alex Strawn, Director of Planning and Land Use

SUBJECT: Items tentatively scheduled for future PC Meetings or Administrative Actions and Updates on PC items sent to the Assembly

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February 1, 2021 *(MSB Assembly Chambers)*

Introduction for Public Hearing Quasi-Judicial
(*None*)

Introduction for Public Hearing Legislative

- **Resolution PC 21-02,** a resolution of the Matanuska-Susitna Borough Planning Commission recommending approval of an Ordinance amending 17.73.095 Domestic Wastewater System Plan Review *(Staff: Mark Whisenhunt).*

Agency/Staff Reports
(*None*)

Land Use Classifications
(*None*)

Public Hearing Quasi-Judicial
(*None*)

Public Hearing Legislative
(*None*)

Unfinished Business
(*None*)

New Business
(*None*)

Commission Business

- Adjudicatory (*if needed*)
- Upcoming Planning Commission Agenda Items (*Staff: Mark Whisenhunt*)

March 1, 2021 *(MSB Assembly Chambers)*

Introduction for Public Hearing Quasi-Judicial
(*None*)

Introduction for Public Hearing Legislative
(*None*)

Agency/Staff Reports
(*None*)

Land Use Classifications
(*None*)

Public Hearing Quasi-Judicial
(*None*)

Public Hearing Legislative
(*None*)

Unfinished Business
(*None*)

New Business
(*None*)

Commission Business

- Adjudicatory (*if needed*)
- Upcoming Planning Commission Agenda Items (*Staff: Mark Whisenhunt*)

Upcoming PC Actions

Quasi-Judicial

- D&S Alaskan Trail Rides, Inc. – Denali SpUD, 29N05W33D012 and 29N05W33D0028 (*Staff: Mark Whisenhunt*).
- Nu Aspen LLC – Talkeetna SpUD, 5352B12L014A (*Staff: Mark Whisenhunt*).
- Nu Aspen LLC – Regulation of Alcoholic Beverages, 5352B12L014A (*Staff: Mark Whisenhunt*).
- Northern Alliance – Marijuana Cultivation Facility, 17N04W25D005 (*Staff: Mark Whisenhunt*).

Legislative

- Lake Management Plan update (*Staff: Ted Eischeid/Kim Sollien).*
- Wetlands Ordinance update *(Staff: Kim Sollien).*

Other Upcoming Administrative Actions (Not going to the PC)

- Aldeman – Multifamily Permit; 17N01W18B011 (*Staff: Mark Whisenhunt*).
- Woodland Park – Nonconforming Structures (amnesty), 3037B01L027 (*Staff: Mark Whisenhunt*).
- Frontier Dream – Administrative Permit for Earth Materials Extraction, 5745000L002 (*Staff: Mark Whisenhunt*).
- Midnight Landing Lot 2 – Multifamily Permit, 7702000L002 (*Staff: Mark Whisenhunt*).
- Vincent – Nonconforming Structures (amnesty), 1068000L034 *(Staff: Mark Whisenhunt).*

PC Decisions Currently Under Appeal

- **Resolution PC 20-29, a** resolution of the Matanuska-Susitna Borough Planning Commission adopting findings of fact and conclusions of law supporting the denial of PC Resolution 20-18 concerning a request for a variance from MSB 17.55 to allow an existing single-family residence to encroach into the required 75-foot waterbody setback at 5782 S. Big Lake Road (Tax ID# 6142000L006); within Township 17 North, Range 3 West, Section 29, Seward Meridian. BOAA Hearing: November 6, 2020 at 10:00 AM *(Applicant: Dennelle Seetomona on behalf of Janice Ellsworth, Staff: Mark Whisenhunt).*
  The decision of the Planning Commission was upheld.
  Filed in Superior Court.

- **Resolution PC 20-30**, a Conditional Use Permit (CUP) in accordance with MSB 17.60 – Conditional Uses; allowing the operation of a junkyard/refuse area, located at 743 West Sunrise Drive (Tax ID# 640500L006); within Township 18 North, Range 2 West, Section 33, Seward Meridian (*Applicant: Dewayne Creech for Creech's Junkyard, Staff: Mark Whisenhunt*).
  BOAA Hearing: December 28, 2020.
  The decision of the Planning Commission was upheld.

- **Resolution PC 20-41,** a conditional use permit request in accordance with MSB 17.70 – Regulation of Alcoholic Beverage Uses; has been submitted by Ashlee Stetson, on behalf of The Office, for the operation of a beverage dispensary (bar) located at 1987 E. Bogard Road (Tax ID #9057000L002); within Township 17 North, Range 1 West, Section 2, Seward Meridian (*Applicant: Ashlee Stetson, on behalf of The Office; Staff: Mark Whisenhunt*).
  BOAA Hearing: Filed December 30, 2020.

Updates on PC items before the Assembly (Pending/Complete)

Planning Commission		Assembly	
Reso		**ORD/Reso #**	**IM**
Resolution PC 20-12, recommending Assembly adoption of MSB 17.68, Outdoor Shooting Facilities, in order to establish standards for commercial, educational, and nonprofit outdoor shooting facilities. Introduction: October 6, 2020; Public Hearing: November 17, 2020 (*Staff: Alex Strawn*).		ORD # 20-025	IM # 20-047
Actions:	07/20/20 – PC Introduction 08/03/20 – PC Public Hearing –Failed 10/06/20 – Assembly Introduction 11/17/20 – Assembly Public Hearing 12/01/20 – Passed as Amended		
Reso		**ORD/Reso #**	**IM**
Resolution PC 20-44, recommending approval of an orindance amending MSB 17.60 to create an administrative permit process for marijuana cultivation facilities and changing the applicability of MSB 17.60 to include facilities that are less than 500 square feet. *(Staff: Alex Strawn).*		ORD # 20-071	IM # 21-143
Actions:	11/16/20 – PC Introduction 12/07/20 – PC Public Hearing –Failed 02/02/21 – Assembly Introduction 02/16/21 – Assembly Public Hearing		
Reso		**ORD/Reso #**	**IM**
Resolution PC 20-45, recommending approval of an orindance amending MSB 17.60 to create hours of operation for marijuana retail facilities and adding additional standards for retail facilities with marijuana consumption areas *(Staff: Alex Strawn).*		ORD # 20-071	IM # 21-143
Actions:	11/16/20 – PC Introduction 12/07/20 – PC Public Hearing –Failed 02/02/21 – Assembly Introduction 02/16/21 – Assembly Public Hearing		