



Haines Borough Planning Commission Regular Meeting Agenda

COMMISSIONERS:

ROB GOLDBERG, CHAIR
LEE HEINMILLER, VICE-CHAIR
ROBERT VENABLES
HEATHER LENDE
DON TURNER III
BRENDA JOSEPHSON
ROB MILLER

Thursday, November 12, 2015 - 6:30 p.m.

Assembly Chambers, 213 Haines Hwy.

1. CALL TO ORDER / PLEDGE TO THE FLAG
2. ROLL CALL
3. APPROVAL OF AGENDA
4. APPROVAL OF MINUTES: October 15, 2015
5. PUBLIC COMMENTS [Items not scheduled for public hearing]
6. CHAIRMAN'S REPORT
7. STAFF REPORT
 - A. Planning & Zoning Report
8. PUBLIC HEARINGS:
 - A. Michael Wilson – Heliport Conditional Use Proposal – Action Item – Property owner Wilson has requested the Planning Commission approve a conditional use permit to allow the installation of a helipad at 36 Mile Haines Highway. **Possible Motion:** Approve Wilson's heliport conditional use proposal.
 - B. Big Salmon Ventures LLC – Heliport Conditional Use Proposal – Action Item – Big Salmon Ventures LLC has requested the commission approve a conditional use permit to allow the development of a heliport. **Possible Motion:** Approve Sundberg heliport conditional use proposal.
 - C. Noise Study – Action Item – At 10/27 meeting, the Assembly passed a motion to “direct the Planning Commission to hold a public hearing on the question of whether the Borough should regulate the use of commercial recreational helicopters in areas of the Haines Borough for the purpose of mitigating noise, and if so, determine what levels are acceptable under what conditions”.
9. UNFINISHED BUSINESS:
10. NEW BUSINESS:
 - A. Historic District/Building Review: None
 - B. Haines Borough Code Amendments: None
 - C. Project Updates: None
 - D. Other New Business:
 1. Energy Efficiency as a CIP Consideration in the Borough's 6 Year Budget – Discussion Item – This item is up for discussion at the request of Commissioner Venables.
 2. Planning Commission Seat D Re-appointment – Action Item – A request for re-appointment to serve on the Planning Commission submitted by Lee Heinmiller is forwarded to the Planning Commission. **Possible motion:** Recommend for the mayor to re-appoint Commissioner Lee Heinmiller to serve Seat D for a three-year term ending November 2018.
11. COMMISSION COMMENTS
12. CORRESPONDENCE
13. SCHEDULE MEETING DATE
 - A. Regular Meeting – Thursday, December 10, 2015 6:30 p.m.
14. ADJOURNMENT



**Haines Borough
Planning Commission Meeting
October 15, 2015
MINUTES**

Draft

1. **CALL TO ORDER/PLEDGE TO THE FLAG** – Chairman **Goldberg** called the meeting to order at 6:30 p.m. in Assembly Chambers and led the pledge to the flag.
2. **ROLL CALL** – **Present:** Chairman Rob **Goldberg**, Commissioners Lee **Heinmiller**, Brenda **Josephson**, Rob **Miller**, Don **Turner III**, and Robert **Venables** (called in). **Absent:** Heather Lende.

Staff Present: Jan **Hill**/Mayor, Brad **Ryan**/Public Facilities Director, and Tracy **Cui**/Planning and Zoning Technician III

Also Present: Diana **Lapham** (Assembly member), Jennifer **Kemp** (DOWL, called in), Tracy **Mikowski**, Michael **Wilson** (called in), David **Smith**, Sean **Gaffney**, Thom **Ely**, Lyle **Huff**, Elizabeth **Lyons**, Carolyn **Weishahn**, and others.

3. **APPROVAL OF AGENDA**

Goldberg suggested adding Item 9B temporary residence ordinance. The other commissioners agreed.

Motion: **Heinmiller** moved to “approve the agenda as amended.” **Turner** seconded it. The motion carried unanimously.

4. **APPROVAL OF MINUTES** – September 10, 2015 Regular Meeting Minutes

Josephson requested adding her comments regarding the minor offenses ordinance under Item 11.

Motion: **Miller** moved to “approve the September 10, 2015 minutes as amended.” **Turner** seconded it. The motion carried unanimously.

5. **PUBLIC COMMENTS**

6. **CHAIRMAN’S REPORT**

7. **STAFF REPORTS**

- A. **Planning & Zoning Staff Report**

Cui reported monthly permits and updates on projects.

8. **PUBLIC HEARINGS**

- A. **Haines Animal Rescue Kennel (HARK) – 50’ Patent Vacation**

Goldberg opened the hearing at 6:45 p.m., and closed the hearing at 6:49 p.m.

Motion: **Turner** moved to “approve the vacation of the 50’ patent reservation within Tract 2, Subdivision Plat of Lot 40, Section 2, Township 31S, Range 59E, CRM”.

Miller seconded it. The motion carried unanimously.

- B. **Michael Wilson – Heliport Conditional Use Proposal**

Goldberg opened the hearing at 7:00 p.m., and closed the hearing at 7:25 p.m.

During the discussion, it was stated that ownership of the land to the west of Wilson's property was unclear.

Motion: Miller moved to "postpone the decision on Wilson's proposal until the adjacent property owners are identified and notified". **Heinmiller** seconded it. The motion carried unanimously.

C. Hill Top Subdivision Preliminary Long Plat Approval

Josephson recused herself.

Goldberg opened the hearing at 7:35 p.m., and closed the hearing at 7:45 p.m.

Motion: Turner moved to "approve the variance request to construct one portion of Bartlett Blvd. at 12 percent and crossroads within 20 feet of a through-road intersection at 5 percent". **Miller** seconded it. The motion carried 5-0.

Motion: Turner moved to "approve the 35 percent preliminary plat with staff's recommendations as amended by the commission". **Miller** seconded it. The motion carried 5-0.

Approval stipulations as follows:

- The variance request was granted to allow one portion of Bartlett Blvd. to be constructed at 12 percent and crossroads within 20 feet of a through-road intersection to be constructed at 5 percent;
- It appears that one portion of land was sold by a party claiming to have good title but was actually owned by someone else, which causes confusion as to the true owner of the property. For this reason, titles are also called a "cloudy title", meaning that it is difficult to "see" who the proper owner is. The developer is required to resolve this "cloudy title" issue;
- Easements must be obtained from the Port Chilkoot Company for the half-street portions of Allie Road and Tower Road not owned by the developer. Copies of the easements must be sent to the Borough as soon as they are executed and before the preliminary plat will be signed. The Port Chilkoot Company should sign "ownership certification and dedication" as affected owner on the plat;
- Water and Sewer main extensions shall be approved by DEC and authorized by the Assembly. The lines must be inspected by an impartial third-party engineer qualified to make such inspections. The inspection costs are borne by the developer. Also, the inspector shall be on site continuously while the work is being done;
- The plat shall show "statement of property taxes";
- The plat shall indicate the zoning of the proposed subdivision;
- Drainage system plans shall be provided with respect to the storm water being discharged into the adjoining property owned by the Port Chilkoot Company;
- Low water pressure issue in the subdivision for block 2, lots 2, 4, 5, 6, 7, 19, 20, 21, 31, 32, 33, 34, 35 and 36 shall be addressed and approved by DEC;
- Due to the height of lots 1 and 3, block 2, no public water service will be available to these lots. Developer must either dig a well or install a pump and water line from an available main at a lower elevation. If installing pump/line, such pump and line must be installed before property owner(s) will be allowed to connect to the public water system. Maintenance of pump and water line will remain the responsibility of the lot owners served by this line;

- Maintenance of private access to lots 1-3, block 2 is the responsibility of the owners of these lots;
- Per HBC 12.08.110(D)(1), the turnaround shall be constructed to a 4 percent grade or less;
- No lots in the subdivision may be re-subdivided except lot 3, block 2, which may only be further subdivided into two lots. Subdivider of lot 3 accepts the responsibility of providing utilities and legal and physical access to both lots formed by the subdivision;
- Hill Side Loop, Hilltop Way, and Bartlett Blvd. shall be constructed to Category I (HBC 12.08.080); all other roads shown in the preliminary plat shall be constructed to Road Construction Standard Category II. Staff will conduct an inspection prior to grading-C or D1 application of the sub-base on Category I and II roads;
- Installation of fire hydrants will be at cost of the developer.

9. UNFINISHED BUSINESS

A. Replat of Primary School Subdivision

Motion: Heinmiller moved to “approve the replat of Primary School Subdivision”. Venables seconded it. The motion carried unanimously.

B. Temporary Residence Ordinance

During the discussion, Lapham explained that there are two recommendations the Assembly would like the commission to re-consider. Due to lack of detailed information, the commission was not able to make a solid decision on this matter. Therefore, the commission requested the Assembly provide those two recommendations and rationale. Upon receipt of the written recommendations, the commission will schedule it at its next regular meeting.

10. NEW BUSINESS

A. Historic District/Building Review: None

B. Haines Borough Code Amendments

1. Clarify “Temporary Commercial Structure”

The commission discussed and decided to consider allowing this type of development in town with specific criteria. They directed staff to conduct initial research on this topic and prepare a staff report/draft ordinance for its next regular meeting.

C. Project Updates – None

D. Other New Business – None

11. COMMISSION COMMENTS

Goldberg said the clarification of the height definition will be on the next agenda.

Turner pointed out that the code says that subdivisions must be reviewed by the commission at 35 percent, but it does not have that requirement for Borough projects. This led to problems in the review of the harbor project.

Venables requested scheduling “energy efficiency in public facilities” for the next meeting.

12. CORRESPONDENCE - None

13. **SET MEETING DATES**

A. Regular Meeting—Thursday, November 12, 2015.

14. **ADJOURNMENT**– 9:45 p.m.

Staff Report for November 12, 2015

1. Permits Issued Since October, 2015

DATE	OWNER/AGENT	TAX ID	LOT	BLK	SUBDIVISION	DEVELOPMENT	ZONE
10/12/15	Haines Borough	C-SEC-26-0404	4		Picture Point Sub.	Beach Access Stairs & Gazebo	WF
10/13/15	Edith Von Stauffenberg	C-TNS-03-0300	3	3	Haines Townsite	New Water & Sewer	C
10/14/15	Adam Richard	C-PTC-0E-0600	SW1/2 LOT6	E	Port Chilkoot Sub.	New Water & Sewer	SSA
10/15/15	HARK	C-STR-02-40B0	40		Sec.2, T31S, R59E, CRM	Patent Vacation	RMU
10/16/15	David Ricke	C-ANY-06-0400	4	6	Anway Sub.	Garage	RR
10/28/15	Ted Lambert	C-ANY-01-2700	27&28	1	Anway Sub.	ROW_New Driveway	RR
10/28/15	Haines Home Building Supply	C-785-00-0200	2		USS 785	Parking Lot Expansion	ILC
10/28/15	Roger Schnabel - Highland Estates Inc.	C-SEC-26-0100	TL2601		Sec26, T30S, R59E, CRM	Clear and grub to the extent of controlling water, provide access for survey work	RMU
10/30/15	Johnathan Richardson	C-TBS-00-3300	33		Tanani Bay Sub.	Storage & Fence	RMU

2. Projects

- Replat of Primary School Subdivision is complete. The mylar has been sent to the Juneau Records Office for recording.
- A citizen submitted a complaint stating his neighbor built a woodshed within setbacks. Staff is planning on conducting a site visit.
- Commissioner Heinmiller and I attended the Alaska Historic Preservation Conference for October 20-22 in Anchorage. The conference provided the guidelines involving planning and preservation work to ensure the conservation of housing stock in residential neighborhoods, economic development and revitalization (including the preservation and revitalization of downtowns), protection of historic landscapes, and preservation and growth management of rural villages. Local governments are highly encouraged to integrate preservation into the land planning process, including incorporating preservation goals into the community master plan and coordinating preservation policies with local development policies.



HAINES BOROUGH
 Planning & Zoning
 P.O. Box 1209
 Haines, AK 99827-1209
 907-766-2231 Ext. 23
 907-766-2716 (fax)

November 6, 2015

From: David Sosa, Borough Manager
 To: Haines Borough Planning Commission

Re: Michael Wilson Heliport Conditional Use Proposal
 35 Mile Haines Highway; 3-HHY-36-3426; General Use Zone

Property owner Michael Wilson requested the Planning Commission approve a Conditional Use Permit to allow the installation of one helipad on his property. HBC 18.70.030(D) (5) allows "heliports" in the general use zone with a conditional use permit. The application has been determined to be complete because it contains all of the information required by HBC 18.40.030(A) (1)-(8).

Under HBC 18.50.040, there are eight criteria to be considered in deciding whether to grant a conditional use permit. Before a conditional use permit is approved, the commission must find that each of the following is met. I have provided my thoughts on each one.

1. This use is so located on the site as to avoid undue noise and other nuisances and dangers.

The property is one 10.4 acre lot. There are three vacant lots directly adjacent to Wilson's property. The ones immediately to the east are state land; the one immediately to the west is a native allotment, and the one immediately to the north is also Wilson's property. On 11/02, surrounding property owners within 200 feet were notified. Staff has not received any comments from these property owners. The proposed helipad is situated on an upper terrace in the middle of the lot as far away from the property line as possible. The nearest residence is located approximate 0.75 mile away.

2. The development of the use is such that the value of the adjoining property will not be significantly impaired.

This is subjective both in general terms and in specific terms. Historical studies as well as real estate appraisal guidelines indicate that property values are not affected due to the proximity of a heliport. The value is based on sales in the area.

3. The size and scale of the use is such that existing public services and facilities are adequate to serve the proposed use.

There is currently a residence on the property with an accommodation facility including a well, septic system, restrooms, and kitchen facilities. The applicant plans to build a lodge on an

existing 40' by 60' foundation if this heliport CUP is issued. Per an email correspondence with property owner Wilson dated 10/07, "...we would investigate the existing well, septic and foundation are adequate before we start building".

4. The specific development scheme of the use is consistent and in harmony with the comprehensive plan and surrounding land uses.

The Haines Borough Comprehensive Plan currently classifies the proposed property as Rural Settlement. The section of Haines Borough 2025 Comprehensive Plan pertaining to the Rural Settlement land use classification states... "The Rural Settlement Land Designation is large-lot residential living outside of downtown where the lack of public water and sewer requires large lots so that wastewater discharge does not harm neighboring properties or the environment. In these areas a more rural lifestyle is valued and protected (through zoning) from incompatible and disruptive activities." (Haines Borough 2025 Comprehensive Plan, Page 153). Per an email correspondence with property owner Wilson dated 10/30, "...If the CUP is allowed we will eventually move all operations away from 33 mile. Before we can do that we have to build the infrastructure to support the operations. Before we invest the time and money to build the infrastructure we need to know if we can operate the helicopter there. We do plan to use the helicopter landing area in some capacity spring 2016 but very little. We will eventually plan to use the area year round".

5. The granting of the conditional use will not be harmful to the public safety, health or welfare.

Landings and takeoffs of helicopters will generate noise and some degree of vibration. However, there are no residential properties in the near vicinity. A conditional use permit may be revocable if the proposed use is detrimental to the public health, safety or welfare.

6. The use will not significantly cause erosion, ground or surface water contamination or significant adverse alteration of fish habitat on any parcel adjacent to state-identified anadromous streams.

According to the 2015 GIS data provided by Alaska Department of Fish and Game, Wilson's property is not within or nearby any state-identified anadromous streams. Property owner Wilson indicated that FAA has reviewed the site and has granted a private heliport designation (AA35). "To safeguard surface water we will have containment for all fueling systems and will provide restroom and trash collection services to handle all human waste".

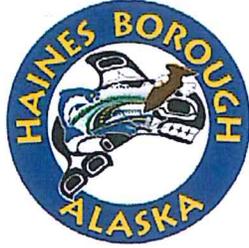
7. The use will comply with all required conditions and specifications if located where proposed and developed, and operated according to the plan as submitted and approved.

Property owner Wilson intends to use the heliport for commercial purposes, and the proposed helipads comply with the setback requirements, per HBC 18.80.030(B). Conditional use permits may be granted with restrictions on operating period, operating hours, etc. This permit could be immediately suspended or revoked should any of the conditions not be adhered to. The applicant must agree and adhere to the conditions of this permit prior to its approval. Also, the Planning Commission may oversee and decide how any issues or concerns of local residents will be resolved.

8. Comments received from property owners impacted by the proposed development have been considered and given their due weight.

As of today, the Borough has not received any written citizen comments. As stated above, no surrounding property owners within 200 feet have responded.

Therefore, I recommend the Planning Commission approve Wilson's conditional use proposal with conditions of (1) conform to the statement set forth in the permit application; and (2) fuel storage will be done in accordance with DEC standards with a fuel spill containment project in place before operation begin. Thank you very much for considering this recommendation.



Haines Borough

Planning and Zoning

103 Third Ave. S., Haines, Alaska, 99827

Telephone: (907) 766-2231 * Fax: (907) 766-2716

APPLICATION FOR CONDITIONAL USE PERMIT

Permit#: _____

Date: _____

Use this form for use approval by the Planning Commission for conditional uses.

I. Property Owner/Agent		Owner's Contractor(If Any)	
Name: Michael Wilson		Name:	
Mailing Address: 8484 Duran Ct. Juneau AK 99801		Haines Borough Business License #:	
Contact Phone: Day Night 907-209-0845		Alaska Business License #:	
Fax: 907-789-5528		Contractor's License #:	
E-mail: mwilson@coastalhelicopters.com		Mailing Address:	
		Contact Phone: Day Night	
		Fax:	
		E-mail:	
II. Property Information			
Size of Property: 10.4 Acres			
Property Tax #: 3-HHY-36-3426			
Street Address: 35 Mile Old Haines Highway			
Legal Description: Lot (s) _____ Block _____ Subdivision _____			
OR			
Parcel/Tract _____ Section _____ Township _____ Range _____			
[Attach additional page if necessary.]			
Zoning: <input type="checkbox"/> Waterfront <input type="checkbox"/> Single Residential <input type="checkbox"/> Rural Residential <input type="checkbox"/> Significant Structures Area <input type="checkbox"/> Rural Mixed Use <input type="checkbox"/> Multiple Residential <input type="checkbox"/> Heavy Industrial <input type="checkbox"/> Waterfront Industrial <input type="checkbox"/> Commercial <input type="checkbox"/> Industrial Light Commercial <input type="checkbox"/> Recreational <input type="checkbox"/> Mud Bay Zoning District <input type="checkbox"/> Lutak Zoning District <input checked="" type="checkbox"/> General Use			
III. Description of Work			
Type of Application (Check all that apply) <input type="checkbox"/> Residential <input type="checkbox"/> Commercial _____ sq. ft. _____ seating capacity if eating/drinking establishment <input type="checkbox"/> Industrial <input type="checkbox"/> Church <input type="checkbox"/> Other _____	Project Description (Check all that apply) <input type="checkbox"/> Single Family Dwelling <input type="checkbox"/> Change of Use <input type="checkbox"/> Multi-Family Dwelling Total # of Units _____ <input type="checkbox"/> Cabin <input type="checkbox"/> Addition <input type="checkbox"/> Accessory Structure <input checked="" type="checkbox"/> Other Helipad _____	Water Supply Existing or Proposed <input type="checkbox"/> None <input type="checkbox"/> Community well <input checked="" type="checkbox"/> Private well <input type="checkbox"/> Borough Water System <input type="checkbox"/> Other _____	Sewage Disposal Existing or Proposed <input type="checkbox"/> None <input checked="" type="checkbox"/> Septic Tank <input type="checkbox"/> Holding Tank <input type="checkbox"/> Borough Sewer System <input type="checkbox"/> Pit Privy <input type="checkbox"/> Other _____

Valuation of Work:
Current use of adjacent properties: There are no residences on adjacent properties or any activity occurring on adjacent properties
Attach the following documents to the permit application: <input type="checkbox"/> Site plan (see Attachment A) showing lot lines, bearings and distances, buildings, setbacks, streets, etc.

PREAPPLICATION (Required)

Pre-application Conference Date: _____

Prior to submission of an application, the developer shall meet with the manager for the purpose of discussing the site, the proposed development and the conditional use permit procedure. The manager shall discuss these matters with the developer with special attention to policies and approval criteria that may pose problems or constraints on the site or the proposed development activity and policies or approval criteria that may create opportunities for the developer.

APPLICATION

Please provide a written narrative explaining how your project will meet the following requirements. You may use the space provided on this form or attach your answers. A variance may only be granted if the Planning Commission finds that these six standards are met.

1. The use is so located on the site as to avoid undue noise and other nuisances and dangers.

Describe what safeguards are being provided (i.e. setbacks or buffers) to meet the condition.
The helipad is situated on an upper terrace in the middle of the cleared 10 acre lot as far away from the property line as possible. The property itself is well away and above the Haines highway to avoid vehicular traffic. The nearest resident is well over a mile away.

2. Explain how the development of the use is such that the value of the adjoining property will not be significantly impaired.

The adjoining properties are undeveloped at this time with no activity occurring. The proposed site is the only developed land on the abandoned old Haines highway. Activity and development in this area will help increase property values and tax revenues for the City of Haines.

3. Explain how the size and scale of the use is such that existing public services and facilities are adequate to serve the proposed use.

There is currently a residence on the property with accommodation facilities including a well, septic system, restrooms, and kitchen facilities. When the conditional use permit is issued it will facilitate the construction of a lodge on an existing 40'x60' foundation with another existing well and septic system. There are plans for additional accommodation facilities with restrooms and food service.

4. Describe how or why the specific development scheme of the use is consistent and in harmony with the comprehensive plan and surrounding land uses.

This conditional use permit will allow the Alaska Heli-Skiing operation to move from the road side operation among residences at 33 mile to a more private, remote and safer operational area away from existing residences and vehicular traffic.

5. Explain how the granting of the conditional use will not be harmful to the public safety, health or welfare.

The use of this area for helicopter operations will ensure public safety by being away from roadways and other occupied property.

6. Describe the safeguards that will be provided so that the use will not significantly cause erosion, ground or surface water contamination or significant adverse alteration of fish habitat on any parcel adjacent to state-identified anadromous streams.

The land is already developed, we want to simply land a helicopter there. The FAA has reviewed the site and has granted a private heliport deignation (AA35). To safeguard surface water we will have containment for all fueling systems and will provide restroom and trash collection services to handle all humsn waste.

IV. FEE

A non-refundable fee of \$150 must accompany this application. Checks must be made payable to the HAINES BOROUGH.

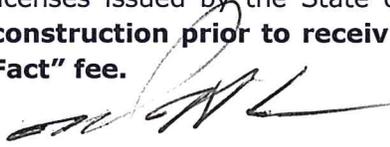
NOTICE

Per HBC 18.50.040, Comments received from property owners impacted by the proposed development will be considered and given their due weight. Additionally, the Planning Commission may impose one or more of the following conditions:

1. Development Schedule. The conditions may place a reasonable time limit on construction activity associated with the development, or any portion thereof, to minimize construction-related disruption to traffic and neighbors, to ensure that lots are not sold prior to substantial completion of required public improvements, or to implement other requirements.
2. Use. The conditions may restrict the use of the development to specific uses indicated in the approval.
3. Owner's Association. The conditions may require that if a developer, homeowner or merchant association is necessary or desirable to hold or maintain common property, that it be created prior to occupancy.
4. Dedications. The conditions may require conveyances of title, licenses, easements or other property interests to the public, to public utilities, or to the homeowners association. The conditions may require construction of public utilities or improvements to public standards and then dedication of public facilities to serve the development and the public.
5. Construction Guarantees. The conditions may require the posting of a bond or other surety or collateral (which may provide for partial releases) to ensure satisfactory completion of all improvements required by the commission.
6. Commitment Letter. The conditions may require a letter from a utility company or public agency legally committing it to serve the development if such service is required by the commission.
7. Covenants. The conditions may require the recording of covenants or other instruments satisfactory to the borough as necessary to ensure permit compliance by future owners or occupants.
8. Design. The conditions may require the adoption of design standards specific to the use and site.

V. CERTIFICATION

I hereby certify that I am the owner or duly authorized owner's agent, that I have read this application and that all information is correct. I further certify that I have read, understand and will comply with all of the provisions and permit requirements outlined hereon. I also certify that the site plan submitted is a complete and accurate plan showing any and all existing and proposed structures on the subject property and that the use will comply with all required conditions and specifications, will be located where proposed and when developed, will be operated according to the plan as submitted. All contract work on this project will be done by a contractor holding valid licenses issued by the State of Alaska and the Haines Borough. **I am aware that if I begin construction prior to receiving permit approval, I will be assessed a \$250.00 "After-the-Fact" fee.**



 Owner or Agent

9/24/2015

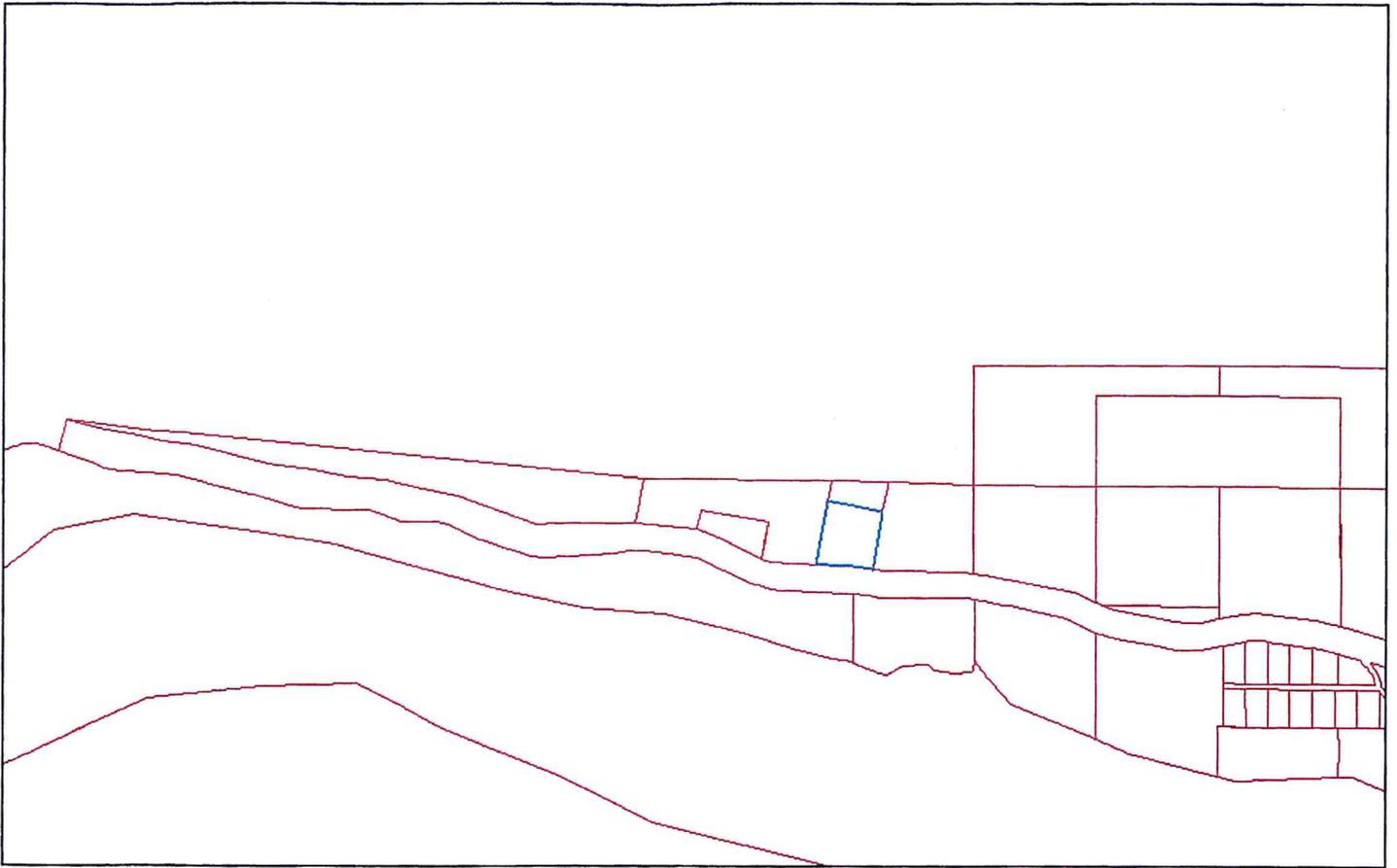
 Date

PROVISIONS: The applicant is advised that issuance of this permit will not relieve responsibility of the owner or owner's agents to comply with the provisions of all laws and ordinances, including federal, state and local jurisdictions, which regulate construction and performance of construction, or with any private deed restrictions.

Office Use Only Below This Line

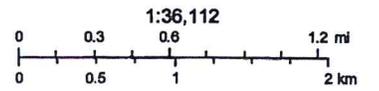
<input type="checkbox"/> Applicant Notified Application is Complete and Accepted <div style="display: flex; justify-content: space-between; font-size: small;"> (Date) (Notified via) (Initials) </div>					
Non-Refundable Permit Fee \$ <u>150.00</u> Receipt No. _____ Received By: <u>Nathan Friele</u> Date: <u>9/24/15</u>			Information/Documentation Req'd Rec'd <input type="checkbox"/> <input type="checkbox"/> State Fire Marshal <input type="checkbox"/> <input type="checkbox"/> State DEC <input type="checkbox"/> <input type="checkbox"/> Variance/Conditional Use Permit <input type="checkbox"/> <input type="checkbox"/> Sign Permit		
Zoning	Bldg. Height	Lot Coverage %	Const. Type	Occupancy	# Stories
This application meets all applicable Borough policies and a permit is issued, conditional on the substantial completion of construction within two years and the following special requirements:					
Planning Commission Chair:			Date:		

INCOMPLETE APPLICATIONS WILL NOT BE ACCEPTED



August 19, 2015

hainesborough_parcel07312015





Haines Borough Parcel Viewer



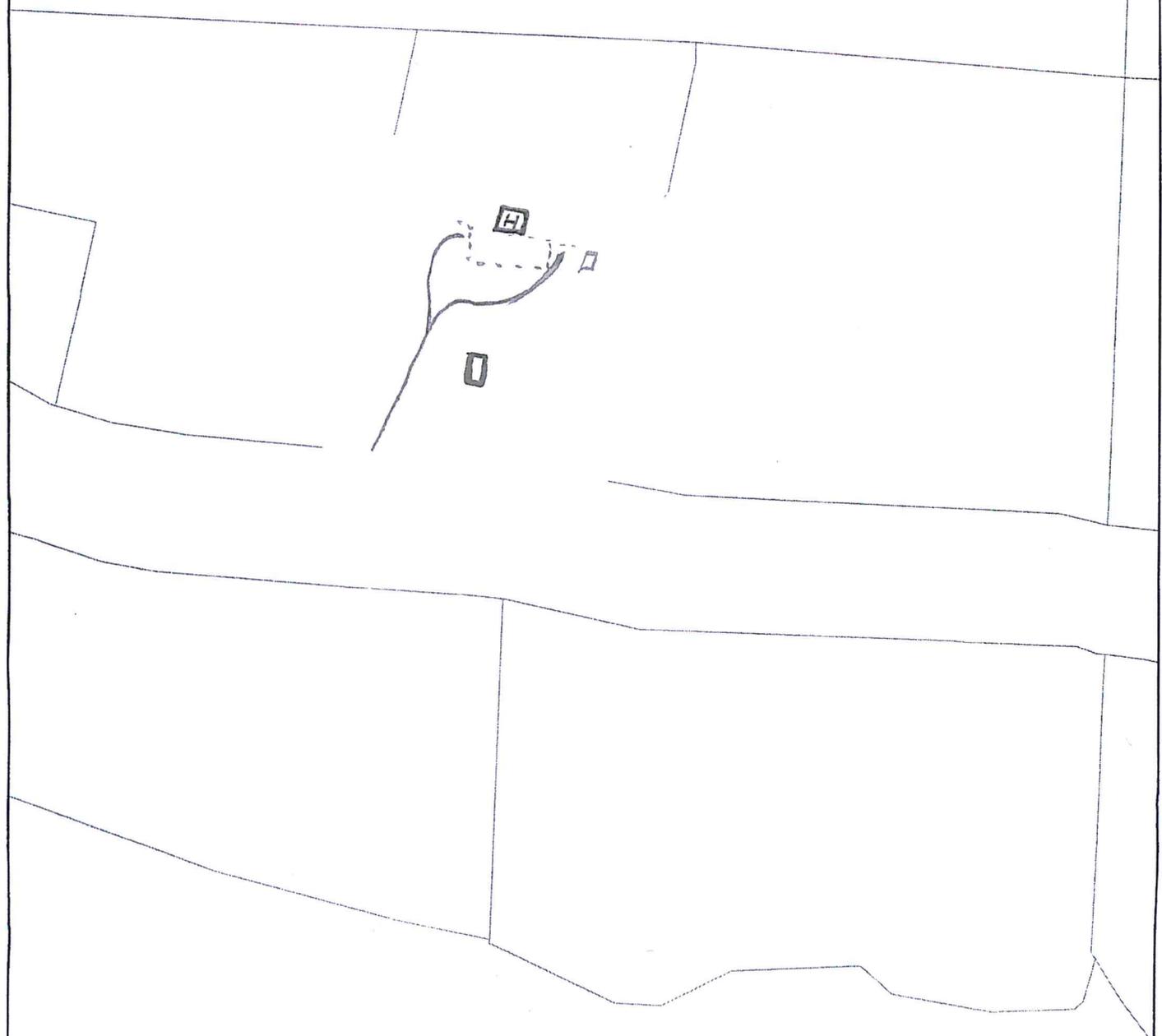
Find
TAXIDNO,

hainesborough_parcels07312015: 3-HHY-36-3426

HOWNTYPE	PRI
OWNTYPE	PRIVATE
TAXIDNO	3-HHY-36-3426
PRIMARYOWNER	VICKI L. GAROADNER
SECONDARYOWNER	MIKE H. WILSON
ADDRESS	HC 60, BOX 2613
CITY	HAINES
STATE	AK
ZIPCODE	99827
COUNTRY	US
LEGALDESC1	USS 3426
LEGALDESC2	HAINES HWY, 36 MILE
LEGALDESC3	10.4 ACRES
Zone	GU
LAND	98,000
EXEMPTLAND	0
TAXABLELAND	98000
IMPROVEMENT	75400
EXEMPTIMPROV	0
TAXABLEIMPROV	75400
ASSESSEDVALUE	173400
TAXABLEVALUE	173400
MILLRATE	8.15
TOTALTAX	1,413.21

[Zoom to](#)

Haines





Mike Wilson <mwilson@coastalhelicopters.com>

35 Mile Haines highway

Mike.Edelmann@faa.gov <Mike.Edelmann@faa.gov>
To: mwilson@coastalhelicopters.com

Tue, Jul 15, 2014 at 10:15 AM

Hi again Mike:

Do not know how it happened, but I got an almost immediate response.

The LOC ID of your landing area is **AA35**. Not sure why you were not notified by the aeronautical publishing group when that was issued. Again, that is a different FAA office, so I only have a fleeting glimpse of how they conduct their day to day business. They may not be issuing notification letters to the airport owners/operators anymore.

You can locate information on the landing area here: <http://www.gcr1.com/5010web/>

Enter AA35 in the Loc ID search box, and it will provide you with the information recognized by the FAA. If it is published on the AirportIQ5010 website, the FAA has acknowledged your landing area, and it is official. Also, if you see any information that needs to be changed or updated, you can do so via this site: http://www.faa.gov/air_traffic/flight_info/aeronav/digital_products/dafd/

Your landing area will not necessarily appear on the Sectional charts, or in the AK Supplement, unless you either specifically request it, or the FAA determines that including it benefits the aviation community as a whole. Typically, private landing areas do not show up in the Alaska Supplement, but they can be shown on the Sectional chart if it is believed that the VFR pilots will benefit from using it as a landmark.

Hope that helps

Mike E.

907-271-5026

From: Mike Wilson [mailto:mwilson@coastalhelicopters.com]
Sent: Tuesday, July 15, 2014 6:45 AM
To: Edelmann, Mike (FAA)
Subject: 35 Mile Haines highway

CERTIFICATE OF OWNERSHIP

I (WE) HEREBY CERTIFY THAT I AM (WE ARE) OWNER (S) OF THE PROPERTY SHOWN AND DESCRIBED HEREON AND THAT I (WE) HEREBY ADOPT THIS PLAT OF SUBDIVISION WITH MY (OUR) FREE CONSENT, AND DEDICATE ALL EASEMENTS, ROADS, TRAILS, PARKS AND OTHER OPEN SPACES TO PUBLIC AND PRIVATE USE AS NOTED:

DATE **JAN. 15th** 19 **92**

WITNESS _____ OWNER **Mary Choate**
 WITNESS _____ OWNER **Mary Choate**
 Lot 1 and 2

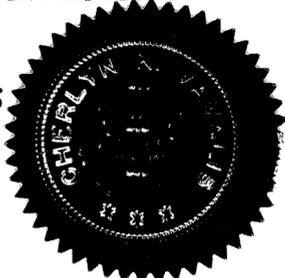
NOTARY'S ACKNOWLEDGEMENT

UNITED STATES OF AMERICA)
 STATE OF ALASKA) ss.

THIS IS TO CERTIFY THAT ON THIS **15th** DAY OF **JAN.** 19 **92** BEFORE THE UNDERSIGNED, A NOTARY PUBLIC IN AND FOR THE STATE OF ALASKA, DULY COMMISSIONED AND SWORN, APPEARED **Mary Choate** TO ME KNOWN AND KNOWN TO ME TO BE THE PERSON DESCRIBED IN AND WHO EXECUTED THE FOREGOING INSTRUMENT, AND ACKNOWLEDGED TO ME THAT **S** HE SIGNED AND SEALED THE SAME FREELY AND VOLUNTARILY FOR THE USES AND PURPOSES THEREIN MENTIONED.

WITNESS MY HAND AND OFFICIAL SEAL THE DAY AND YEAR IN THIS CERTIFICATE FIRST ABOVE WRITTEN.

Cherlyn K. Zavalis
 NOTARY PUBLIC FOR ALASKA
 MY COMMISSION EXPIRES: **Nov. 22, 1995**



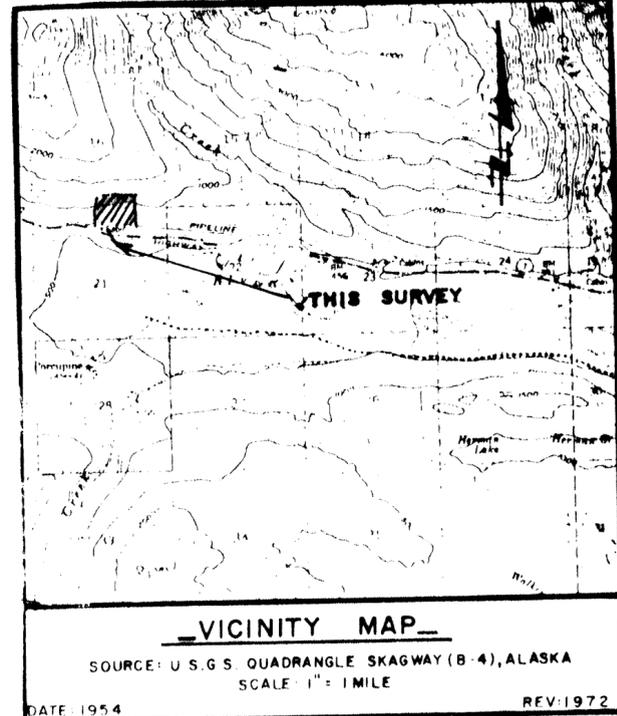
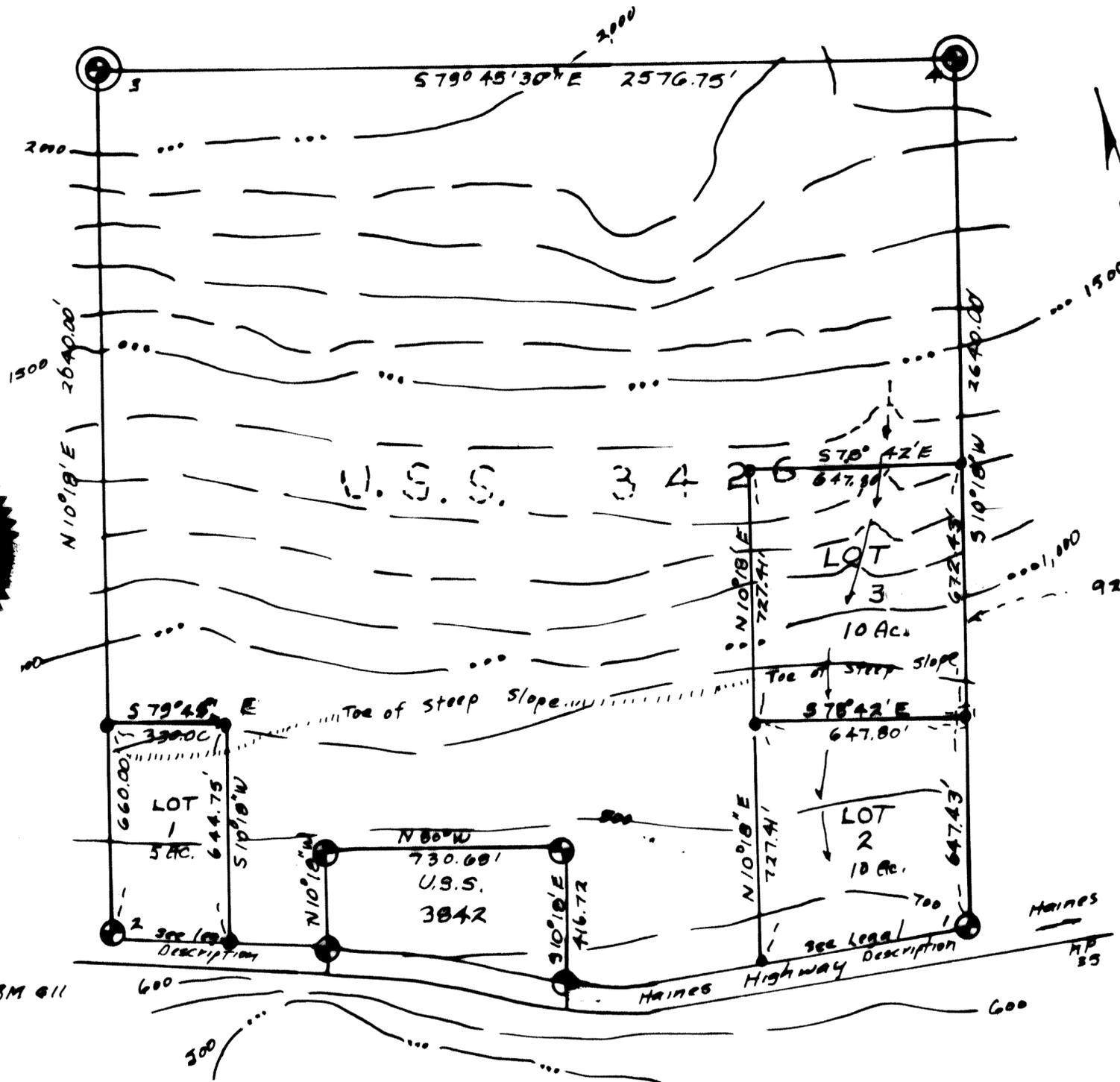
NOTES

1. Basis of bearing of survey is U.S.S. 3842 West boundary monuments and Lot 1 monuments from earlier survey. Distances are horizontal distances
2. Lots 1 and 2 are five or more acres in size, so Department of Environmental Conservation approval for onsite wastewater disposal is not required.
3. No platting approval is required as no platting authority presently exists for surveys at site.
4. See Department of Transportation and Public Facilities ROW maps for Haines Highway, for Lots 1 and 2 highway frontage, from about Mile 35 on.
5. Above noted toe of steep slope, ground rises 40-50%
6. NOT WITHIN A TAXING AUTHORITY.

Cherlyn K. Zavalis

SURVEYOR'S CERTIFICATE

I HEREBY CERTIFY THAT I AM PROPERLY REGISTERED AND LICENSED TO PRACTICE LAND SURVEYING IN THE STATE OF ALASKA, AND THAT THIS PLAT REPRESENTS A SURVEY MADE BY ME OR UNDER MY DIRECT SUPERVISION, AND THE MONUMENTS SHOWN THEREON ACTUALLY EXIST AS DESCRIBED, AND THAT ALL DIMENSIONS AND OTHER DETAILS ARE CORRECT.



LOTS 1 AND 2 LEGAL DESCRIPTION ALONG HAINES HIGHWAY

LOT 1: Commencing at Corner 2, the SW corner of U.S. Survey No. 3426 and Lot 1, a point of intersect on the northerly ROW of the Haines Highway; thence S 89 degrees E 12.87 feet; thence S 85 degrees 36 minutes E 77.09 feet; thence S 82 degrees 11 minutes E 77.09 feet and thence S 80 degrees 29 minutes E 163.68 feet along the said ROW to the SE corner of said Lot 1.

LOT 2: Commencing at Corner 1, the SE corner of U.S. Survey No. 3426 and Lot 2, a point of intersect on the northerly ROW of the Haines Highway; N 80 degrees W 120.52 feet; thence N 81 degrees 29 minutes W 82.24 feet; thence N 84 degrees 28 minutes W 82.24 feet; thence 87 degrees 27 minutes W 82.24 feet; thence 89 degrees 34 minutes W 82.24 feet and thence 88 degrees 5 minutes 205.39 feet along said ROW to the SW corner of said Lot 2.

- LEGEND**
- Recovered GLO or BLM monuments
 - Monuments not recovered
 - Monuments placed this survey

94-20

HAINES 2000
 REC. DIST

DATE: **5/24 19 94**
 TIME: **12:55 P M**
 Requested By: **JPH/ACC**
 Address: _____

CHOATE SUBDIVISION
FIRST ADDITION
 A **2** LOT SUBDIVISION FROM
 U.S. SURVEY 3426
 SECTION 16, T 28 S, R 54 E, CRM
 HAINES RECORDING DISTRICT, AK
 Sections 16 & 21
 Scale 1" = 300' October 1991

Client: Central Council,
 Tlingit and Haida
 320 W. Willoughby Ave.
 Suite 300
 Juneau, Alaska
 for Mary Choate

R. Folta, L.S., Haines, Alaska



HAINES BOROUGH, ALASKA
P.O. BOX 1209
HAINES, AK 99827
(907) 766-2231 FAX (907) 766-2716

November 2, 2015

Re: Heliport Conditional Use Permit Public Hearing
36 Mile Haines Highway; 3-HHY-36-3426; General Use Zone

Dear Land Owner,

Haines Borough records show that you own property within 200 feet of the above-listed property. The property owner, Michael Wilson, has requested for the Planning Commission to approve a conditional use permit to allow the installation of a helipad at 36 Mile Haines Highway.

The Haines Borough Planning Commission will hold a public hearing on the matter at the next regular Planning Commission meeting. The meeting will be held at 6:30 p.m. at the Haines Borough Assembly Chambers on Thursday, November 12, 2015. As an owner of property within 200 feet of the above-listed property you are being notified that you are invited to attend and comment at the meeting. If you have any questions on the matter please contact the Borough.

Sincerely,

A handwritten signature in black ink, appearing to read "Tracy Cui".

Tracy Cui
Planning and Zoning Technician III
Phone: (907)766-2231 Ext 23
Fax: (907) 766-2716
xcui@haines.ak.us

Enclosure

List of Property Owners Notified

State of Alaska Land

State of Alaska
Dept of Natural Resources
Mining Land & Water
Realty Services Section
550 W 7th Avenue Suite 1050A
Anchorage Alaska 99501

State of Alaska
Dept of Natural Resources
Mining Land & Water
South East Regional Office
PO Box 111020
Juneau Alaska 99811-1020

Native Allotment

Bureau of Indian Affairs
Attention: Cyril Andrews, Jr.
3601 C Street, suite 1100
Anchorage, AK 99503

Crawford Smith, Jr
PO Box 906
Brodheads ville PA 18322

Barrington Smith
895 West 12th St apt 105
Juneau, AK 99801

Nicholas Kokotovich, Jr.
PO Box 78
Haines, AK 99827

Xi Cui

To: Jamie Katzeek
Subject: RE: Emailing: Book 5 Pg 182 BIA to Choate deed .pdf

-----Original Message-----

From: Jamie Katzeek [<mailto:jkatzeek@chilkat-nsn.gov>]
Sent: Monday, November 02, 2015 10:08 AM
To: Xi Cui
Subject: RE: Emailing: Book 5 Pg 182 BIA to Choate deed .pdf

Good Morning Tracy -

Here is the address you should send to for BIA:
Bureau of Indian Affairs
Attention: Cyril Andrews, Jr.
3601 C Street, suite 1100
Anchorage, AK 99503

Thank you,

-Jamie

-----Original Message-----

From: Xi Cui [<mailto:xcui@haines.ak.us>]
Sent: Friday, October 30, 2015 1:38 PM
To: Jamie Katzeek
Subject: RE: Emailing: Book 5 Pg 182 BIA to Choate deed .pdf

Jamie,

Thank you again for identifying the ownership info. Since it is a native allotment ("restricted" land issued by BIA), I guess it will be appropriate to send a courtesy copy of the notification letter to BIA regarding the proposed heliport. Could you please provide a proper mailing address?

Tracy

-----Original Message-----

From: Jamie Katzeek [<mailto:jkatzeek@chilkat-nsn.gov>]
Sent: Friday, October 30, 2015 1:19 PM
To: Xi Cui
Subject: RE: Emailing: Book 5 Pg 182 BIA to Choate deed .pdf

Hi Tracy -

The probate decision has not yet been decided by the courts, but the probable heirs of Mary Choate are:

Crawford Smith, Jr
PO Box 906
Brodheadsville PA 18322

Barrington Smith
895 West 12th St apt 105
Juneau, AK 99801

Nicholas Kokotovich, Jr.
PO Box 78
Haines, AK 99827

Thank you,

-Jamie

Chapter 18.50 CONDITIONAL USE

HBC 18.50.040 Decision.

The commission shall hold a public hearing on the conditional use permit application. The commission may adopt the manager's recommendation on each requirement unless it finds, by a preponderance of the evidence, that the manager's recommendation was in error and states its reasoning for such finding with particularity. In addition, for good cause, the commission may alter the conditions on approval or requirements for guarantees recommended by the manager.

A. Before a conditional use permit is approved, the commission must find that each of the following requirements is met:

1. The use is so located on the site as to avoid undue noise and other nuisances and dangers;
2. The development of the use is such that the value of the adjoining property will not be significantly impaired;
3. The size and scale of the use is such that existing public services and facilities are adequate to serve the proposed use;
4. The specific development scheme of the use is consistent and in harmony with the comprehensive plan and surrounding land uses;
5. The granting of the conditional use will not be harmful to the public safety, health or welfare;
6. The use will not significantly cause erosion, ground or surface water contamination or significant adverse alteration of fish habitat on any parcel adjacent to state-identified anadromous streams;
7. The use will comply with all required conditions and specifications if located where proposed and developed, and operated according to the plan as submitted and approved;
8. Comments received from property owners impacted by the proposed development have been considered and given their due weight.

If the commission finds that the development implements all relevant requirements of this title, it shall issue a conditional use permit and the conditions and requirements shall be part of the approved permit. If the development does not implement all relevant requirements, or the commission otherwise determines the development is not in compliance with this title, the commission shall deny the permit and note with particularity its reasons for the decision.

B. The commission may alter the manager's proposed permit conditions, impose its own, or both. Conditions may include one or more of the following:

1. **Development Schedule.** The conditions may place a reasonable time limit on construction activity associated with the development, or any portion thereof, to minimize construction-related disruption to traffic and neighbors, to ensure that lots are not sold prior to substantial completion of required public improvements, or to implement other requirements.
2. **Use.** The conditions may restrict the use of the development to specific uses indicated in the approval.
3. **Owner's Association.** The conditions may require that if a developer, homeowner or merchant association is necessary or desirable to hold or maintain common property, that it be created prior to occupancy.
4. **Dedications.** The conditions may require conveyances of title, licenses, easements or other property interests to the public, to public utilities, or to the homeowners association. The conditions may require construction of public utilities or improvements to public standards and then dedication of public facilities to serve the development and the public.
5. **Construction Guarantees.** The conditions may require the posting of a bond or other surety or collateral (which may provide for partial releases) to ensure satisfactory completion of all improvements required by the commission.
6. **Commitment Letter.** The conditions may require a letter from a utility company or public agency legally committing it to serve the development if such service is required by the commission.
7. **Covenants.** The conditions may require the recording of covenants or other instruments satisfactory to the borough as necessary to ensure permit compliance by future owners or occupants.
8. **Design.** The conditions may require the adoption of design standards specific to the use and site.



Haines Borough

Planning and Zoning

103 Third Ave. S., Haines, Alaska, 99827
 Telephone: (907) 766-2231 * Fax: (907) 766-2716

APPLICATION FOR CONDITIONAL USE PERMIT

Permit#: _____

Date: _____

Use this form for use approval by the Planning Commission for conditional uses.

I. Property Owner/Agent		Owner's Contractor(If Any)	
Name: Scott Sundberg		Name: None	
Mailing Address: p.o. box 1368		Haines Borough Business License #:	
Contact Phone: Day 907 3140445 Night 907 766 3418		Alaska Business License #:	
Fax:		Contractor's License #:	
E-mail: sunny@seaba-heli.com		Mailing Address:	
		Contact Phone: Day Night	
		Fax:	
		E-mail:	
II. Property Information			
Size of Property: 16.2 acres			
Property Tax #: 3-CLR-35-0200			
Street Address: Chilkat Lake Road			
Legal Description: Lot (s) 10 Block _____ Subdivision Sundebrg Sub division _____			
OR			
Parcel/Tract _____ Section _____ Township _____ Range _____			
[Attach additional page if necessary.]			
Zoning: <input type="checkbox"/> Waterfront <input type="checkbox"/> Single Residential <input type="checkbox"/> Rural Residential <input type="checkbox"/> Significant Structures Area			
<input type="checkbox"/> Rural Mixed Use <input type="checkbox"/> Multiple Residential <input type="checkbox"/> Heavy Industrial <input type="checkbox"/> Waterfront Industrial			
<input type="checkbox"/> Commercial <input type="checkbox"/> Industrial Light Commercial <input type="checkbox"/> Recreational <input type="checkbox"/> Mud Bay Zoning District			
<input type="checkbox"/> Lutak Zoning District <input checked="" type="checkbox"/> General Use			
III. Description of Work			
Type of Application (Check all that apply) <input type="checkbox"/> Residential <input checked="" type="checkbox"/> Commercial _____sq. ft. _____seating capacity if eating/drinking establishment <input type="checkbox"/> Industrial <input type="checkbox"/> Church <input type="checkbox"/> Other _____	Project Description (Check all that apply) <input type="checkbox"/> Single Family Dwelling <input type="checkbox"/> Change of Use <input type="checkbox"/> Multi-Family Dwelling Total # of Units _____ <input type="checkbox"/> Cabin <input type="checkbox"/> Addition <input type="checkbox"/> Accessory Structure <input checked="" type="checkbox"/> Other heliport _____	Water Supply Existing or Proposed <input type="checkbox"/> None <input type="checkbox"/> Community well <input type="checkbox"/> Private well <input type="checkbox"/> Borough Water System <input type="checkbox"/> Other _____	Sewage Disposal Existing or Proposed <input type="checkbox"/> None <input type="checkbox"/> Septic Tank <input type="checkbox"/> Holding Tank <input type="checkbox"/> Borough Sewer System <input type="checkbox"/> Pit Privy <input type="checkbox"/> Other _____

Valuation of Work: \$9800
Current use of adjacent properties: Rural development, rural residential, light commercial and industrial
Attach the following documents to the permit application: <input checked="" type="checkbox"/> Site plan (see Attachment A) showing lot lines, bearings and distances, buildings, setbacks, streets, etc.

PREAPPLICATION (Required)

Pre-application Conference Date: _____

Prior to submission of an application, the developer shall meet with the manager for the purpose of discussing the site, the proposed development and the conditional use permit procedure. The manager shall discuss these matters with the developer with special attention to policies and approval criteria that may pose problems or constraints on the site or the proposed development activity and policies or approval criteria that may create opportunities for the developer.

APPLICATION

Please provide a written narrative explaining how your project will meet the following requirements. You may use the space provided on this form or attach your answers. A variance may only be granted if the Planning Commission finds that these six standards are met.

1. The use is so located on the site as to avoid undue noise and other nuisances and dangers.

Describe what safeguards are being provided (i.e. setbacks or buffers) to meet the condition.

For all criteria see attached document Titled, (Winter Recreation Village with Conditional Heliport

2. Explain how the development of the use is such that the value of the adjoining property will not be significantly impaired.

see attached

3. Explain how the size and scale of the use is such that existing public services and facilities are adequate to serve the proposed use.

see attached

4. Describe how or why the specific development scheme of the use is consistent and in harmony with the comprehensive plan and surrounding land uses.

attached

5. Explain how the granting of the conditional use will not be harmful to the public safety, health or welfare.

attached

6. Describe the safeguards that will be provided so that the use will not significantly cause erosion, ground or surface water contamination or significant adverse alteration of fish habitat on any parcel adjacent to state-identified anadromous streams.

attached

IV. FEE

A non-refundable fee of \$150 must accompany this application. Checks must be made payable to the HAINES BOROUGH.

NOTICE

Per HBC 18.50.040, Comments received from property owners impacted by the proposed development will be considered and given their due weight. Additionally, the Planning Commission may impose one or more of the following conditions:

1. Development Schedule. The conditions may place a reasonable time limit on construction activity associated with the development, or any portion thereof, to minimize construction-related disruption to traffic and neighbors, to ensure that lots are not sold prior to substantial completion of required public improvements, or to implement other requirements.
2. Use. The conditions may restrict the use of the development to specific uses indicated in the approval.
3. Owner's Association. The conditions may require that if a developer, homeowner or merchant association is necessary or desirable to hold or maintain common property, that it be created prior to occupancy.
4. Dedications. The conditions may require conveyances of title, licenses, easements or other property interests to the public, to public utilities, or to the homeowners association. The conditions may require construction of public utilities or improvements to public standards and then dedication of public facilities to serve the development and the public.
5. Construction Guarantees. The conditions may require the posting of a bond or other surety or collateral (which may provide for partial releases) to ensure satisfactory completion of all improvements required by the commission.
6. Commitment Letter. The conditions may require a letter from a utility company or public agency legally committing it to serve the development if such service is required by the commission.
7. Covenants. The conditions may require the recording of covenants or other instruments satisfactory to the borough as necessary to ensure permit compliance by future owners or occupants.
8. Design. The conditions may require the adoption of design standards specific to the use and site.

V. CERTIFICATION

I hereby certify that I am the owner or duly authorized owner's agent, that I have read this application and that all information is correct. I further certify that I have read, understand and will comply with all of the provisions and permit requirements outlined hereon. I also certify that the site plan submitted is a complete and accurate plan showing any and all existing and proposed structures on the subject property and that the use will comply with all required conditions and specifications, will be located where proposed and when developed, will be operated according to the plan as submitted. All contract work on this project will be done by a contractor holding valid licenses issued by the State of Alaska and the Haines Borough. **I am aware that if I begin construction prior to receiving permit approval, I will be assessed a \$250.00 "After-the-Fact" fee.**

Scott Sundberg

Digitally signed by Scott Sundberg
 DN: cn=Scott Sundberg, o=SEABA LLC, ou,
 email=sunny@seaba-heli.com, c=US
 Date: 2015.06.29 10:00:16 -08'00'

10/29/2015
 Date

Owner or Agent

PROVISIONS: The applicant is advised that issuance of this permit will not relieve responsibility of the owner or owner's agents to comply with the provisions of all laws and ordinances, including federal, state and local jurisdictions, which regulate construction and performance of construction, or with any private deed restrictions.

Office Use Only Below This Line

<input checked="" type="checkbox"/> Applicant Notified Application is Complete and Accepted <u>10/29/2015</u> <u>In person</u> <u>XC</u> <small>(Date) (Notified via) (Initials)</small>					
Non-Refundable Permit Fee \$ <u>150.00</u> Receipt No. <u>027214</u> Received By: <u>T. Tolson</u> Date: <u>10.29.15</u>			Information/Documentation Req'd Rec'd <input type="checkbox"/> <input type="checkbox"/> State Fire Marshal <input type="checkbox"/> <input type="checkbox"/> State DEC <input type="checkbox"/> <input type="checkbox"/> Variance/Conditional Use Permit <input type="checkbox"/> <input type="checkbox"/> Sign Permit		
Zoning	Bldg. Height	Lot Coverage %	Const. Type	Occupancy	# Stories
This application meets all applicable Borough policies and a permit is issued, conditional on the substantial completion of construction within two years and the following special requirements:					
Planning Commission Chair:			Date:		

INCOMPLETE APPLICATIONS WILL NOT BE ACCEPTED

Big Salmon Heliport Fine View

Legend

- 📍 1200 feet
- 📍 1200 feet
- 📍 Corona cabin
- 📍 SEABA LLC
- 📍 Departure route

Eco lodge and Winter Village Site

Heliport area

1200 feet

SEABA LLC

Corona cabin

Departure and approach



Big Salmon Heliport

Legend

-  Departure route
-  Distance to Platcha residence 3500ft
-  University of AK Property

University of AK Property

Village site

Heliport area

Departure and approach

Distance to Platcha Residence 3500 ft

Google earth

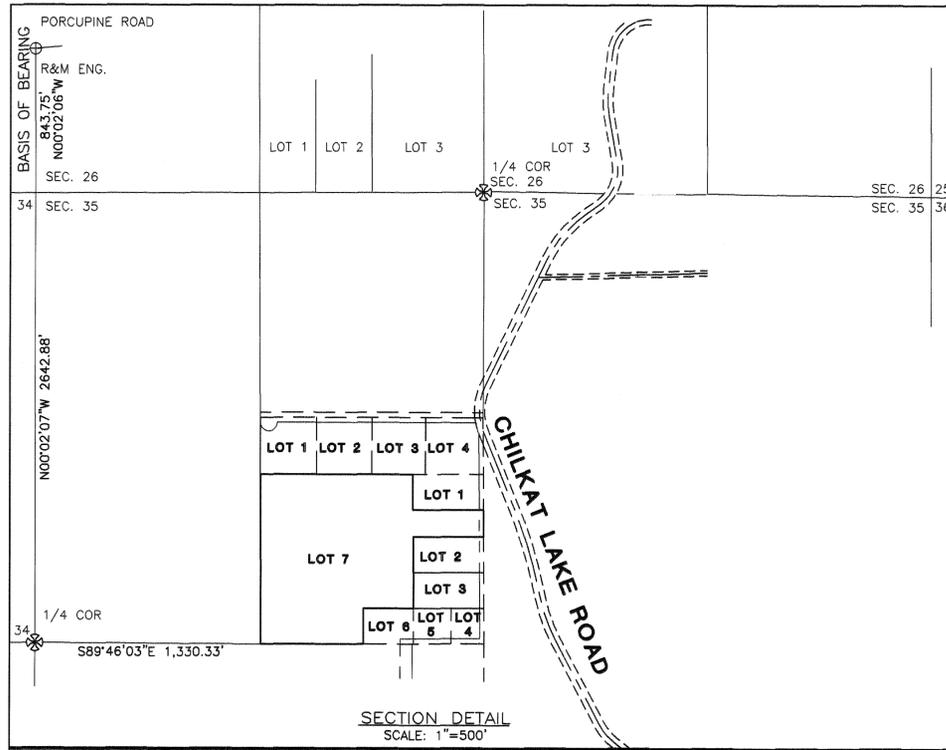
Image © 2015 DigitalGlobe
© 2015 Google



N



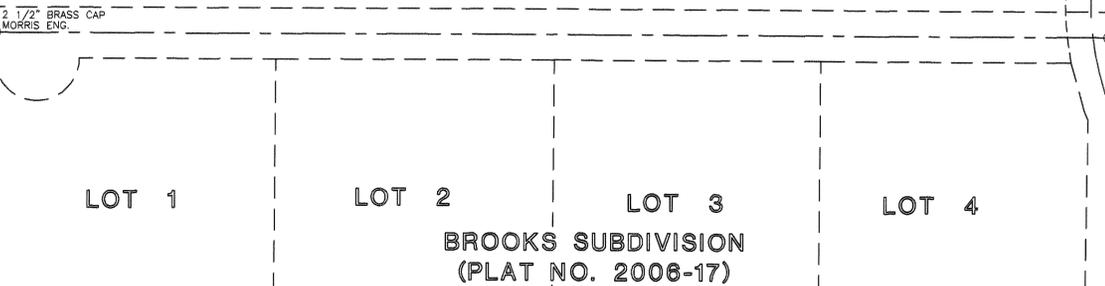
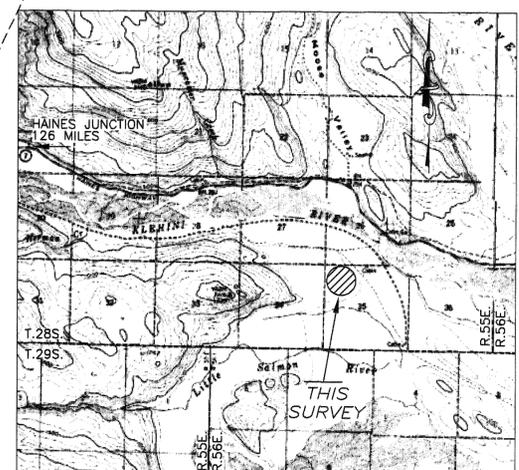
1000 ft



CERTIFICATION OF BOROUGH ASSESSOR
 I HEREBY CERTIFY THAT THE APPLICANTS ARE NOT DELINQUENT ON PROPERTY TAXES FOR THE PROPERTY SPECIFIED ON THE SUBDIVISION PLAT SHOWN HEREON.
 Dated June 29, 2012.
 Haines Borough Assessor Dean M Olson

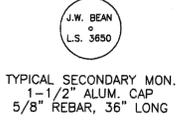
NOTE:
 THIS PLAT IS IN THE RURAL MIXED USE ZONING DISTRICT.

CERTIFICATE BY THE HAINES BOROUGH
 THE REPLAT OF LOT 7, SUNDBERG SUBDIVISION, PLAT NO. 2009-6, SEC. 35, T.28S., R.55E., C.R.M., AS DESCRIBED HEREON HAS BEEN FOUND TO COMPLY WITH THE PROVISION SET FORTH IN HC. 18.100 AND IS APPROVED FOR RECORDING WITH THE HAINES RECORDERS OFFICE DATED:
 2012
Lee Heinmiller 6-29-2012
 LEE HEINMILLER VICE-PLANNING COMMISSION CHAIR DATE
Stephanie R Scott 6-29-2012
 MAYOR HAINES BOROUGH DATE



SOURCE: U.S.G.S. QUAD SKAGWAY (B-3) VICINITY MAP SCALE: 1" = 1 MILE

- LEGEND**
- ⊗ G.L.O./B.L.M. 2-1/2" BRASS MONUMENT OF RECORD
 - ⊕ PRIMARY MONUMENT RECOVERED THIS SURVEY
 - SECONDARY MONUMENT SET THIS SURVEY BY J.W. BEAN
 - SECONDARY MONUMENT RECOVERED THIS SURVEY



STATEMENT OF OWNERSHIP:

I HEREBY CERTIFY THAT BIG SALMON VENTURES, LLC. IS THE OWNER OF THE PROPERTY SHOWN AND DESCRIBED HEREON AND THAT I AS GENERAL MANAGER HEREBY ADOPT THIS PLAT OF SUBDIVISION WITH MY FREE CONSENT, AND DEDICATE ALL STREETS, ALLEYS, WALKS, PARKS AND OTHER OPEN SPACES TO PUBLIC OR PRIVATE, USE AS NOTED:

Date 6/29, 2012
 Owner Big Salmon Ventures, LLC
 BIG SALMON VENTURES, LLC.
 SCOTT SUNDBERG, GENERAL MANAGER
 PO BOX 309
 HAINES, ALASKA 99827

CURVE TABLE

CURVE #	DELTA	RADIUS	LENGTH	CHORD	CHORD BEARING
C1	052°41'48"	50.00'	45.99'	44.38'	N63°15'40"E
C2	162°36'51"	50.00'	141.91'	98.85'	S09°05'01"E
C3	036°02'03"	50.00'	31.45'	30.93'	N54°50'39"W

NOTARY'S ACKNOWLEDGEMENTS:

UNITED STATES OF AMERICA)
 STATE OF ALASKA) S.S.
 THIS IS TO CERTIFY THAT ON THIS 29th DAY OF June, 2012 BEFORE ME THE UNDERSIGNED, A NOTARY PUBLIC IN AND FOR THE STATE OF ALASKA, DULY COMMISSIONED AND SWORN, PERSONALLY APPEARED:
Scott Sundberg

KNOWN TO ME TO BE THE PERSON (PERSONS) DESCRIBED IN AND WHO EXECUTED THE ABOVE AND FOREGOING INSTRUMENT, AND ACKNOWLEDGED TO ME THAT HE (SHE) (THEY) SIGNED AND SEALED THE SAME FREELY AND VOLUNTARILY FOR THE USES AND PURPOSES THEREIN MENTIONED.

WITNESS MY HAND AND OFFICIAL SEAL THE DAY AND YEAR IN THIS CERTIFICATE FIRST ABOVE SIGNED.

Notary Public for Alaska Jamie Seim
 My Commission Expires 1/28/13

CERTIFICATE OF REGISTERED LAND SURVEYOR

I HEREBY CERTIFY THAT I AM A PROFESSIONAL LAND SURVEYOR, LICENSED AND REGISTERED IN THE STATE OF ALASKA, AND THAT THIS PLAT WAS PREPARED UNDER MY DIRECT SUPERVISION, THAT ALL DIMENSIONAL DETAILS AND RELATIVE BEARINGS ARE CORRECT AS SHOWN AND THAT ALL EASEMENTS AND RIGHT OF WAYS APPEARING ON THE LAND ARE AS SHOWN.

Date 6-25-2012



DRAWN BY: GDM Graphics
CHECKED BY: J.W.B.
DRAWING DATE: 6-26-2012
FIELD BOOK:
SCALE: 1"=100'
JOB No.: HNS-103007-SUNDBERG-LOTS7-10
REVISIONS:
GRID

J.W. BEAN INC.
 PROFESSIONAL SURVEYOR
 1070 ARCTIC CIRCLE
 JUNEAU - ALASKA
 (907) 789-0590
 SURVEYOR - PLANNER

- NOTES:**
- ALL PLAT BEARINGS SHOWN ARE TRUE BEARINGS AS ORIENTED TO THE BASIS OF BEARINGS.
 - ALL DISTANCES SHOWN ARE REDUCED TO HORIZONTAL.
 - RECORDED BEARINGS AND DISTANCES ARE SHOWN ENCLOSED IN PARENTHESIS, MEASURED OR CALCULATED BEARINGS AND/OR DISTANCES ARE SHOWN WITHOUT PARENTHESIS.
 - THIS SUBDIVISION IS NOT SERVED BY MUNICIPAL WATER OR SEWER. ALL WATER SUPPLY AND WASTEWATER HANDLING SYSTEMS MUST COMPLY WITH ALASKA DEPARTMENT OF ENVIRONMENTAL CONSERVATION REQUIREMENTS.

2012-6
 Plat # Haines
 Rec Dist
7-2 2012
 Date
 Time 11:06 AM

**A PLAT OF
 SUNDBERG SUBDIVISION II
 A RESUBDIVISION OF
 LOT 7, SUNDBERG SUBDIVISION
 SECTION 35
 T.28S., R.55E., C.R.M.
 WITHIN HAINES BOROUGH, ALASKA
 HAINES RECORDING DISTRICT - HAINES, ALASKA**

Big Salmon Ventures LLC
AK Entity # 100622
Box 1368 Haines, Ak 99827
.6 mile Chilkat lake Rd.
Property Id# 3-clr-35-0200

Winter Recreation Village with Conditional Heliport

Introduction

Background:

In 2007 Big Salmon Ventures purchased said property with the intent to build and run a lodge in conjunction with a Nordic, Heliskiing, and Snow-cat clients. When the property was purchased, heliports in the borough were not a conditional use, but a use by right in the GU. Because of the instability of the borough tour permit and heliskiing regulation we have been apprehensive in committing to the development of our master business plan, until more solidified and reasonable regulations were adopted.

Since 2008 then we have been improving the basic needs of the property like access and road infrastructure to accommodate the potential uses.

In March of 2008 Helicopter was given permission to land on the property for emergency fueling. This low fuel landing was done with the knowledge that we had all rights to do so on the property. It was at this point Eagle Vista subdivision resident voiced concern over this use.

This landing happened at a the time SEABA's operating plan had not identified the property as a base of operations and we were informed by the borough that we would need to change their operating plan through public process to be able to use Big Salmon Property as a heliport.

In 2009 the Haines borough through legal challenge by the FAA, was forced to change the ordinance involving the regulation of helicopters in air space thus making the same ordinance that kept SEABA from using its property unlawful.

It was at this point that we concluded that heliski operators like SEABA did not need to change their operating plan to identify heliports, therefore in 2008 BSV had every right to utilize our property in this manner.

In the meantime SEABA has been working with Big Salmon to develop better winter access and infrastructure to accommodate this use. This is mainly was comprised of SEABA acquiring fuel tanks, a phone line, power, and a structure for existing snow-cat operation to properly utilize the property for existing commercial activities.

In 2011 the borough started to take steps towards recognizing the industry and its needs by forming a heliski task force and making changes to the borough code involving access point for the heli industry. We notified the borough attorney and the manager of our existing right to

utilize the our property was a use by right. The manager and the task force failed to agree on the existing legal rights for Big Salmon to use its property. The assembly adopted a revised tour permit that only grandfathered 3 properties with the right to land helicopters in association with heliskiing. BSV felt this was a stop gap measure and did not answer the questions surrounding the cloudy and misleading regulation of the heli skiing industry,

In an effort to “play ball” with the borough, SEABA submitted a CUP to utilize a neighboring piece of property it owns that had some infrastructure on it to support heli operations in the upper valley. The result of this process created a 3 to 3 tie or non-decision. It was appealed by SEABA and the borough assembly upheld the P. C. non decision.

The borough based its support for denying the CUP on the CCR structure of a distant,(over 1000 feet away) neighborhood that was attempting to rezone the area. Some residents did not want to allow helicopter landings. Within the year, failure of this rezoning attempt was apparent, as many of the presented facts and intent were false and fraudulent in nature. It was also expressed by members of the public that the group behind the rezoning attempt do not even follow the CCR’s of their own neighborhood to begin with, so why should they be capable of affecting other property owners rights..

SEABA’s attorneys wrote a brief that demonstrates that SEABA’s property and developer rights were infringed upon and that a governmental taking will occur if the borough does not allow this development. SEABA is willing to share this brief if anyone is interested in reading it.

Through SEABA’s CUP process and public testimony, the lack of physical evidence of actual noise disturbance, or factual, scientific, and tangible evidence that this activity affects the health, safety, and wellbeing of the greater good were simply not present. SEABA had identified studies and other municipal ordinances that were good examples of existing compliant uses. SEABA also established noise gradients for the area on a map that showed noise levels at certain locations. These gradients were of acceptable levels of very light commercial and compliant with the higher noise limits.

In actual tests done for Big Salmon Ventures, the predicted noise generation at specific locations came in lower than the examples produced by SEABA in its CUP application in 2011.

There are many ideals to this property that influenced Big Salmon Ventures purchase of this property. In consideration of the multi season activities listed in our business plan, we felt that it served the community at large as well as the business.

First, departure and approach routes to the commercial skiing areas, utilize existing flight paths that are close, within 1.5 miles of the property. These flight paths only cross over state lands, no private lands. These lands are identified in the 2025 Comprehensive Plan as multi use with an emphasis of resource extraction and resource development. This identifies that a heavy industrial uses, like mining and timber harvesting are allowed in area. Big Salmon’s property borders this and is identified as rural settlement.

This classification of lands under the flight path to and from skiing destinations is compatible. It also demonstrates that properties under these paths would not be hindered in terms of value, or disturbance based on proposed use.

In terms of economic development Big Salmon Ventures its members and associated investors, has intent to develop a multi million dollar Winter/Summer Recreation Village on its properties, that would increase property tax revenues, sales, and bed tax to the borough.

Big Salmon sold 6 properties to the east of the proposed lodge site and have short platted three more to allow for commercial retail growth in this area. Two of these properties were sold to an individual that expressed interest in building a commercial shop for heavy equipment to help develop land in the upper valley, and the second property was to be developed as ski in ski out cabins that could be rented to heliskiing and snow cat enthusiasts, as well as summer clientele.

Another property sold to a couple residing Anchorage 2009, was done with disclosure that Big Salmon Ventures along with SEABA intends to operate the Heli and snow cat tours from this property during the winter months. On closing part of the real-estate deal was an included ski trip.

Their existing structure on the property is in shell form with only power hook up from IPEC as the only utility by summer of 2015.

In the last few years the borough has worked towards rewriting the tour permit related to helicopter skiing and provided much new relevant content around this issue.

Since the adoption of the Conditional Use Legislation in regards to Heliports accompanying heliskiing permitting in title 5, Big Salmons Ventures interest in securing this property with the original intended use has increased. Other factors included are the addition of a third operator that could dramatically increase present congestion at existing heliports, increased traffic of current flight paths, and the purchase and development of 18 mile which is currently not an option for Heli operators. The heliports used by the heliskiing industry are in flux because of the lack of ownership by heliskiing operators.

By affirming that Big Salmon Ventures property rights to include a heliport would secure safe future operations for the heliski industry. It would also help engage development of a three season rural setting eco-lodge and a commercial Winter Village concept that other local and non local entrepreneurs can participate in. In a world market, which Haines heliskiing is very much a big part of, the market and demand of its clients ultimately rests with the operator providing door to heli accommodations, with weather day support activities on site. We are in the service industry as much as the adventure travel industry. So in order to compete globally, Big Salmon needs to exercise it right to fly guest from its properties.

The airport is an excellent spot as we use it for 70% of SEABA business, however, lodging and other services are not allowed at the Airport, and we have found through trial and error that even the purchase and development of the Fort Seward Lodge as a supportive ski lodge is lacking this key function. Heliskiing clients over the last 6 years that lodged at the Fort Seward have commented often that being closer to the snow cat, snow machining, Nordic, and also having a heliport at the facility would help propel Haines to the next level in heliskiing. They mention this because their other experiences heliskiing around the world with other heliskiing operators have provided these offerings, and they are often staged in a rural settlement.

A winter village at 26 mile is a fit for long term growth, and would diminish the desire to create other heliports on the road base in Haines by other non-industry based developers.. With acceptable noise levels generated during business hours for a short period of the year, we feel that this is a good solution to a long term problem. By affirming the use for Big Salmon the borough can effectively plan for the next 25 years based on this location.

In the 2025 Comprehensive plan it states:

Capitalize on Haines' existing reputation and 'brand' as a recreation destination, and "Adventure Capital of Alaska" by expanding related businesses, jobs and commerce.

*1. Continue to support a diversity of Haines Borough marketing efforts that promote and celebrate these qualities, including re-initiation of the "Move to Haines" campaign and targeted marketing to cruise ships, about Haines festivals, and **winter recreation**.*

3. Develop a winter recreation marketing and outreach program.

4. Provide certainty for both businesses and residents by preparing a heli-ski management plan that addresses safety, neighborhood quality, heliports, routes and areas of use, monitoring, quality experience etc. (September 2012 page 94 Objective 3D)

The Big Salmon Ventures Plan along with the heliski industry is attempting to reach some of these goals identified in the plan on its own. We feel that there is sustainability and compromise in the plan. 95% (proponents) of the residents of Haines get to keep their quality of lifestyle, and the other 5%(opponents) have to share this with the outside world.

If Big Salmon cannot secure this use, then much of Big Salmons investment into property and infrastructure would be negligible. It would also impede the growth of heliski operators and their ability to operate in a efficient and ultimately the safest manner. A affirmation of BIG Salmon CUP would also reduce flight times and overall aircraft noise as a whole by reducing time spent flying over borough and state lands getting to commercial skiing areas. With this comes a more viable operation, with reduced costs creating a better industry.

Big Salmon proposes the following criteria for conditional use for heliskiing support:

1. Hours of operation to follow FAA flight rules from Feb1- May 3rd for heliski operations. This activity would be allowed indefinitely unless conditions of permit or violated and the permit is terminated.
2. Dates of Operation: February 1st thru May 3rd
3. Fuel storage will be done in accordance with D.E.C. standards with a fuel spill containment program in place before operations begin:
4. Allowance of emergency use for state and federal response, medical, firefighting.
5. Specific and identified GPS flight path that will create the least amount of noise and impact to nearby GU residents. Flight paths will not be conducted over any residences and take place over state lands.

Criteria to be met for consideration:

The following are line item responses to code considerations under 18.50.040:

1. The heliport site as explained and can be viewed on the map entitled Big Salmon heliport, will show departure and approach to the west of the property. All property to the west of 3-CLR-35-0200 belongs to the State of Alaska, including the Haines State Forest and University of Alaska State Lands.

A small dividing esker or ridge formed by glaciation and fluvial processes helps buffer residents to the east of this property. This ridge is approximately 35-50 feet in height and would provide a buffer to initial startup and liftoff. (per written example below)

On December 4th 2013 decibel testing for the area proposed for Heli landings was conducted. Tests were taken approximately at approx. 1100 feet and 1500 feet from the Chilkat Lake Rd. nearest the year round residence in the area. The following sound references are generated from a report from Daniel Gonce Vice-Chair of the Planning Commission.

“Scott Sundberg was contacted via VHF radio, who was aboard the helicopter, to begin the

approach. The flight path of the aircraft on approach was perpendicular to the Chilkat Lake

Landing Road, and the helicopter was flying an Easterly heading on final approach. At all times the closest the helicopter approached the road was the landing site itself. I was told that the plans would be for the aircraft to actually touchdown in attitude parallel to the road, to allow for an in place rotation of 90 degrees for a takeoff run to the West from the landing site. The site of the 1st landing is a new landing pad location for Big Salmon. Nick stated

that they had spent some of the summer “logging” the new site and approach zone. The new site is approximately 90-100 yards to the West of the previously proposed landing site. On final approach I noticed that the sound level decreased noticeably before the aircraft touched down, which is consistent with dropping down to the lower landing zone, below the rim where the previously proposed landing zone was located. Additionally the sound level dropped off quickly once on the ground which was affirmed via radio from Scott. Readings were observed while the aircraft was on the ground at an idle state

simulating a “hot refueling” for 3 or 4 minutes, then the aircraft departed back the same flight path as it had arrived. According to Nick, a typical “hot” refueling operation lasts 8 – 10 minutes, before the aircraft is reloaded for the next departure.

After the departure, the aircraft returned for a second approach to the older or previously proposed landing zone. This location is higher and closer to the Chilkat Lake Road. He also stated that because of a large tree near the landing zone the final approach is higher than an approach to the new, lower site. I did not notice the drop off in sound level immediately

before touchdown as with the 1st landing. The aircraft again simulated a “hot refueling” operation, and then departed, again to the West, the same route as the approach.

In both cases, the aircraft was at a lower elevation than what I was expecting, and the flight

paths where the aircraft was observed was at treetop height. The point of first observation

of the aircraft Nick had to point it out to me as it was not where I expected it to be. If I was

traveling on Chilkat Lake Road in a vehicle and did not know there was a helicopter flying at that location, I most likely would not have had a clue of its presence.

Shortly after the second departure, Erica Merklin came out of her residence and asked “What is going on?” She stated that she was sitting in her residence, listening to the radio, and heard the aircraft over the radio, and that it had caused her house to “shake”. We had a

short discussion about the purpose of the visit to gather some readings, and we briefly explained some of the readings that we had seen from the meter, and stated that the sound

level of the aircraft at its loudest was quieter than the verbal conversation that we were having.

After the discussion with Erica we departed and traveled to the site of the SEABA shop, and

landing sites. We met Andy Hedden on the Chilkat Lake Road and he followed us to the landing sites. There was discussion about the immediately neighboring property owners, the new landing site, and proximity to existing designated flight paths in the area.

The helicopter used, as stated by Nick was operated by Coastal Helicopters, and is a model

Eurocopter B-2 A-Star, which is the same model that SEABA operates.

The sound level meter: Digital Sound Level Meter by EXTECH Instruments, model 407727.

The documentation indicated accuracy of ± 2 dB at 94dB. The settings as noted were: Auto-Range mode; Fast time weight averaging; "A" weighted sound scale. The minimum scale of the meter is 40dB. Any reading below, displays: "LO".

Sound Observations:

While in the truck traveling along Chilkat Lake road on an icy surface:

81.1dB, 83.3dB, 83.6dB

Ericka Merklin's friendly dog barking at us from the driveway when we first stepped out of the truck: **62-63dB**.

Aircraft on approach to "new" LZ: starting at **LO** (dog done barking at us after coming to check us out) increasing steadily through 42dB to a peak of **62.1dB** before dropping quickly to a touchdown.

Aircraft "hot refueling" at the "new" LZ: **46-47dB**

Aircraft departing: peak of **62.3dB**, before tapering steadily back down to a "LO" reading.

Aircraft on approach to "old" LZ: starting at **LO** increasing steadily through 42dB to a peak of **64.6 dB** at near touchdown.

Aircraft "hot refueling" at the "old" LZ: **51.5dB**

Aircraft departing from "old" LZ: peak of **68.5dB**, before tapering steadily back down to a "LO" reading.

Verbal outside conversation with Erica **70-75dB.**"

On a decibel scale 60 is considered equal to conversational speech and 70 is an average radio or street noise.

The esker Ridge and the change in elevation are capable of reducing the majority of noise exposure to under 60 decibels, which is residential in nature. Idle or fueling was recorded at the high 40 low 50 dB's. This level is 90% of the noise generated over time, the take off and landing/approach comprise the other 10%.

I think this is significantly recognized in the study as why most of the noise after Lmax does not reach the outlying testing sites, like the neighboring estate and Chilkat lake road.

Alaskan communities like Anchorage, have noise ordinances established for residential and commercial range between 60 and 70 decibels during the hours of 7:00 am and

10:00pm. This is measured by the mean at the crossover of zoning, i.e property line. This would be DNL levels averaged over a week.

Neither of these levels are considered hazardous. *The Municipal Code of Anchorage, 15.70 Noise Control legislation dictates that noises levels exceeding 90 decibels for more than 24 hours is hazardous. OSHA Also has similar references in consideration of the work place, where exposure of 90 decibels for more than 1.5 hours without hearing protection is hazardous.*

In Feb of 2014, the borough assembly reversed the P n Z decision to not give a permit to BSV to do a noise study by a third party to get objective noise information during the actual operations from the proposed heliport site. On Mach 9-15 2015 this study was completed and released in mid June of 2015.

In the study titled, "Noise Measurement Survey Spring 2015 Haines, Ak"(Prepared by Bridget International, Airports Division, Newport , CA. Prepared By Cindy Gibbs, for Mead and Hunt, Tulsa OK. http://www.hainesalaska.gov/sites/default/files/fileattachments/administration/haines_noise_report_june_2015_v2.pdf **detailed** information and scientific data collected determined that initial recordings by Daniel Gonce in 2013 were very simliar to the findings at the same location.

In fact several things of the study discovered pertains directly to this condition.

The study was done through empirical methods, it was meant to be objective and without the subjective content that has made this CUP so difficult to interpret.

I think the last paragraph of the study below sums up the considerations of this study:

"As stated above, the three sites outside the helipad ranged from 30-51 DNL. Typical noise measurements at an average "wooded residential" land use is generally around 51 DNL. This means that the measured average noise level at the three sites closely matches, or is quieter than what would be expected in wooded residential or quieter land use types. However, it is important to note that these comparisons do not link to any specific noise standard or regulation, but rather give a generalized comparison between what is typical in similar land uses and the results measured during this Study".

Also, after reading through it a couple of times, it dawned on me that the noise levels that are near or close to light commercial noise determined by the study only could affect 5% of residences out in the 26 mile area. In effect information stating otherwise was not present. Different contexts present different considerations.

Context number 1:

This area is zoned generally allowed use, which encompasses about every imaginable use from private residential, to commercial and even heavy industrial. The report say that during this testing and information gathering period that the dnl levels stayed very close to what one might experience in a wooded residential area. This is stated as 30-51 DNL.

In this context the DNL levels could be much higher and still be compatible with all the allowed land uses in this area.

In the chart that they use to compare noise in figure 2-2 they group these same decibel levels, 30-51 as quiet.

Context number 2:

The Lmax time duration of the events is limited to when the heli is going to take off and land. In the appendixes you can look at each event and determined that the average amount of noise generated at the location averaged around 4 minutes and 45 seconds, the LMAX averages total 85 seconds per occurrence. 75% of the remaining noise is 90% lower.

If you had a rock crusher or a sawmill running at this site,(both do not need a permit under current zoning) which at the industrial scale both generate peak noise over 110 decibels, with an average length of time for peak noise could be 6 plus hours a day.

A helicopter landing and taking of 20 times a day would have a LMax duration of 1700 seconds or 30 minutes over the course of the working day. This would account for only 10 percent of the industrial noise generated by a permitted activity like a rock crusher or sawmill.

Comparatively one could conclude that the allowed uses are much more intrusive, probably could create a level of undo noise, and generate a more continuous LMAX and SEL levels. So why is this activity supposedly given so much attention? Why are we even discussing this issue.

Context 3:

In everyday life through the borough, along highways, and in the commercial and residential areas of the borough, sound is generated from 7 in the morning to 11 at night in some circumstances.

Turner Construction operates a CUP gravel pit at the top of 4th street next to residences. Large equipment cut into the hillslopes above the residences, load trucks with gravel, and then proceed down the hill through the residential area to deliver their product to customers.

In terms of noise there are probably similar if not slightly higher noise levels involved with this activity. It also would qualify that unlike the 4th street gravel pit, helicopters noise moves away from all residences over public lands identified near the test site,into and over lands allocated as resource development and multi purpose recreation.This includes recreation machinery that delivers high levels of noise. This happens both in personal recreation, as well as commercial operations. Noise is part of everyday life in economy and in enjoyment. For true quiet one must retreat to wilderness, and even then a Commercial jet can disturb the solace.

This noise study identifies that while there is noise, it is no greater than what has been and is accepted throughout communities through the US, including ours, especially noting the examples like 4th street.These occur and can operate in commercial and more importantly in line with residential areas.

Without a doubt I feel that this study demonstrates that this is a compatible use for this area, giving the current zoning, and the relatively infrequent amount of noise that will contribute to the area.

Finally the other comment is that noise is apart of any economy, and this zoning,G.U. within the borough was specifically left open so private landholders had options to do what they want. Under consolidation this was requested and lobbied for during consolidation by the people who owned property outside of the town site.

When the borough assembly added the requirement to get a CUP from the Planning and Zoning, under title 5, if a person wanted to develop a heliport, it errored by not allowing the exclusion of Generally allowed zoning. This study shows that if the proposed development of a heliport was in a residential or commercially zoned area, then the validity of getting a CUP has merit.

I believe an easy fix for the borough is to remove this condition from ordinance from title 5, and put into title 18 under the appropriate zoning.

In terms of safe operation at the site the area has been cleared of excess trees and other hazards that could be a safety risk to the helicopter and its passengers.

2. We have sold some adjoining property in recent years with disclosure that a commercial ski business would be operating from the proposed area. Sale prices have averaged above current property values in the area. Purchasers in some sales showed interest that this proposed use increased their desire to build a commercial entity. The property bordering the heliport site has been for sale by the owner, and people wanting to be near an activity and business like our have made offers to the owners. There is a direct connect between the benefit of a multifaceted business and the increase in property values in the immediate area. In recent months full price offers have been made to these individuals, and they have not sold. I would suspect this is an attempt to make it seem like property sales are down because of this proposed use. However, there are people and businesses that would like to be next to this activity, so that they too can create business.
3. The size and scale of the use would be similar to 18 mile heliport and 33 mile heliport. This means that on average one helicopter would primarily be using the area, and a second could be added at times. This would mean an average of 10-16 take offs and landings could be conducted per day. This would include 4-5 refueling trips per day.

We are confident that access for EMS services would not be impaired and that access exists in the form of easements to and from the property.

4. **The 2010 comprehensive plan (old) had determined that there are no specific areas identified in the GU that this use does not conform with. We purchased said property while this was the existing plan with the borough.** The surrounding uses range from rural residents to light industrial including saw mills, heavy equipment operators, gravel sifting, and salvage yards. The updated 2025 comp plan just recognizes the area as Rural Settlement.

However, in the updated Comprehensive plan, (2012) it mentions, " To promote efficient land use, good neighbors, and protect homeowner investments and lifestyles, require buffers between residential and non-residential land uses, between differing types/densities of residential development, or when home occupations or light (approved) commercial uses are adjacent. Depending on the situation, common measures could be landscaping, retained or additional vegetation, setbacks, fences, sound barriers, restriction on hours of operation of noise-generating equipment or activity," We feel that we are mitigating these slight noise interruptions at residential noise thresholds of 69dB and below by utilizing existing vegetation, landscaping, and

hours of operation. We would also point out that 95% of opposing individuals supporting the failed rezoning petition of 2012 live beyond the 65 dB threshold to the east and are separated from our properties by a multi-use road that delivers much higher Dnl ratings year round..

5. **The use proposed is deemed adequate in Big Salmon opinion and is not harmful to the public safety, health and welfare.** Although the borough assembly upheld a non decision (3-3) from the planning commission in regards to a similar denial of a CUP in 2012, Big Salmon recognizes that this was based on non scientific and objective reasoning, or lack of supportable evidence on behalf of the submitting party. SEABA in conjunction with Big Salmon Ventures have prepared a better fact based application at this time.

It is to be understood that the intended use in the GU is very broad and that there are acceptable levels of noise during business hours. It is also recognizes that the land designation of the properties as G.U. was an designation entered based on consolidation testimony, leaving it open to a change in zoning that was to come by demand.

Landowners West of the Chilkat Lake road were against the zoning petition, and favored open regulation if not use by right.(Verbally confirmed by Chairman Goldberg in PC meeting regarding failed rural residential zoning attempt spring of 2013)

It will be argued that other residents also have profound investments also. However it should be recognized that when “all” investments in property were made in the area, they were done with disclosure. All land that was purchased and developed under general use zoning or with CCR’s of the University of Alaska properties in Eagle Vista.

However, we feel that based on the low duration of activity and the mild decibel ratings, impacts are at a minimum and this is a sustainable model.

On page 151 of the Comprehensive plan it states, “The Haines Borough also recognizes the rights of private land owners to use their land without Undue restriction.”

6. There is no significant concern regarding ground or surface water contamination, and that there is no scientific proof that fish will stop spawning in surrounding creeks or wildlife will stop utilizing historic corridors in the immediate area. At this point in time no material evidence or scientific study has been brought forth that conclusive demonstrates otherwise.
7. We have included in our conditional use stipulations that any fuel stored on site will be to standards set by the Department of Environmental Conservation and that there will be a Fuel spills response plan in place during operations to adhere to these standards.
8. We have submitted letters of support in from some of the adjoining property owners in 2011,2012, 2014 and that all other comments must be weighed by the

planning commission to determine their full weight in considering this conditional use. I would request all letters to the borough date in support be included in this application.

We appreciate your consideration on this matter and if we can answer any questions you might have prior to the meeting representatives of Big Salmon Ventures can be reached at 907 314 0445 or 766 2009

Thank you

Scott Sundberg

Owner/ Member of Big Salmon Ventures

Nicholas Trimble

Owner /Member of Big Salmon Ventures

Addendum to Criteria

1.

See Final draft of Haines Helicopter noise study:

http://www.hainesalaska.gov/sites/default/files/fileattachments/tourism/haines_noise_report_revised_draft_14aug_2015_v3_2.pdf

Also see table 5-1

It states that even at 20 landings, the closest building or potential residence site 2, still falls under residential DNL noise levels at 62, the EPA and the FAA recognize. For all other sites that were tested 3 and 4, DNL levels remained at 41 which referencing figure 2-4, this level is similar noise level to rural residential, and agricultural crop land. However it is 10 decibels below levels associated with wooded residential.

At the end of the day, no matter which way you spin the measurements, there is no way, that this activity at suggested uses of 20 landings per day create undue noise. I am sure an appellant court will agree with this assessment.

2. The ben And Gretchen Williams property located between site 2 and 4, was sold to a Juneau resident, who bought the property knowing that a heliport, and snowcat operations were nearby. He paid full value for the acreage and unfinished cabin in order to be in this particular area. The fact that this area will become commercialized to some extent with soft industry that is associated with recreation is encouraging people to buy. In fact the Corona residence, site 2, would sell near asking value, if the BSV seasonal heliport were to get approval.



Haines Chamber of Commerce

"Working Together to Build Business & Community"

219 Main Street, Suite 14
PO Box 1449 · Haines, AK 99827
907-766-2202 · 907-766-2271 (Fax)
chamber@haineschamber.org · www.haineschamber.org

October 1, 2015

Manager
Haines Borough Assembly
PO Box 1229
Haines, AK 99827

Re: Comments on the Application for CUP to operate a heliport
SEABA

The Greater Haines Chamber of Commerce encourages the Borough's support of the business plan advanced by Southeast Alaska Back Country Adventures to develop a winter recreation lodge and associated heliport at Twenty-seven mile, Haines Highway.

The Chamber is of the opinion that the noise study to determine whether helicopter noise levels exceed reasonable thresholds was fairly conducted and interpreted. Whether noise levels exceed the tolerance of any particular neighborhood should not be debatable in considering economic development that impacts the larger community. Locating a winter recreational lodge and associated heliport at 27 Mile has the potential to generate revenue and employment that will result in additional tax revenue to the community. The Chamber supports the endeavor and encourages the Borough to grant the conditional use permit.

Sincerely,

Kyle Gray, President
Haines Chamber of Commerce

RECEIVED Haines Borough

OCT 16 2015

Clerk's Office



HAINES BOROUGH, ALASKA
P.O. BOX 1209
HAINES, AK 99827
(907) 766-2231 FAX (907) 766-2716

November 2, 2015

«PRIMARYOWNER»
«ADDRESS»
«CITY», «STATE» «ZIPCODE»

Re: Heliport Conditional Use Permit Public Hearing
Lot 10, Sundberg Subdivision II

Dear Land Owner,

Haines Borough records show that you own property within 200 feet of the above-listed property. The property owner Sundberg has requested for the Planning Commission to approve a conditional use permit to allow the development of a heliport. The Haines Borough Planning Commission will hold a public hearing on the matter at the next regular Planning Commission meeting. The meeting will be held at 6:30 p.m. at the Haines Borough Assembly Chambers on Thursday November 12. As an owner of property within 200 feet of the above-listed property you are being notified that you are invited to attend and comment at the meeting. If you have any questions on the matter please contact the Borough.

Sincerely,

Tracy Cui
Planning and Zoning Technician III
Phone: (907)766-2231 Ext 23
Fax: (907) 766-2716
xcui@haines.ak.us

PRIMARYOWNER	ADDRESS	CITY	STATE	ZIPCODE
ROBERT GOODWIN	1310 NW STATE AVE., PMB97	CHEHALIS	WA	98532
JUAN CORONA	3475 S. OCEAN BLVD., UNIT 408	PALM BEACH	FL	33480
C/O SCOTT SUNDBERG	BOX 1368	HAINES	AK	99827
KEITH P. KAISER	BOX 1406	HAINES	AK	99827
C/O SCOTT SUNDBERG	BOX 1426	HAINES	AK	99827
BENJAMIN WILLIAMS	BOX 240733	DOUGLAS	AK	99824
CHRISTOPHER S. BROOKS	BOX 558	HAINES	AK	99827
CHARLES STRONG	HC 60 BOX 2617	HAINES	AK	99827
COVENANT LIFE	HC 60, BOX 2663	HAINES	AK	99827
UNIVERSITY OF ALASKA	1815 BRAGAW STREET, SUITE 101	ANCHORAGE	AK	99508

Chapter 18.50 CONDITIONAL USE

HBC 18.50.040 Decision.

The commission shall hold a public hearing on the conditional use permit application. The commission may adopt the manager's recommendation on each requirement unless it finds, by a preponderance of the evidence, that the manager's recommendation was in error and states its reasoning for such finding with particularity. In addition, for good cause, the commission may alter the conditions on approval or requirements for guarantees recommended by the manager.

A. Before a conditional use permit is approved, the commission must find that each of the following requirements is met:

1. The use is so located on the site as to avoid undue noise and other nuisances and dangers;
2. The development of the use is such that the value of the adjoining property will not be significantly impaired;
3. The size and scale of the use is such that existing public services and facilities are adequate to serve the proposed use;
4. The specific development scheme of the use is consistent and in harmony with the comprehensive plan and surrounding land uses;
5. The granting of the conditional use will not be harmful to the public safety, health or welfare;
6. The use will not significantly cause erosion, ground or surface water contamination or significant adverse alteration of fish habitat on any parcel adjacent to state-identified anadromous streams;
7. The use will comply with all required conditions and specifications if located where proposed and developed, and operated according to the plan as submitted and approved;
8. Comments received from property owners impacted by the proposed development have been considered and given their due weight.

If the commission finds that the development implements all relevant requirements of this title, it shall issue a conditional use permit and the conditions and requirements shall be part of the approved permit. If the development does not implement all relevant requirements, or the commission otherwise determines the development is not in compliance with this title, the commission shall deny the permit and note with particularity its reasons for the decision.

B. The commission may alter the manager's proposed permit conditions, impose its own, or both. Conditions may include one or more of the following:

1. **Development Schedule.** The conditions may place a reasonable time limit on construction activity associated with the development, or any portion thereof, to minimize construction-related disruption to traffic and neighbors, to ensure that lots are not sold prior to substantial completion of required public improvements, or to implement other requirements.
2. **Use.** The conditions may restrict the use of the development to specific uses indicated in the approval.
3. **Owner's Association.** The conditions may require that if a developer, homeowner or merchant association is necessary or desirable to hold or maintain common property, that it be created prior to occupancy.
4. **Dedications.** The conditions may require conveyances of title, licenses, easements or other property interests to the public, to public utilities, or to the homeowners association. The conditions may require construction of public utilities or improvements to public standards and then dedication of public facilities to serve the development and the public.
5. **Construction Guarantees.** The conditions may require the posting of a bond or other surety or collateral (which may provide for partial releases) to ensure satisfactory completion of all improvements required by the commission.
6. **Commitment Letter.** The conditions may require a letter from a utility company or public agency legally committing it to serve the development if such service is required by the commission.
7. **Covenants.** The conditions may require the recording of covenants or other instruments satisfactory to the borough as necessary to ensure permit compliance by future owners or occupants.
8. **Design.** The conditions may require the adoption of design standards specific to the use and site.



Haines Borough
**BOROUGH ASSEMBLY
ACTION REQUEST**

DATE: Feb 13, 2014

TO: Borough Assembly

FROM: The Haines Planning Commission

RE: Big Salmon Ventures LLC Conditional Use Permit for Heliport

PLANNING COMMISSION ACTION:

Motion: Hedden moved to “approve the conditional use permit for a period of one year with the conditions that are stated in Big Salmon Ventures’ application”, Turner seconded it.

Primary Amendment: Gonce moved to “only allow one company to use the site at a time, and all landings shall be no closer than 1,100’ to the centerline of Chilkat Lake Road”, Turner seconded it. The primary amendment passed 6-1 with Goldberg opposed.

The main motion failed with Goldberg, Heinmiller, Lende, and Venables opposed.

Motion: Venables moved to “For 2014, the Planning Commission recommends the Assembly authorize the Borough Manager to issue a temporary conditional use permit that allows for a limited, pre-approved, borough-monitored number of random landings, incorporating conditions offered by the Big Salmon Ventures, only allowing for one company to use the site at a time, with all landings to be at least 1,100’ from the centerline of Chilkat Lake Road to gauge actual impacts, between 8:30 a.m. and 4:30 p.m. with continued noise measurement and monitoring”, Gonce seconded it. The motion passed 6-1 with Goldberg opposed.

RATIONALE:

Commission responsibilities, public testimony, the Borough Interim Manager’s recommendation letter were topics discussed. There are eight criteria to be considered in deciding whether or not to grant a conditional use permit. It was pointed out that the Planning Commission’s job is to look into the code, and to find out if each of the criteria is met.

Goldberg does not think this “one-year trial” will work well. If the Planning Commission approves a one-year conditional use permit, the developer probably will invest in

infrastructure. The Planning Commission will have to go back to deal with this again after one year if the neighbors complain about the noise. Also, Criteria 1 reads "the use is so located on the site as to avoid undue noise and other nuisances and dangers." A few homeowners have given their comments that they heard helicopters from inside their homes, so obviously the noise is subjective. He thinks Criteria 1 has not been met.

Gonce went to the proposed site, and did the decibel testing with Nick Trimble. As far as his observations, the volume created with the helicopter was very low. The readings were lower than he expected. The last time this proposal came to the Planning Commission he voted against it. One of the main reasons is the noise. However, after his trip to the site, he believes the new proposed site will greatly mitigate the sound to the neighbors.

Venables would like to see a temporary permit to be monitored by the Borough. The purpose of the landings will be to assess the actual impacts of noise on nearby residences. He said it is premature to grant a long-term permit at this time.

PLANNING COMMISSION REQUEST:

To recommend the Assembly authorize the Borough Manager to allow a number of helicopter landings at the proposed site during the 2014 heli-ski season. The number of landings will be determined by the Manager. The purpose of the landings will be to assess the impacts of noise on nearby residences. This will help to determine if the proposed heliport can meet the requirements of Criteria 1 in Borough Code. All the conditions stated in Big Salmon Ventures' application shall be adhered to. In addition, this temporary conditional use permit shall only apply to Big Salmon Ventures, and the landing site shall be no closer to the centerline of Chilkat Lake Road than 1100'.

SUBMITTED BY



(signature)

Daniel Gonce
Planning Commission Vice - Chair

**Notice Of Appeal From Haines Borough Planning Commission Denying Big Salmon Ventures (BSV)
Conditional Use Permit**

RECEIVED Haines Borough

FEB 18 2014

Clerk's Office

Dear Mrs. Cozzi:

I am writing on behalf of our client, Big Salmon Ventures LLC, ("BSV") in response to the denial of its request for a Conditional Use Permit to develop a heliport on its property located at Lot 10 of the Sundberg Subdivision (the "Property"). In this connection, BSV would like to assert its request to appeal the Haines Borough Planning Commission's February 13th 2014 decision to deny the Conditional Use Permit Application submitted by BSV.

First, BSV respectfully asserts that the Planning Commission erred in failing to approve issuance of the Conditional Use Permit inasmuch as Big Salmon Ventures has met all of the conditional use permit requirements as enumerated in the Haines Borough Code ("HBC") Section 18.50.040.

Secondly, BSV asserts that the findings of the planning commission, especially in regards to safety welfare, failed to recognize the decibel testing and real life DNL noise levels as it relates specifically to the defined nature of the area and national noise standards for quality of life in the United States. Decibel levels after testing were much lower on average than the speculation that SEABA proposed in the CUP application that SEABA proposed in 2011.

In the Assemblies findings for the appeal of SEABA heliport in 2011 they cited decibel levels that were suggested but not confirmed around 68 on take off, while decibel testing most recently found that exposure to take off and landing are limited to less than two minutes per occurrence and that the actual decibel level peaked at 62dB.

More over other evidence entered into the record by BSV shows that the national acceptance of noise based on the DNL standard or noise testing show that residential areas experiencing decibel readings of 65 dB and lower with an average of 50dB DNL are acceptable and the standard for regulating noise for health safety, and welfare of residential neighborhoods.

BSV contends that this is, "he said, she said" issue when considering if this activity meets the criteria of safety and welfare, for residences and property owners in the area. Noise level testing and the acceptance that the zoning is not residential but rural settlement, and that property owners have rights to make a living off of their property should be enough to conclude that a one year conditional use, with contracted testing to national standards should show that this proposed activity with its conditions set forth by Big Salmon Ventures will not create a health, safety, or welfare condition that is unsurmountable and easily mitigated.

In the managers' findings below:

"5. The granting of the conditional use will not be harmful to the public safety, health or welfare.

This requirement may not have been met. The Borough Comprehensive Plan reads: "In 2011 one business proposed development of a heliport on its land on the Chilkat Lake Road, which raised concerns about neighborhood character, noise and safety. The planning commission and assembly denied the permit based on health, safety and welfare issues..." The applicant has attempted with this new application to mitigate many of the issues that were brought up previously. This makes it a bit difficult to say with certainty that this will or will not be harmful to public safety, health, or welfare."

The borough managers has doubts as to if this has been met. The manager contends that there needs to be more factual and objectionable discovery to confirm if BSV has mitigated the previous position by the borough assembly in 2011.

Commissioner Danny Gonce who was not in favor of the SEABA CUP application 2011 testified at the Feb 13th 2014 planning commission meeting that after he directed the sound decibel testing for BSV in December of 2013 his perspective and perception of the activity were changed. He felt that this was a permissible and acceptable use of the property based his experience. He also stated that he supported the Conditional use as long as it stayed 1100 feet from the center line of the Chilkat Lake Road.

Third, the manager findings documented that this use has speculative and subjective attributes when weighing them against code outlined conditions for a CUP, and that while it might be that not all of the 8 points were objectively met, the manager suggested giving BSV a one year CUP to help identify speculative and subjective impacts.

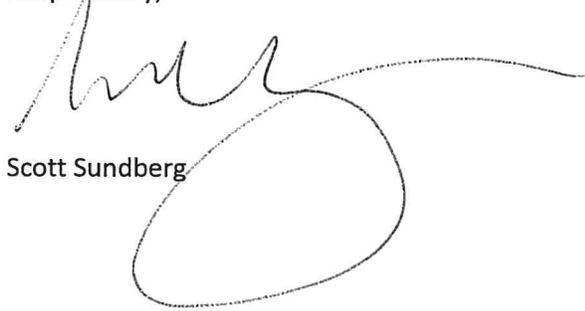
Fourth, the planning commission chair Rob Goldberg egregiously recognized opponents over proponents and interjected several comments that were not part of the record, including notes on waking babies over a half mile from conducted decibel test and disturbed residents that were not even aware the test occurred until told.

Chairmen Heinmiller also interjected through his testimony facts that were incorrect regarding the phased development of the winter village, and in our opinion was very biased in trying to develop subjective reason and rhetoric to not support the heliport opposition. We feel that the level of professionalism from these two planning commissioners was not acceptable and that the community at large should be concerned about their motives.

Finally, while the Winter Village and Eco lodge business plan for the surrounding properties owned by BSV/ SEABA in the 26 mile area does not need a conditional use permit, the development of these facilities and long stability of the Haines economy, its security and economic "WELFARE" depend on the conditional long term use of this property as a winter heliport.

SEABA was told that the borough would look into developing public heliport after SEABA's denial of the use of it property in January of 2011. After inquisition, fact finding, and committee discussions it was determined that not only was the industry not interested by the suggested heliport at the end of Chilkat Lake Rd, but the borough recognized that it did not have land in its possession that reflects the needs of the industry or in this particular case BSV/SEABA. This specifically relates to developing a stable long term business that would add greatly to the quality of life for majority and supportive Haines residents. We feel that the greater demand for a healthy economy that builds on recreation and ecotourism outweighs subjective and speculative determinations that our proposed heliport would create undo noise, safety and welfare issues to the surrounding areas.

Respectively,

A handwritten signature in black ink, appearing to read 'Scott Sundberg', with a large, sweeping flourish extending to the right and a large loop at the bottom.

Scott Sundberg



HAINES BOROUGH, ALASKA
P.O. BOX 1209, HAINES, ALASKA 99827
Administration 907.766.2231 ♦ (fax) 907.766.2716
Tourism 907.766.2234 ♦ (fax) 907.766.3155
Police Dept. 907.766.2121 ♦ (fax) 907.766.2128
Fire Dept. 907.766.2115 ♦ (fax) 907.766.3373

April 11, 2014

VIA CERTIFIED MAIL AND EMAIL

Big Salmon Ventures
Attn: Scott Sundberg, Representative
P.O. Box 1368
Haines, Alaska 99827
sunny@skiseaba.com

Re: NOTICE OF ASSEMBLY ACTION ON APPEAL

Dear Mr. Sundberg:

On March 11th, the borough assembly heard your appeal of the planning commission's February 13th, 2014 denial of your conditional use permit. Following deliberations, the assembly granted the conditional use permit with conditions. This is a notice of the assembly's adoption of the attached Findings of Fact and Conclusion of Law on April 8th, 2014.

The assembly's decision may be appealed to Alaska Superior Court. The deadline for filing an appeal to Superior Court is May 11th, 2014 (30 days from the date of the notice of assembly action).

Sincerely,

Julie Cozzi, MMC
Borough Clerk

Enc: Findings of Fact and Conclusions of Law

cc: Borough Manager, Borough Attorney

IN THE MATTER OF
APPEAL FROM THE DECISION OF THE HAINES BOROUGH PLANNING
COMMISSION DENIAL OF A TEMPORARY CONDITIONAL USE PERMIT
APPLICATION FOR DEVELOPMENT OF A HELIPORT ON LOT 10 SUNDBERG
SUBDIVISION

Appellant: Big Salmon Ventures LLC
Appellant's Representative: Scott Sundberg

Appellee: Haines Borough Planning Commission
Appellee's Representative: Julie Cozzi, Interim City Manager

Having sat to hear an appeal pursuant to Section 18.30.060 of the Haines Borough Code and held a properly noticed public hearing on the above-referenced appeal on March 11, 2014, considered all of the evidence in the record as identified in this decision and all of the additional information provided at the appeal hearing and having voted to reverse the decision of the Planning Commission, and order the Commission to issue a Conditional Use Permit with conditions the Borough Assembly of the Haines Borough adopts the following:

FINDINGS OF FACT AND CONCLUSIONS OF LAW

FINDINGS OF FACT

1. The property involved in this appeal is Lot 10 Sundberg Subdivision located at Mile 26 Chilkat Lake Road within the boundaries of the Haines Borough ("the Property").
2. The owner of the Property is Big Salmon Ventures, LLC.
3. The Property is located in a land use district designated on the Haines Borough Zoning Map as Amended as a General Use district.
4. The Property is about 20.79 acres.
5. There is no evidence in the record that the Property is adjacent to a state-identified anadromous stream.
6. On or about January 27, 2014, Big Salmon Ventures LLC submitted an application for a conditional use permit to allow development of a commercial heliport on the Property ("the Application").
7. On January 29, 2014 the Application was accepted as complete.

8. Material in the record shows in some conditions the decibel level associated with use of the portion of the Property proposed for use as a helipad to be measured at 62 decibels at one or more points at property approximately 1100 to 1600 feet from the helipad site.

9. On February 13, 2014 the Planning Commission held a public hearing on the Application. The Commission vote on a motion to approve a temporary one year permit with conditions that are stated in the permit application was 3 yes and 4 no so the CUP application with the proposed one year permit period was denied.

10. The Commission then passed by a vote of 6-1 a recommendation that the Assembly authorize the Borough Manager to issue a temporary conditional use permit that allowed for a limited pre-approved Borough monitored number of landings all of which were to be at least 1,100 feet from the centerline of Chilkat Lake Road between the hours of 8:30 and 4:30 to gage impacts with continued noise measurement and monitoring.

11. The Planning Commission did not prepare any written findings of fact. The Assembly has reviewed the recording of the Commission deliberations at the meeting and has determined that the main factor leading to denial of the application was noise associated with the proposed use as referenced in objections to the proposed use received from members of the public.

12. A timely appeal from the decision of the Planning Commission was filed by Big Salmon Ventures on February 18, 2014.

CONCLUSIONS OF LAW

1. The following items, in addition to those presented by Appellant and Appellee at the appeal hearing are considered part of the record of this proceeding:

Minutes and recording of 02/13 Planning Commission Meeting
Pages 42-137 of the Assembly Packet for the March 11, 2014
Assembly meeting
3/8/2014 Basford e-mail
3/8/2014 Jans e-mail

2. As the party challenging the decision of the Commission, Big Salmon Ventures had the burden of proof in establishing the permit was wrongfully denied. HBC 18.30.060(B).

3. The General Use Zoning District, as defined in HBC 18.70.090(D), is intended to allow as broad a range of land uses as possible. Any use is allowed but a conditional use permit is required for landfills, commercial power plants, cemeteries, heliports and for a hazardous

materials storage facility. HBC 18.70.030(D)(5).

4. Any property within the General Use District proposed for use as a commercial heliport in support of commercial ski tours requires a conditional use permit. HBC 18.70.030(D)(5), HBC 5.20.080(F)(14)(d).

5. The conditional use permit process is intended to evaluate proposed uses and issues of community-wide importance and subject those proposed uses to a broader public process and higher standards than approvals by the manager. The conditional use process is intended to afford the commission and the community the flexibility necessary to make development approvals that are appropriate to specific sites, uses, or designs provided certain conditions are met. HBC 18.50.010.

6. Before a conditional use may be allowed the Planning Commission must find that all of the following criteria are met:

A. The use is located on the site so as to avoid undue noise and other nuisances and dangers.

B. The development of the use is such that the value of the adjoining property will not be significantly impaired.

C. The size and scale of the use is such that existing public services and facilities are adequate to serve the proposed use.

D. The specific development scheme of the use is consistent and in harmony with the comprehensive plan and surrounding land uses.

E. The granting of the conditional use will not be harmful to the public safety, health or welfare.

F. The use will not significantly cause erosion, ground or surface water contamination or significant adverse alteration of fish habitat on any parcel adjacent to state-identified anadromous streams.

G. The use will comply with all required conditions and specifications if located where proposed and developed, and operated according to the plan as submitted and approved.

H. Comments received from property owners impacted by the proposed development have been considered and given their due weight.

HBC 18.50.040(A). Finding that even one of the general standards is not met requires the conditional use to be denied without consideration as to whether any of the other general standards are met.

7. The conditions to be included in the permit must be taken into consideration when determining whether the criteria for issuance of a conditional use permit have been met.

8. The denial of the CUP application with a one year time limitation but the adoption of a recommendation for issuance of a temporary conditional use permit implies that a time limitation of less than one year or the imposition of additional conditions may have been approved by the Commission. It also implies that the Planning Commission assumed the interim borough manager had the legal authority to issue conditional use permits.

9. The planning commission erred by giving undue consideration to the statements related to undue noise as opposed to the decibel information and by failing to consider fully the difference in noise impact between a one year permit and a permanent conditional use permit which contained the other conditions referenced in the Planning Commission recommendation. In particular, the Commission's apparent belief that the Borough Manager has authority to issue conditional use permits on a temporary basis is incorrect as a matter of law.

10. If the Planning Commission had incorporated its recommendations into a conditional use permit that permit would have met all eight of the standards of section 18.50.040(A). Therefore such a permit should have been granted by the Commission provided it was subject to additional conditions as set forth in these findings of fact and conclusions of law.

11. In particular, the Assembly finds that restricting the conditional use of the property as a heliport for a period expiring in one year and that is further subject to the conditions set forth in this decision results in location of a use on the property which does not generate "undue noise" as that phrase is used in HBC 18.50.040(A) and also provides "due weight" to the comments received from property owners impacted by the proposed use.

12. The Planning Commission is hereby directed to issue a Conditional Use Permit to Big Salmon Ventures, LLC for use of Lot 10, Sundberg Subdivision as a heliport with the following conditions:

- a. Duration of Period of Use. This is a temporary conditional use permit which shall commence on the date of approval and shall expire March 31, 2015.
- b. Operating Hours. 8:00 A.M. to 6:00 p.m.
- c. Only one company, designated by Big Salmon Ventures, may use the heliport.
- d. No use of Bell 212 helicopters.
- e. The following conditions proposed by the applicant are also included in the permit:

1. Fuel storage to be done in accordance with ADEC standards with a fuel spill containment program in place before operations begin.

2. Specific identified GPS flight paths after take off and landing that will create the least amount of noise and impact to nearby residences and take place over state lands to be submitted to the Borough, tracked using GPS tracking and reported in the manner required by SEABA's commercial ski tour permit.

3. Allowance of emergency use for state and federal response, medical, firefighting.

4. Up to 1 voluntary shut down of operations per month for special nearby events that would be considered a nuisance or would disturb the quality of the planned event.

13. The conditional use with the above conditions meets the standard of section 18.50.040(A)(2) because there is no evidence in the record that use of the property for a heliport for a year subject to these conditions will significantly impair the value of the adjoining property.

14. The conditional use with the above conditions meets the standards of section 18.50.040(A)(3) because the size and scale of the proposed heliport is adequately served by existing borough services.

15. The conditional use requested meets the standards of section 18.50.040(A)(5) because granting the conditional use with the conditions specified above results in a seasonal use during a fairly short window for one year which is not harmful to the public safety, health or welfare.

16. The conditional use with the above conditions meets the standards of section 18.50.040(A)(4) because; 1) a specific development scheme which is consistent and in harmony with the comprehensive plan accompanied the application and; 2) the limited temporary use allowed provides an opportunity to more objectively assess longer term impacts and noise associated with use of the Property as a heliport which is consistent with the comprehensive plan suggestion that the Borough develop a management plan and criteria for siting of heliports and ; 3) because a variety of uses with noise impacts are already permitted in the general use district.

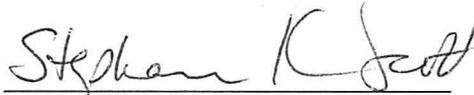
17. The conditional use with the above conditions meets the standards of section 18.50.040(A)(6) because a heliport on the Property will not cause erosion, ground or surface water contamination.

18. The conditional use with the above conditions meets the standards of section 18.50.040(A)(7) because the Assembly presumes the applicant will comply with all permit conditions. If this assumption proves incorrect the permit may be revoked as allowed by Borough code.

Wherefore, having set forth findings of fact and conclusions of law, the Borough

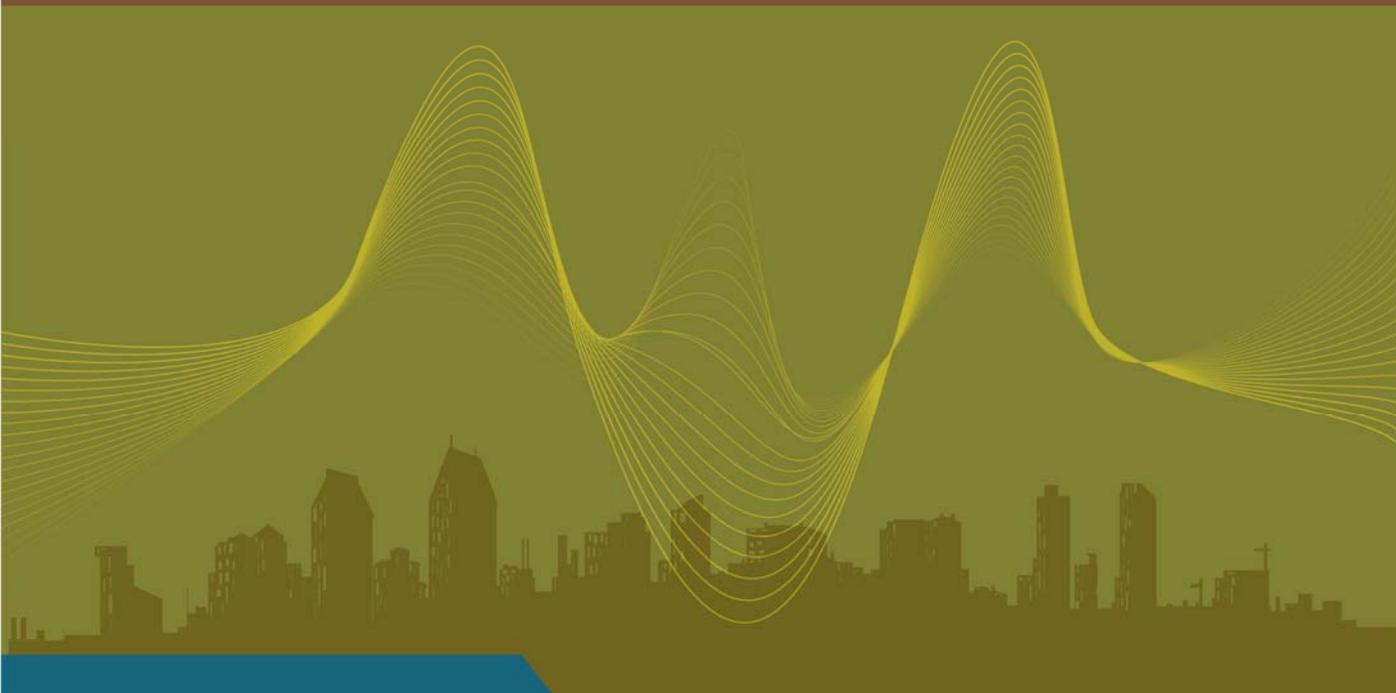
Assembly of the Haines Borough sitting as an appeal body under HBC 18.30.060 hereby REVERSES the decision of the Haines Borough Planning Commission denying the application for a conditional use to allow use of Lot 10, Sundberg Subdivision as a heliport and ORDERS the Planning Commission to issue a conditional use permit to Big Salmon Ventures LLC with the conditions contained above.

Duly adopted this 10th day of April, 2014.

A handwritten signature in cursive script, appearing to read "Stephanie Scott", written over a horizontal line.

Hon. Stephanie Scott
Mayor, Haines Borough

August 2015
REVISED



Noise Measurement Survey

Spring 2015
Borough of Haines, Alaska

Prepared for:
Mead and Hunt
1616 East 15th Street
Tulsa, OK 74120

Prepared by:
Cindy Gibbs



Airports Division
20201 SW Birch Street, Suite 250
Newport Beach, CA 92660
T: 949-250-1222 | F: 949-250-1225

Table of Contents

Executive Summary	iii
1.0 Introduction	1-1
2.0 Background Information on Noise	2-1
2.1 Introduction	2-1
2.2 Characteristics of Sound	2-1
2.3 Sound Rating Scales	2-5
<i>Cumulative Metrics</i>	2-7
3.0 Noise Measurement Methodology	3-1
3.1 Introduction to Noise Assessment Methodology	3-1
3.2 Noise Measurement Survey	3-1
3.3 Measurement and Analysis Procedures	3-9
4.0 Noise Measurement Results	
4.1 Introduction	4-2
4.2 Ambient Noise Measurement Results	4-2
4.3 Aircraft Single Event Noise Measurement Results	4-5
4.4 DNL Noise Measurement Results	4-8
4.5 Hourly LEQ Noise Measurement Results	4-10
4.6 Time Above Ambient Noise Measurement Results	4-11
5.0 Conclusions	5-1
Appendix	
Appendix A Time History Noise Event Plots	A-1
Appendix B Day Night Level (DNL) Contribution Lmax Distribution Results	B-1
Appendix C Hourly Equivalent Noise Level (LEQ) Aircraft and Total Noise Data	C-1
Appendix D Public Comments	D-1

List of Tables

Table 3-1	Noise Measurement Sites	3-4
Table 4-1	Ambient Noise Measurement Results	4-3
Table 4-2	Measured L _{max} Noise Levels of Identified Helicopter Events	4-6
Table 4-3	Measured Time Above Ambient Noise Measurement Results	4-7
Table 4-4	Aircraft DNL Noise Measurement Results	4-8
Table 4-5	Hourly Noise Level Site Report	4-10
Table 4-6	Average Daily Aircraft TAA Noise Measurement Results	4-11
Table 5-1	Potential DNL and TAA Levels with Various Levels of Activity	5-2

List of Figures

Figure 2-1	Frequency Weighting Curves	2-3
Figure 2-2	Example of Various Sound Environments	2-4
Figure 2-3	Examples of L _{max} , SEL, LEQ and DNL Noise Levels	2-6
Figure 2-4	Typical Outdoor Noise Levels in Terms of DNL	2-8
Figure 3-1	Vicinity Map	3-5
Figure 3-2	Noise Measurement Location Map	3-6
Figure 3-3	Noise Monitor Field Location	3-8
Figure 3-4	Example of Continuous Measurement of Noise	3-10
Figure 3-5	Example of Continuous Measurement of Noise at Multiple Sites	3-11
Figure 3-6	Example of Playback of Noise	3-13
Figure 3-7	Events Flight Track Map	3-14
Figure 4-1	Ambient Noise Measurement Results for All Sites	4-4
Figure 4-2	DNL Contribution and Number of Events	4-9

Executive Summary

The Mead & Hunt team was retained by the Borough of Haines to conduct a noise study to determine the noise levels at and near the Mile 26 base used by Southeast Alaska Backcountry Adventures (SEABA). The onsite noise measurements were conducted March 9 – 15, 2015 at four locations selected by the Borough of Haines. Each noise monitoring location had a dedicated noise monitor collecting noise 24 hours per day; the monitors recorded all noise during the measurement period. These measurements were used to then determine the noise environment with and without helicopter activity. The post-measurement period analysis included calculating the single event noise levels of individual helicopter operations, the duration of helicopter noise, the average background noise level when helicopters are not operating, and the cumulative noise level associated with the overall helicopter activity.

During the measurement period, there were 24 helicopter operations based upon GPS data provided by SEABA that included multiple landings and takeoffs at different locations throughout the day. Of those 24 flights, nine helicopter flights flew a path into/out of the Mile 26 base that resulted in recorded simultaneous noise events at all four sites. This included departures from the helipad, arrivals from the helipad and quick turns where the helicopter lands and quickly departures again without shutting down the engine. The rest of the helicopter flights operated at the airport or Mile 33 base.

Four noise metrics were used in this report. The first is the Maximum Noise Level (L_{max}), which is the highest noise level reached during a noise event and this is the metric to which people generally respond when a helicopter flyover occurs. The second metric is the Sound Exposure Level (SEL). SEL metric takes into account the maximum noise level of the event and the duration of the noise event. The third metric is the Day Night Noise Level (DNL). Where L_{max} references a single event, the DNL is a summation of all the noise experienced during an entire (24-hour) day, and is therefore generally used for land use compatibility comparisons. DNL calculations account for the noise energy of the aircraft, duration of noise, the number of aircraft operations and a penalty for nighttime operations. Time Above Ambient (TAA) is the fourth metric; it measures time per day, measured in seconds or minutes, which the noise level was above the ambient or background noise.

The noise measurement results show that the average DNL noise exposure level at each site ranged from 30-51 DNL (with the exception of the helipad site itself which was 69 DNL) on the days that helicopter flights occurred.

When conducting a noise analysis, the findings are typically related to adopted standards or guidelines. The analysis is usually will be compared to local, state, and federal guidelines where they exist. The State of Alaska does not have specified noise limits, nor does it have the ability to regulate where and when aircraft fly. Additionally, for this study, the local municipality of Haines does not have land use regulations for acceptable land uses and associated noise levels. DNL, as defined in this report, is specified by the FAA in 14 Code of Federal Regulations (CFR) Part 150 to be used for community and aircraft noise assessment, and is used by all Federal agencies to determine aircraft/land use

compatibility for federally funded or approved projects. In the absence of a federal interest, the determination of compatibility is a decision by the local community based on local standards and conditions, which is many times based on the federal standard when no local standards exist.

Since there are no local or state noise standards in effect, the federal standard for noise and land use compatibility developed by the Federal Aviation Administration for helicopter and aircraft activity will be the basis of this report. This standard is based on the DNL, which identifies the compatibility of various types of land use with aircraft noise exposure. Under this standard:

- Residential uses are compatible with noise up to 65 DNL and up to 70 DNL with sound insulation;
- Schools are compatible with noise up to 65 DNL and up to 70 DNL with sound insulation; and
- Commercial development is compatible with noise up to 75 DNL.

It is important to note that the measurements detailed in this report are measurements, and not fully modeled annual DNL noise contours, so this report cannot make a full comparison to the annualized 65 DNL. However, except at the helipad site itself, the short-term measured levels are generally below what measurements would be expected at the significant 65 DNL or higher level.

To supplement this, the report also compared a range of expected DNL measurements for different types of locations to give the reader an understanding of typically measured DNL for various land uses and how that compared to the measured noise. For example, noise measured at “wooded residential” land uses is generally around 51 DNL. The noise measurement data for the sites outside the helipad itself ranges from 30-51 DNL, which closely matches what would be expected in wooded residential or quieter land use types (see Table 2-4). Therefore, the noise at the sites were measured at or below the average measurements of typical wooded residential. It is important to note that these examples of typical noise levels for land uses do not correlate to a state or federal standard of noise; rather show *anecdotally* what a typical person would experience in those types of locations compared to the measurements made during the study. The following report focuses on the noise measurements conducted and the resulting analysis.

Subsequent to the publication and review of this report, several comments were received by citizens that live in the Borough. These comments are included in Appendix D. The comments can be generally categorized questioning the validity of the DNL metric, the use of A-weighted metric, not providing the raw data to the Borough, and in making conclusions and recommendations. It must be remembered that the noise modeling was conducted at sites chosen by the Borough, with operational levels and flight tracks not controlled by the consultant, rather controlled by weather conditions. In other words, measurements were taken to reflect only those conditions as they occurred during the measurement sequence.

Based upon the measurement results, the conclusion section projects what the DNL noise levels and TAA would be based different higher levels of daily helicopter operations. Sections of the report have had language added to overall help address the comments without specifically addressing each individual comment. It is the responsibility of the Borough of Haines to determine the acceptability, in terms of land use compatibility, of the helicopter operations. Additionally, due to the sheer volume of raw data, the raw data has been provided to the Borough of Haines on a hard drive.

1.0 Introduction

This document presents the noise measurement results from the spring 2015 noise survey completed for the Borough of Haines. The purpose of this survey is to quantify the aircraft noise exposure in the Borough of Haines from helicopter operations by Southeast Alaska Backcountry Adventures (SEABA) at its base at Mile 26. This report also presents background information on the characteristics of noise as it relates to aircraft operations and determines if the noise at this location is “undue noise.”

The noise monitoring program utilized a network of four noise monitors that were located in and around the SEABA base environs to continuously measure and record the A-weighted noise data, which best represents how the human ear hears noise. Noise event information from both aircraft and non-aircraft noise sources are documented through field observations and logs of helicopter operations from SEABA. The term aircraft and helicopter are used interchangeably in this report.

2.0 Background Information on Noise

2.1 Introduction to Background Information on Noise

This section presents background information on the characteristics of sound and the noise metrics that were determined in this study. This section is divided into the following sub-sections:

- Characteristics of Sound - Presents properties of sound that are important for technically describing noise in the airport setting.
- Sound Rating Scales - Presents various sound rating scales and how these scales are applied to assessing noise from aircraft operations.

2.2 Characteristics of Sound

Sound Level and Frequency. Sound is technically described in terms of the sound pressure (amplitude) and frequency (similar to pitch).

Sound pressure is a direct measure of magnitude of a sound without consideration for other factors. The range of sound pressures that occur in the environment is so large that it is convenient to express them on a logarithmic scale. The logarithmic scale accounts for the ratio of differences between measurements since they are not linear. The standard unit of measurement of sound pressure is the Decibel (dB). One decibel is actually an exponent to the reference point of 20 micro Pascals or about .000000003 pounds per square inch. Thus, 65 decibels is that amount to the 65th power. A logarithmic scale is used because of the difficulty in expressing such large numbers.

Therefore, on the logarithmic scale, a sound level of 70 dB has 10 times as much acoustic energy as a level of 60 dB while a sound level of 80 has 100 times as much acoustic energy as 60 dB. This differs from the human perception to noise, which typically judges a sound 10 dB higher than another to be twice as loud, 20 dB higher four times as loud, and so forth.

The frequency of a sound is expressed as Hertz (Hz) or cycles per second. The normal audible frequency range for young adults is 20 Hz to 20,000 Hz. The prominent frequency range for community noise, including aircraft and motor vehicles, is between 50 Hz and 5,000 Hz. The human ear is not equally sensitive to all frequencies, with some frequencies judged to be louder for a given signal than others. As a result, research studies have analyzed how individuals make relative judgments as to the “loudness” or “annoyance” to a sound. Noise metrics that are used to measure and present aircraft noise assessments are based upon these frequency-weighting scales.

Frequency-Weighted Contours (dBA, dBB, and dBC). In order to simplify the measurement and computation of sound loudness levels, frequency-weighted networks have obtained wide acceptance. The equal loudness level contours for 40 dB, 70 dB, and 100 dB have been selected to represent human frequency response to low, medium, and loud sound levels. By inverting these equal loudness level contours, the A-weighted, B-weighted and C-weighted frequency weightings were developed. These frequency-weighted contours demonstrate different aspects of noise, and are presented in **Figure 2-1**.

The most common weighting is the A-weighted noise curve. The A-weighted decibel scale (dBA) describes frequencies in a manner approximating the sensitivity of the human ear. In the A-weighted decibel, everyday sounds normally range from 30 dBA (very quiet) to 100 dBA (very loud). Most community noise analyses are based upon the A-weighted decibel scale. Examples of various sound environments, expressed in dBA, are presented in **Figure 2-2**.

Figure 2-1
FREQUENCY WEIGHTING CURVES
Borough of Haines Spring 2015 Helicopter Noise Survey

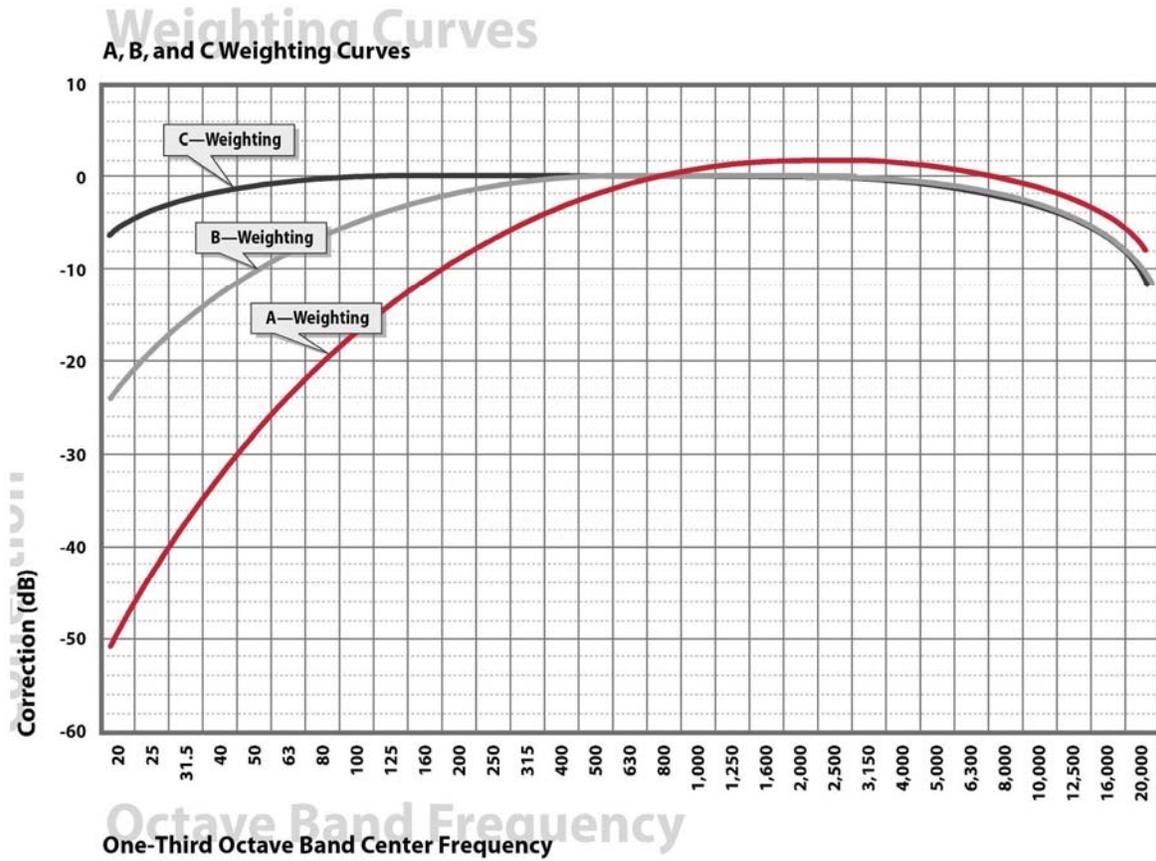


Figure 2-2
EXAMPLE OF VARIOUS SOUND ENVIRONMENTS
Borough of Haines Spring 2015 Helicopter Noise Survey

EXAMPLES OF VARIOUS A-WEIGHTED DECIBEL SOUND ENVIRONMENTS				
dB(A)	OVER-ALL LEVEL Sound Pressure Level Approx. 0.0002 Microbar	COMMUNITY (Outdoor)	HOME or INDUSTRY	LOUDNESS Human Judgement of Different Sound Levels
130		Military Jet Aircraft Takeoff with Afterburner from Aircraft Carrier @ 50 ft. (130)	Oxygen Torch (121)	120 dB(A) 32 Times as Loud
120 110	UNCOMFORTABLY LOUD	Concorde Takeoff (113)	Riveting Machine (110) Rock and Roll Band (108-114)	110 dB(A) 16 Times as Loud
100		Boeing 747-200 Takeoff (101)		100 dB(A) 8 Times as Loud
90	VERY LOUD	Power Mower (96) DC-10-30 Takeoff (96)	Newspaper Press (97)	90 dB(A) 4 Times as Loud
80		Car Wash @ 20 ft. (89) Boeing 727 Hushkit Takeoff (89)	Food Blender (88) Milling Machine (85) Garbage Disposal (80)	80 dB(A) 2 Times as Loud
70	MODERATELY LOUD	High Urban Ambient Sound (80) Passenger Car, 65 mph @ 25 ft. (77) Boeing 757 Takeoff (76)	Living Room Music (76) TV-Audio, Vacuum Cleaner	70 dB(A)
60		Propeller Airplane Takeoff (67) Air Conditioning Unit @ 100 ft. (60)	Cash Register @ 10 ft. (65-70) Electric Typewriter @ 10 ft. (64) Conversation (60)	60 dB(A) 1/2 Times as Loud
50	QUIET	Large Transformers @ 100 ft. (50)		50 dB(A) 1/4 Times as Loud
40		Bird Calls (44) Low Urban Ambient Sound (40)		40 dB(A) 1/8 Times as Loud

*Aircraft takeoff noise measured 6,500 meters from beginning of takeoff roll
 (Source: Advisory Circular AC-36-3G)

2.3 Sound Rating Scales

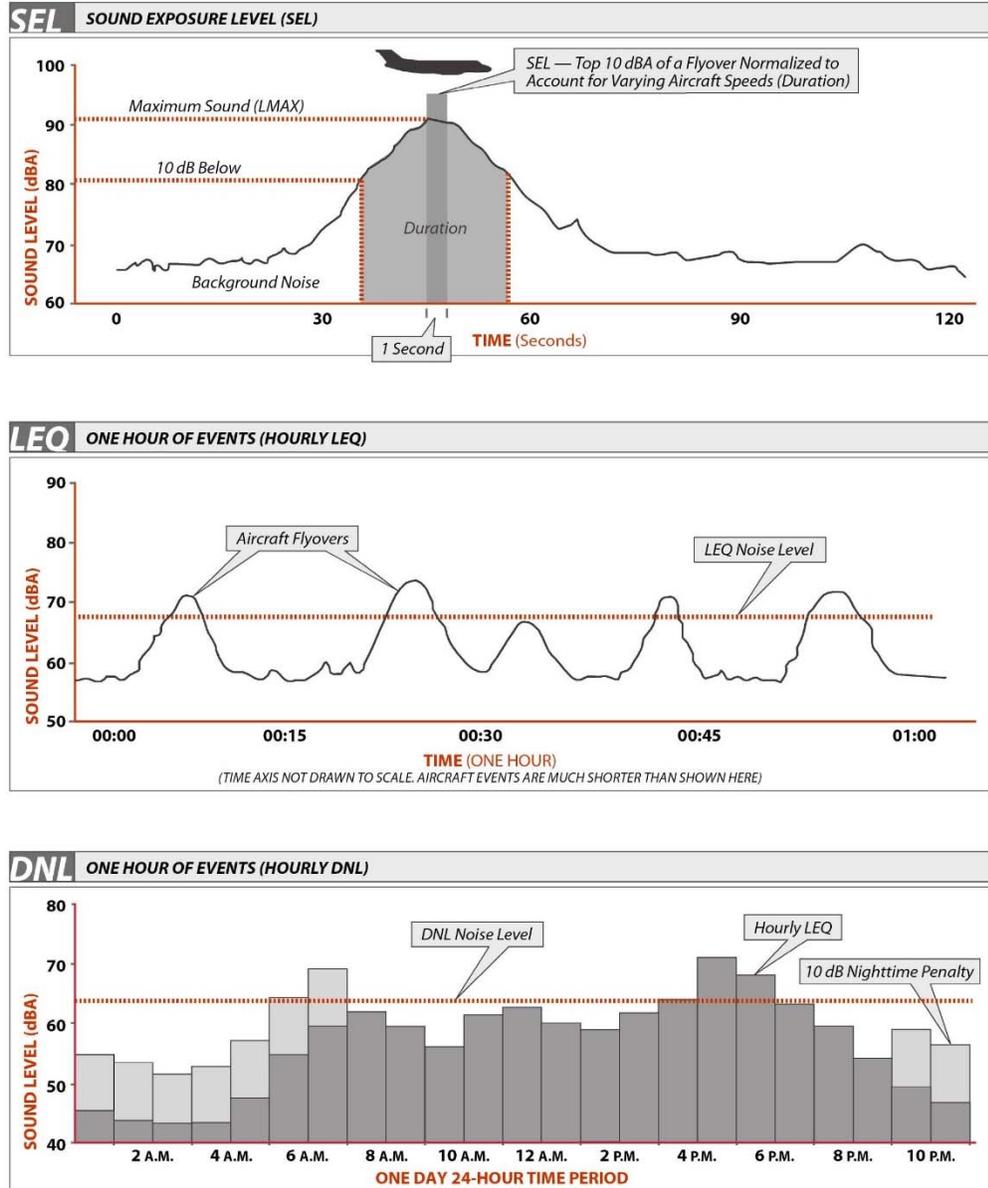
The description, analysis, and reporting of community sound levels is made difficult by the complexity of human response to sound, and the myriad of sound-rating scales and metrics that have been developed for describing acoustic effects. Various rating scales have been devised to approximate the human subjective assessment of “loudness” or “noisiness” of a sound.

Noise metrics can be categorized as single event metrics and cumulative metrics; single event metrics are the focus of this report. Single event metrics describe the noise from individual events, such as an aircraft flyover. Cumulative metrics describe the noise in terms of the total noise exposure throughout the day. The noise metrics used in this study are summarized below:

Single Event Metrics

- *Frequency Weighted Metrics (dBA)*. In order to simplify the measurement and computation of sound loudness levels, frequency weighted networks have obtained wide acceptance. The A-weighting (dBA) scale has become the most prominent of these scales and is widely used in community noise analysis. This metric has shown good correlation with community response and may be easily measured. The metrics used in this study are all based upon the A-weighted dBA scale.
- *Maximum Noise Level*. The highest noise level reached during a noise event is called the “Maximum Noise Level,” or L_{max}. For example, as an aircraft approaches, the sound of the aircraft begins to rise above ambient noise levels. The closer the aircraft gets, the louder it is until the aircraft is at its closest point directly overhead. As the aircraft passes, the noise level decreases until the sound level settles to ambient levels. This is plotted at the top of Figure 2-3. It is this metric to which people generally respond when an aircraft flyover occurs.
- *Sound Exposure Level (SEL)*. The duration of a noise event, or an aircraft flyover, is an important factor in assessing annoyance and is measured most typically as SEL. The effective duration of a sound starts when a sound rises above the background sound level and ends when it drops back below the background level. An SEL is calculated by summing the dB level at each second during a noise event (referring again to the shaded area at the top of Figure 2-3) and compressing that noise into one second. It is the level the noise would be if it all occurred in one second. The SEL value is the integration of all the acoustic energy contained within the event. This metric takes into account the maximum noise level of the event and the duration of the event. For aircraft flyovers, the SEL value is numerically about 10 dBA higher than the maximum noise level. Single event metrics are a convenient method for describing noise from individual aircraft events. Airport noise models contain aircraft noise curve data based upon the SEL metric. In addition, cumulative noise metrics such as Equivalent Noise Level (LEQ) and Day Night Noise Level (DNL) can be computed from SEL data. These metrics are described in the next paragraphs.

Figure 2-3
EXAMPLES OF Lmax, SEL, LEQ, and DNL NOISE LEVELS
Borough of Haines Spring 2015 Helicopter Noise Survey



Cumulative Metrics

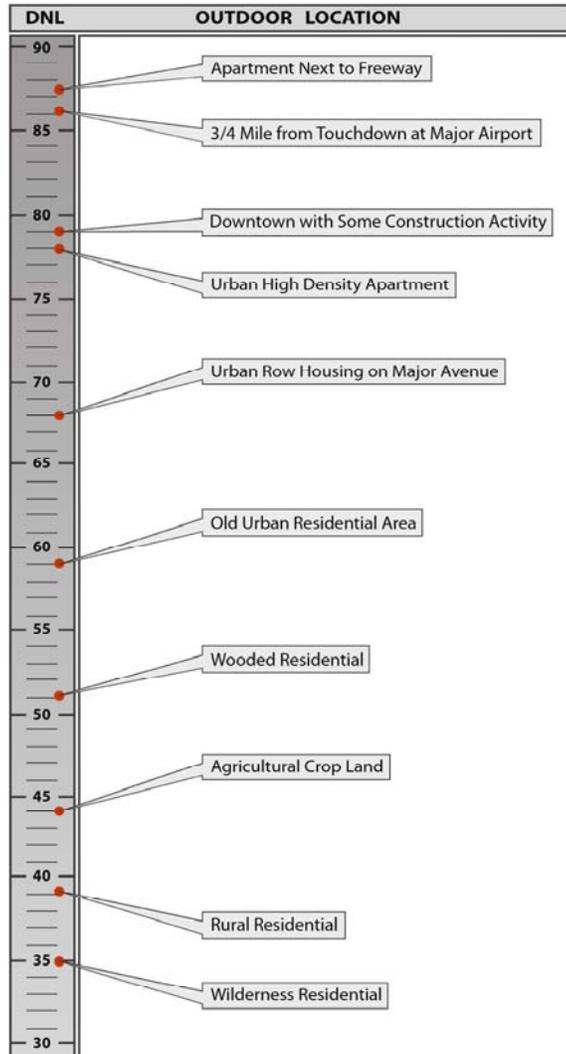
Cumulative noise metrics have been developed to assess community response to noise. They are useful because these scales attempt to include the loudness and duration of the noise, the total number of noise events and the time of day these events occur into one rating scale. They are designed to account for the known health effects of noise.

- *Equivalent Noise Level (LEQ).* LEQ is the sound level corresponding to a steady-state A-weighted sound level containing the same total energy as a time-varying signal (noise that constantly changes over time) over a given sample period. LEQ is the “energy” average taken from the sum of all the sound that occurs during a certain time period; however, it is based on the observation that the potential for a noise to impact people is dependent on the total acoustical energy content. This is graphically illustrated in the middle graph of Figure 2-3. LEQ can be measured for any time period, but is typically measured for 15 minutes, 1 hour or 24-hours. LEQ for one hour is used to develop the Day Night Noise Level (DNL) values for aircraft operations.
- *Day Night Noise Level (DNL).* The DNL index measures the overall noise experienced during an entire (24-hour) day. DNL calculations account for the SEL of aircraft, the number of aircraft operations and a penalty for nighttime operations. In the DNL scale, noise occurring between the hours of 10 p.m. to 7 a.m. is penalized by 10 dB. This penalty was selected to account for the higher sensitivity to noise in the nighttime and the expected further decrease in background noise levels that typically occur at night. DNL is specified by the FAA in Federal Aviation Regulation Part 150 to be used for community and airport noise assessment. In addition, it is used by other federal agencies including the Environmental Protection Agency (EPA), the Department of Defense (DOD) and the Department of Housing and Urban Development (HUD). DNL is graphically illustrated in the bottom of **Figure 2-3**. As presented by the EPA, examples of various noise environments in terms of DNL are presented in **Figure 2-4**. These examples show typical average noise experienced in the outdoor locations noted on Figure 2-4. The examples do not correlate to a state or federal standard of noise; rather show anecdotally what a typical person would experience in that location.
- *Time Above Ambient (TAA).* The Time Above Ambient metric as a supplemental metric for assessing impacts of aircraft noise. The Time Above Ambient metric refers to the total time in seconds or minutes that aircraft noise exceeds certain dBA noise levels in a 24-hour period. There are no noise/land use standards related to the Time Above Ambient index. The Time Above Ambient levels can be used to illustrate the time that noise may disrupt various activities. One such threshold is the Time Above 65 dBA, which generally represents the time when noise is above 65 dBA, and is the level for where outdoor speech interference starts to occur. Time Above Ambient gives an indication of how long aircraft noise can be heard.

FAA and other federal agencies have established land use compatibility guidelines based on the DNL that identify the acceptability of various types of land use with aircraft noise exposure.

- Residential uses are compatible with noise up to 65 DNL and up to 70 DNL with sound insulation;
- Schools are compatible with noise up to 65 DNL and up to 70 DNL with sound insulation; and
- Commercial development is compatible with noise up to 75 DNL.

Figure 2-4
TYPICAL OUTDOOR NOISE LEVELS IN TERMS OF DNL
Borough of Haines Spring 2015 Helicopter Noise Survey



Source: Environmental Protection Agency
 "Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety," EPA/ONAC 550/9-74-004, March, 1974.

3.0 Noise Measurement Methodology

3.1 Introduction to Noise Assessment Methodology

The existing noise environment was determined through an on-site sound level measurement program. The on-site measurements also help establish the ambient non-aircraft noise environment and identify noise levels at specific areas of interest. The following sections provide the details on this process. This section is divided into the following sub-sections:

- Noise Measurement Survey – Describes the noise monitoring sites and the methodology used in the noise measurement survey.
- Measurement and Analysis Procedures – Describes the measurement and analysis procedures used to develop the various noise metrics of use in this study.

3.2 Noise Measurement Survey

Purpose of Measurement Survey

The purpose of the noise measurement program was to document the existing noise conditions within the Haines area around the SEABA base. The study recorded noise events from the SEABA base at Mile 26; there is another helicopter landing pad at Mile 33 used by SEABA, these operations were not part of this noise survey but are included in the graphics to show all of the operations by SEABA during the measurement period. The noise environment in terms of the aircraft and non-aircraft noise sources were determined. Once the baseline noise level conditions have been determined, it will then be possible to identify any changes to the noise that may occur in the future.

Types of Noise Measurements

Measurements were conducted at four (4) sites from March 9, 2015 to March 15, 2015. The noise monitors continuously recorded the one-second noise data and were later analyzed to compute two noise metrics of interest, Maximum Noise Level (L_{max}) and Sound Exposure Level (SEL). These measurements consisted of A-weighted measurements, as defined in Section 2.2.

The sound level meters collected 1-second average noise levels (dBA Leq) and 1-second one-third octave noise values (dB). The 1-second data was used to calculate the following metrics for incorporation into the report: average (dBA Leq), maximum (dBA L_{max}), Sound Exposure Level (SEL), Day-Night Average Sound Level (DNL) and Time Above Ambient (TAA).

Since the A-weighted scale was developed as a set of filters in sound level meters to simulate the frequency sensitivity of the human ear and because the human reaction is normally the reason for an environmental noise study, A-weighted decibels have been used as the industry standard for the assessment of community noise from aircraft and other transportation noise sources.

EPNL is the effective perceived noise level (EPNdB) defined as a rating of the annoyance of a single event and can be used for any high level noise sources. It is primarily used by the aircraft industry and by the FAA to acoustically certify aircraft. This metric is not used in the United States in aviation related community environmental noise studies. A-weighted based metrics such as Lmax and DNL are the metrics used by the FAA and EPA for assessing community noise associated with aircraft operations.

Simultaneous measurements were conducted at all of the sites, therefore a single helicopter operation generated a noise event at each of the noise monitors. An acoustic engineer was onsite for periods of the measurements and used a log of operations from SEABA to correlate helicopter noise events to operations. The primary method used to correlate the SEABA operations with the noise events was using the GPS tracking data provided by SEABA.

Site Selection Criteria

The four measurement locations used in this study were sites chosen by the Borough of Haines to represent locations of interest. The onsite engineer verified the sites conformed to standard site selection criterion are listed below:

General Criteria:

- Exposure to helicopter activity sources
- Representation of the noise environment in the local area
- Locations that are not in close proximity to localized noise sources
- Locations that are not in close proximity to active camp sites
- Locations that are not exposed to excessive high wind speeds
- Locations that are not severely shielded from the aircraft activity
- Security and ease of access to the noise monitoring equipment

Noise Measurement Locations

A vicinity map showing the SEABA base and the surrounding environs is presented in **Figure 3-1**. The noise monitoring locations are presented on a more detailed aerial photo on **Figure 3-2**, with the number of each site noted next to the site. **Table 3-1** includes the name of the site, the general location of the area, and the specific latitude and longitude of the noise monitor location.

Measurement Procedures

Noise monitors were set up to simultaneously collect continuous 1-second noise levels during the entire time the noise monitor was at a given location. The equipment was checked and calibrated on a regular basis throughout the measurement survey. Each of the four sites were measured for the same duration; March 9 and March 15 were partial measurement days, measured for 13 and 11 hours, respectively. All other measurement days were measured for a full 24-hour period.

Table 3-1

NOISE MEASUREMENT SITES

Borough of Haines Spring 2015 Helicopter Noise Survey

Site	Name	Longitude	Latitude
1	Helipad	-136.0130484	59.4029614
2	Home By Helipad	-136.0119003	59.4022874
3	Roadway	-136.006578	59.403724
4	Neighboring Estate	-136.0120859	59.4060923

Acoustic Data

The noise measurement survey utilized specialized monitoring instrumentation that allowed for the calculation of aircraft single event data and ambient noise levels from the measured one-second noise data. The data measured and calculated at each noise measurement site are as follows:

- Continuous one-second noise levels,
- Single event data (Lmax, SEL, and Duration) for individual aircraft,
- Correlation of noise data with aircraft identification,
- Calculation of daily noise metrics such as DNL, LEQ and Time Above Ambient, and
- Non-aircraft ambient sound level.

The survey utilized software that provides continuous measurement and storage of the 1-second noise level. From this data the above noise descriptors could be calculated. In addition, this data can be used to plot the time histories for noise events of interest.

Figure 3-1
Vicinity Map

Borough of Haines – Noise Measurement Survey, Spring 2015



Figure 3-2

Noise Measurement Location Map

Noise measurement location sites: ○

Borough of Haines – Noise Measurement Survey, Spring 2015



Instrumentation

The monitoring program was consistent with state-of-the-art noise measurement procedures and equipment. The measurements consisted of monitoring A-weighted decibels in accordance with procedures and equipment that comply with specific International Standards (IEC), and measurement standards established by the American National Standards Institute (ANSI) for Type 1 instrumentation. **Figure 3-3** shows each of the four measurement sites.

These sites utilized 01dB Solo Sound Level Meters. The meters automatically calculate the various single event data. The 01dB system includes software that provides data storage for later retrieval and analysis.

Microphone location – The microphones were located at a height of 5 feet directed vertically.

Windscreen – The 01dB standard foam windscreen (UA0207 for ½” microphones) were placed over the microphone for each site.

Calibration – During the survey the noise monitoring instrumentation was calibrated at the start and end of each measurement cycle. This calibration was based on standards set by the National Institute of Standards and Technology, formerly the National Bureau of Standards. An accurate record of the meteorological conditions during measurement times was also maintained.

Figure 3-3
Noise Monitors In the Field

Borough of Haines – Noise Measurement Survey, Spring 2015



Site 1



Site 2



Site 3



Site 4

3.3 Measurement and Analysis Procedures

The following section outlines the methodology used to measure and quantify noise levels from aircraft operations and ambient noise level conditions. Measurement methodology and analysis techniques used in the study are also included.

Continuous Measurement of the Noise

The methodology employed in this study used a program that was designed to continuously measure noise at each measurement location. An example of the time history of the continuous noise measured by each monitor is presented in **Figure 3-4**. This graph shows the continuous noise at all of the sites for a 15-minute period. It is possible to see the time period of noise events and the time period of ambient noise in between the events. The process of calculating noise events from this data uses a floating threshold methodology. This allows for the measurement and identification of lower noise level events. The parameters are adjustable and can be modified so that it is possible to recalculate noise events from raw data any time in the future. Additional measurement data can be found in Appendix A.

Network of Multiple Noise Monitors

A network of the four noise monitors was set up to simultaneously and continuously measure noise at multiple monitoring sites. The network of noise monitors is useful to compare noise levels simultaneously at different locations, for the same helicopter. For example, networks of noise monitors are established to illustrate the sideline noise levels at varying distances from the flight path centerline. An example of data from the four sites used during the monitoring is presented in **Figure 3-5**, illustrating a departure of an A-star AS350 B2 helicopter operation, which is the type of helicopter flown by SEABA. This figure shows the continuous noise levels at all of the sites. It is possible to see the aircraft noise levels and time sequence of the noise as the aircraft passes over each site. The network of noise monitors is also used to help separate aircraft noise from other noise sources. Knowing the time sequence of noise events provides a pattern that is one of the components of the noise and flight data correlation process.

Figure 3-4
EXAMPLE OF CONTINUOUS MEASUREMENT OF NOISE
Borough of Haines Spring 2015 Helicopter Noise Survey
Time Period: March 12, 2015

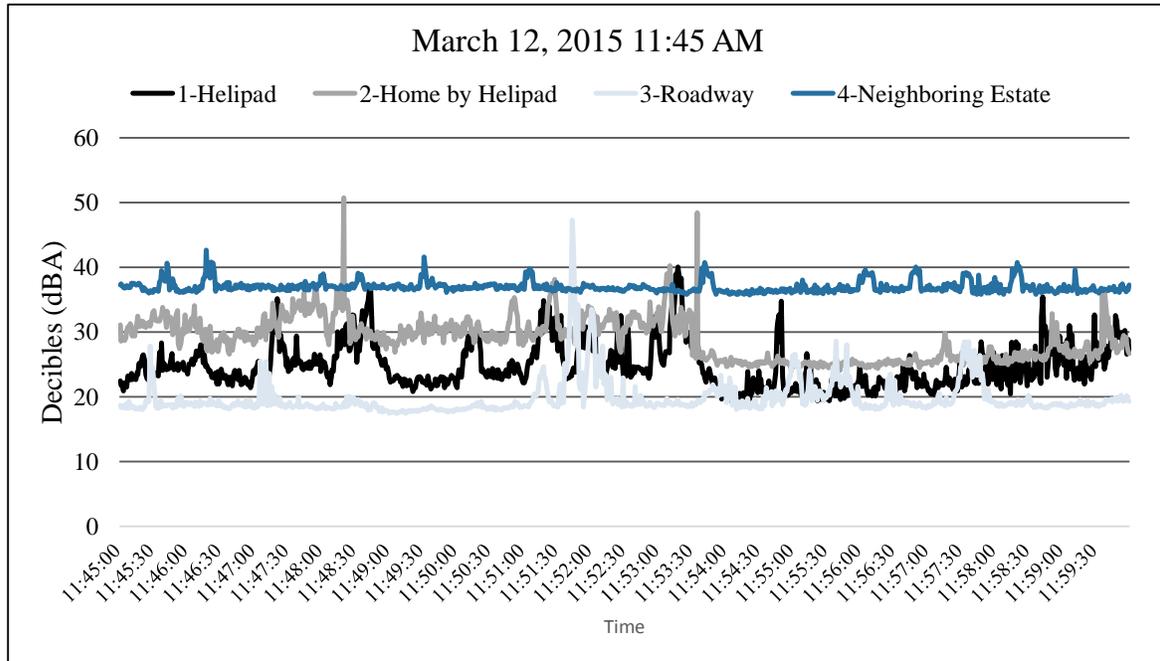
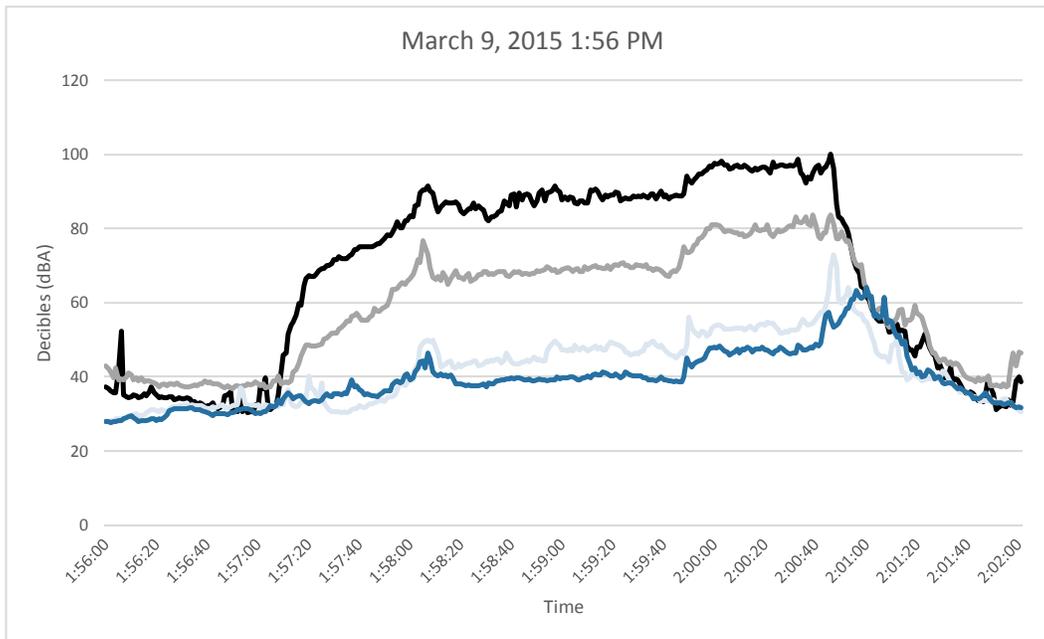


Figure 3-5
EXAMPLE OF CONTINUOUS MEASUREMENT OF NOISE AT MULTIPLE SITES
Borough of Haines Spring 2015 Helicopter Noise Survey
 Event 1: March 9, 2015 1:56 PM

Description	Time _{Max}	Duration (sec)	Start to Peak	L _{MAX}	SEL
1-Helipad	3/9/2015 2:00:46 PM	222	208	100.1	115.2
2-Home by Helipad	3/9/2015 2:00:39 PM	189	166	83.8	98.6
3-Roadway	3/9/2015 2:00:47 PM	73	57	72.9	78.2
4-Neighboring Estate	3/9/2015 2:01:00 PM	281	221	64.1	74.5



Operational Data and Field Observations

Various data sources are utilized to document, identify and correlate the aircraft operations during the noise measurement period. Each of these sources of flight information is described below.

An acoustic engineer managed the noise measurement equipment during the survey, responsible for setting up and maintaining the equipment as well as documenting the aircraft activity during certain times of the measurement study. SEABA provided the consultant with GPS coordinates (2 minute update rate) for the flights conducted during the noise measurement period. The types of data that were collected in the field include:

- Start and end time of noise events (audible time);
- Helicopter information (type, flight track, airport/SEABA base); and
- Non-aircraft event information (type, activity).

Correlation of Noise and Flight Data

Custom noise monitoring software was used to help correlate aircraft flight activity to the noise data. This software utilizes such methods as aircraft position information, noise event sequencing, and noise event profiling to correlate noise data to the aircraft activity. The GPS unit in the helicopter recorded the location of the helicopter every two minutes. The noise event profiling is used to identify characteristics of both the aircraft and non-aircraft noise events.

From the latitude and longitude of the GPS data provided by SEABA, it is possible to reconstruct the flight path for each operation. An example of a flight path from the Mile 26 base to the heliski dropoff is presented in **Figure 3-6**. This figure illustrates the flight path of an arriving helicopter at one point in time. The noise levels from each of the noise monitors is also shown at that same point in time, with the number of each monitor in parenthesis. Computer software was used to correlate the measured noise events with the specific aircraft operating in the sky near the noise monitor at that same point in time. **Figure 3-7** shows all flight tracks recorded by SEABA operations during the measurement period. The helicopters typically have five routes; to/from the Haines Airport to Mile 26 or Mile 33 base, from Mile 26 base to the mountain, from Mile 33 to the mountain, and between the SEABA bases at Mile 26 and Mile 33. Based upon the GPS data, there were a total of 9 flight events that operated at Mile 26 base. This includes departures, arrivals, and quick turn arrival departures (counted for the purposes of the noise study as one event in that the noise generally stayed high throughout the arrival/departure sequence).

Calculation of Aircraft Noise Metrics

Once the collection and correlation of the noise and flight data is complete, the various noise metrics can be calculated. A custom computer program is used to calculate the single event and ambient noise metrics of interest from the data collected at each of the noise monitoring sites.

Figure 3-6

Example of Playback of Noise

Event 6 – Arrival : March 14, 2015 11:15 am

Borough of Haines – Noise Measurement Survey, Spring 2015

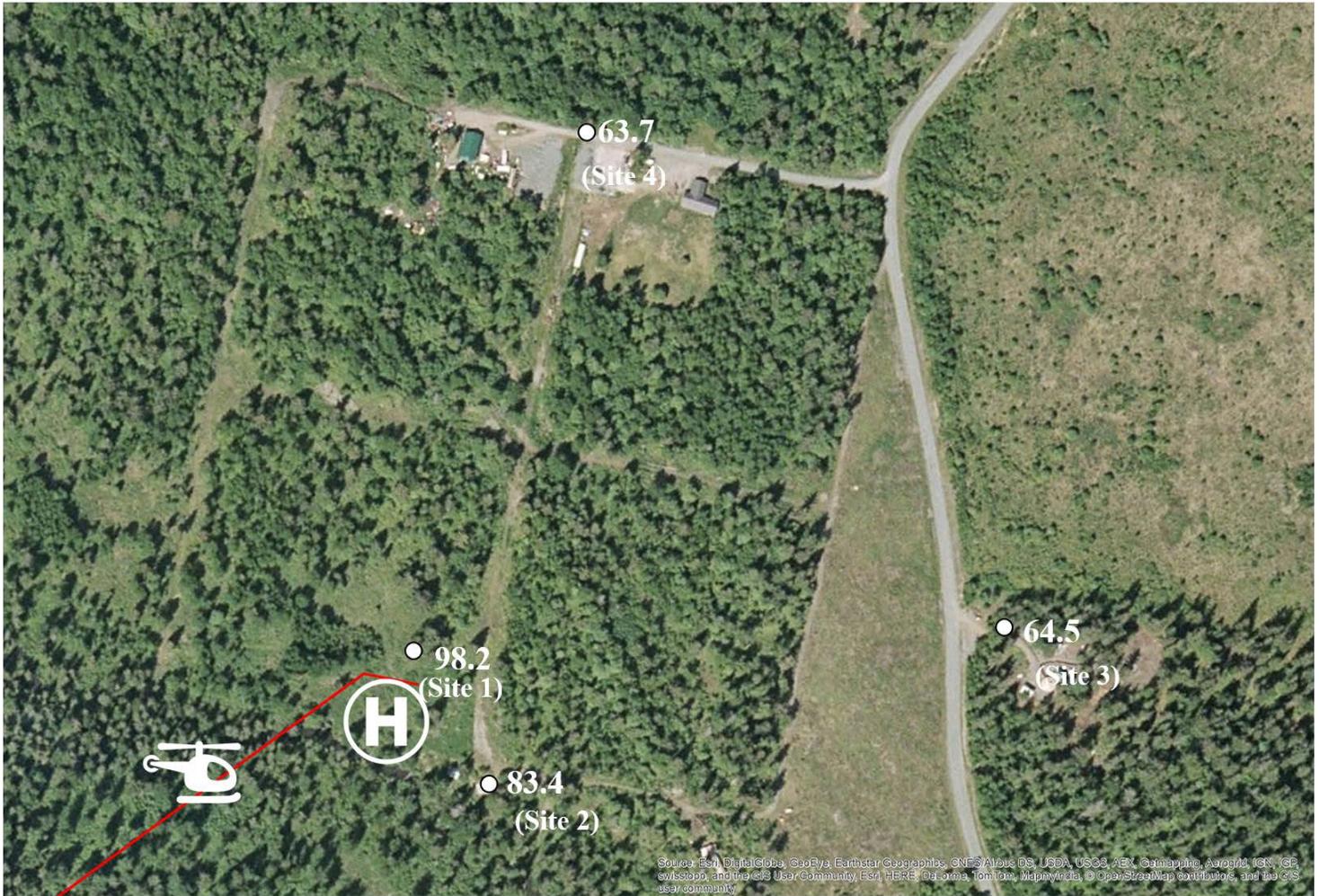
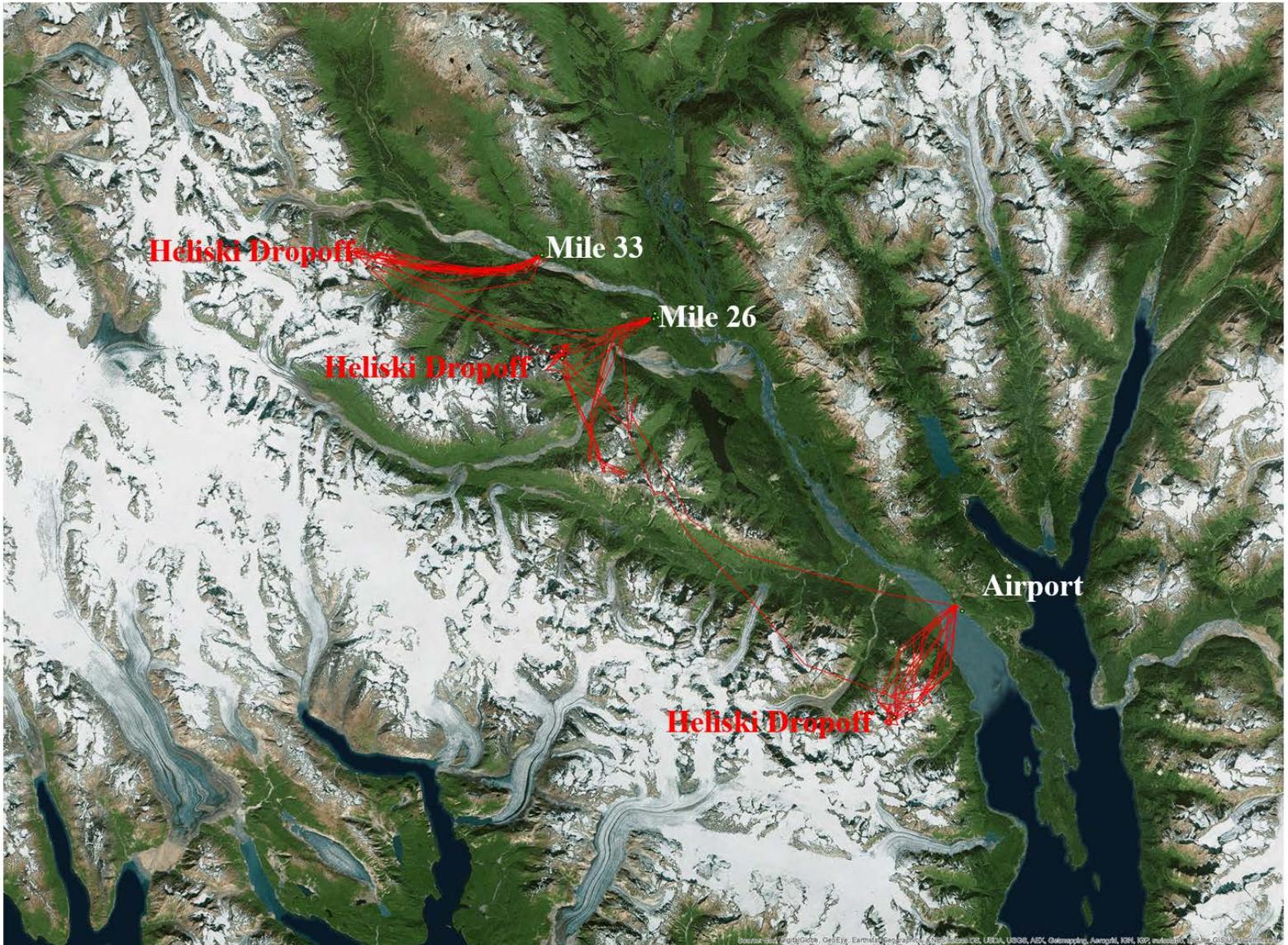


Figure 3-7
Flight Track Map

Borough of Haines – Noise Measurement Survey, Spring 2015



4.0 Noise Measurement Results

The existing noise environment for the area near the SEABA base was determined through a noise measurement survey. The results of the measurement survey are summarized in the following paragraphs. This section presents the overall findings from the noise measurement survey. This includes an explanation of the results and are divided into the following sub-sections:

- Noise Measurement Results
 - Ambient noise measurement results
 - Single event noise measurement results (Lmax)
 - Sound Exposure Level (SEL)
 - Hourly Noise Level (LEQ)
 - Day Night Noise Level (DNL)
 - Time Above Ambient (TAA)

4.1 INTRODUCTION

Noise measurements were conducted between March 9, 2015 and March 15, 2015 at four (4) locations. Continuous measurements were taken at each site for approximately seven (7) days. The measurements consisted of the continuous recording of 1-second noise levels, and the results consist of: (1) single event noise levels from individual helicopter flyovers, (2) cumulative 24-hour continuous measurements, and (3) ambient non-aircraft noise sources. The survey utilized specialized equipment that recorded and displayed the complete time history of sound at the respective sites. The methodology used in the noise measurement program and a description of measurement locations is presented in Section 2 (Background Information) and Section 3 (Methodology).

4.2 AMBIENT NOISE MEASUREMENT RESULTS

Background, or ambient noise, levels (those without aircraft noise) were measured at each of the monitoring locations, and these results are presented using Percent Noise Levels (Ln). Described in greater detail in the background section (Section 2), Percent Noise Level characterizes intermittent or fluctuating noise by showing the noise level that is exceeded during a significant percent of time during the noise measurement period. Ln is most often used to characterize background noise where, for example, L90 is the noise level exceeded 90 percent of the time, L50 is the level exceeded 50 percent of the time, and L10 is the level exceeded 10 percent of the time. Other noise sources that are part of the background noise environment include roadway, wind in the trees, and people activities. This data aids in assessing how intrusive aircraft noise is on the ambient environment. Typically, L90 represents the residual noise level; L50 represents the median or ambient noise level and L10 the most intrusive noise levels.

Results of the ambient noise measurement survey at each measurement site are displayed in the following figures and tables. **Table 4-1** presents the statistical summary of the ambient measurements for the entire measurement period at each site using the Ln noise levels for the Lmin (Minimum Noise Level), L90, L50, L10 and Lmax (Maximum Noise Level). The Lmax is presented for the loudest 1-second dBA value that was measured while the Lmin is the lowest 1-second dBA value that was measured. This table illustrates the range in noise levels that exist at each site. Note that aircraft noise events are included in this data and are typically the source of the peak or maximum noise levels. A graphic depiction of the same information is presented in **Figure 4-1**.

Table 4-1

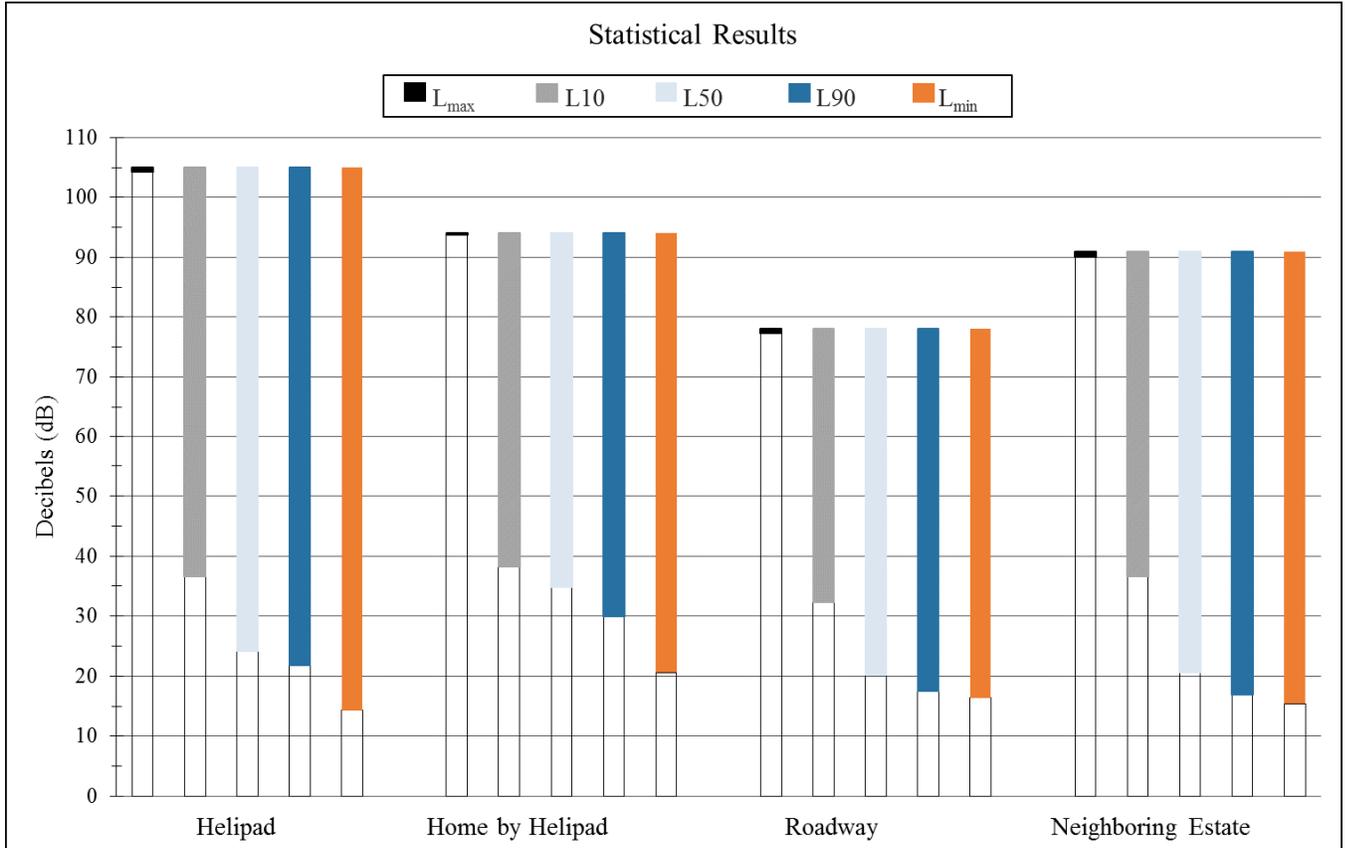
AMBIENT NOISE MEASUREMENT RESULTS*Borough of Haines Spring 2015 Helicopter Noise Survey*

Site #	Name	Description	Statistical Noise Levels (dBA)				
			LMax	L10	L50	L90	LMin
1	HA1	Helipad	104	37	24	22	14
2	HA2	Home By Helipad	94	38	35	30	21
3	HA3	Roadway	77	32	20	18	16
4	HA4	Neighboring Estate	90	37	21	17	15

Industry practices indicate that L90 is a good representation of the residual noise level and L50 the ambient noise level. These represent the levels that are exceeded 90 percent of the time and 50 percent of the time, respectively. The L90 is referred to as the residual noise, when other sources of noise are not present, and is the level above which noise events occur, such as an aircraft overflight or a vehicle pass-by. Aircraft noise would have very little if any contribution to this noise level because of the relatively short duration of these noise events. The L50 noise level is referred to as the median or ambient noise level. Half the time the noise is below this level, and half the time it is above this level. Even during peak hours of aircraft activity, the L50 noise level would not be influenced by the aircraft noise. On a 24-hour basis, this level is generally reflective of ambient noise levels.

The measurements show that residual L90 noise levels ranged from the high 10s dBA to (a high of the high) 20s dBA. Most sites had an average L90 noise level right around 21 dBA. The ambient L50 noise levels ranged from the low 20s dBA to the mid 30s dBA. Ambient noise levels vary by day and time of day. Day-to-day ambient noise levels are generally similar with higher levels occurring during high wind conditions. Ambient noise levels vary by time of day with quieter levels typically occurring during night and early morning hours, and with higher levels occurring during daytime hours. Typical quiet ambient noise levels range from 5 to 10 dBA lower than average hours.

Figure 4-1
AMBIENT NOISE MEASUREMENT RESULTS FOR ALL SITES
Borough of Haines Spring 2015 Helicopter Noise Survey



4.3 AIRCRAFT SINGLE EVENT NOISE MEASUREMENT RESULTS

Aircraft single event noise levels were identified at each measurement site. The acoustic data included the Maximum Noise Level (L_{max}), the Sound Exposure Level (SEL), and the time duration of aircraft events (Time Above Ambient). The single events measured during the survey were correlated when possible with flight operations information. With this correlated single event noise data, it was possible to separately identify the single event noise levels from the different sources of noise. The single event results are summarized in the following paragraphs.

The single event data were analyzed to determine the L_{max} noise level for the helicopter events. An example of the range in noise data is presented for all the measurement sites in **Table 4-2**. This table presents the results of the L_{max} levels for the identified 9 measured helicopter operations at Mile 26. The Helipad site is representative of a location close to the SEABA base while the Neighboring Estate is representative of the site most distant from the SEABA base. These results show the range in L_{max} noise level generated by aircraft events that occur at each site. Note that the noise from a departure, arrival or quick turn generated similar L_{max} noise levels.

Single event noise levels are what people hear when a helicopter flies overhead and are more easily related to by the community than an averaging of noise over a period of time. These are the noise levels that helicopters make as they approach, depart and overfly a specific location. The level of annoyance can be influenced by how much of a decibel difference there is between the maximum single event noise level associated with a flyover and the ambient noise level without the flyover. The ambient noise levels during these helicopter events typically ranged from the high teens to low 30s.

Table 4-2

MEASURED LMAX NOISE LEVELS OF IDENTIFIED HELICOPTER EVENTS*Borough of Haines Spring 2015 Helicopter Noise Survey*

Period: March 9, 2015 to March 15, 2015

Event	Time	Operation	Maximum Noise Level (LMAX) dBA			
			HA1	HA2	HA3	HA4
1	3/9/2015 2:00 pm	Departure	100	84	73	64
2	3/9/2015 2:21 pm	Quick Turn	102	85	72	64
3	3/9/2015 4:45 pm	Quick Turn	100	87	63	65
4	3/9/2015 5:01 pm	Arrival	100	84	63	61
5	3/11/2015 8:12 am	Departure	101	86	69	68
6	3/14/2015 11:15 am	Arrival	100	85	65	63
7	3/14/2015 3:28 pm	Departure	100	82	62	66
8	3/14/2015 4:18 pm	Arrival	103	83	64	66
9	3/15/2015 8:21 am	Departure	104	85	68	71
Average			101	85	66	65

The duration that the aircraft were above the ambient, (Time Above Ambient), was also determined. This is generally a good indication of when the aircraft noise is above the background noise, it will be audible. For these events, the TAA typically includes all phases of the operation, including not only when the aircraft is in flight but also when the aircraft is hovering or on the ground with the engine operating. These TAA levels were roughly the same at all locations. Although as shown in the Lmax data presented above, the magnitude is less at sites further from the helipad location.

The results of the TAA measurements for the 9 identified flight events are presented in **Table 4-3**. For arrival operations the TAA levels were generally 2 to 4 minutes in duration; for departure they were generally 5 to 10 minutes in duration. And for the arrival/departure quick turn, these events ranged in duration from 6 to 12 minutes, depending upon how long the aircraft was located at the helipad before departing again.

Table 4-3

MEASURED TIME ABOVE AMBIENT NOISE MEASUREMENT RESULTS*Borough of Haines Spring 2015 Helicopter Noise Survey*

Event	Time	Operation	Time Above Ambient (TAA) - Minutes			
			HA1	HA2	HA3	HA4
1	3/9/2015 2:00 pm	Departure	5	5	8	8
2	3/9/2015 2:21 pm	Quick Turn	11	10	12	12
3	3/9/2015 4:45 pm	Quick Turn	6	6	6	8
4	3/9/2015 5:01 pm	Arrival	3	3	3	2
5	3/11/2015 8:12 am	Departure	6	7	5	5
6	3/14/2015 11:15 am	Arrival	3	4	4	2
7	3/14/2015 3:28 pm	Departure	5	5	5	5
8	3/14/2015 4:18 pm	Arrival	3	3	4	3
9	3/15/2015 8:21 am	Departure	7	7	10	9
Average	(Minutes)		5	6	6	6

4.4 DNL Noise Measurement Results

Aircraft-related DNL levels were calculated for each of the four noise monitoring locations. **Table 4-4** presents these results. This table lists the average aircraft related measured DNL for the period monitored at each site (March 9, 2015 to March 15, 2015).

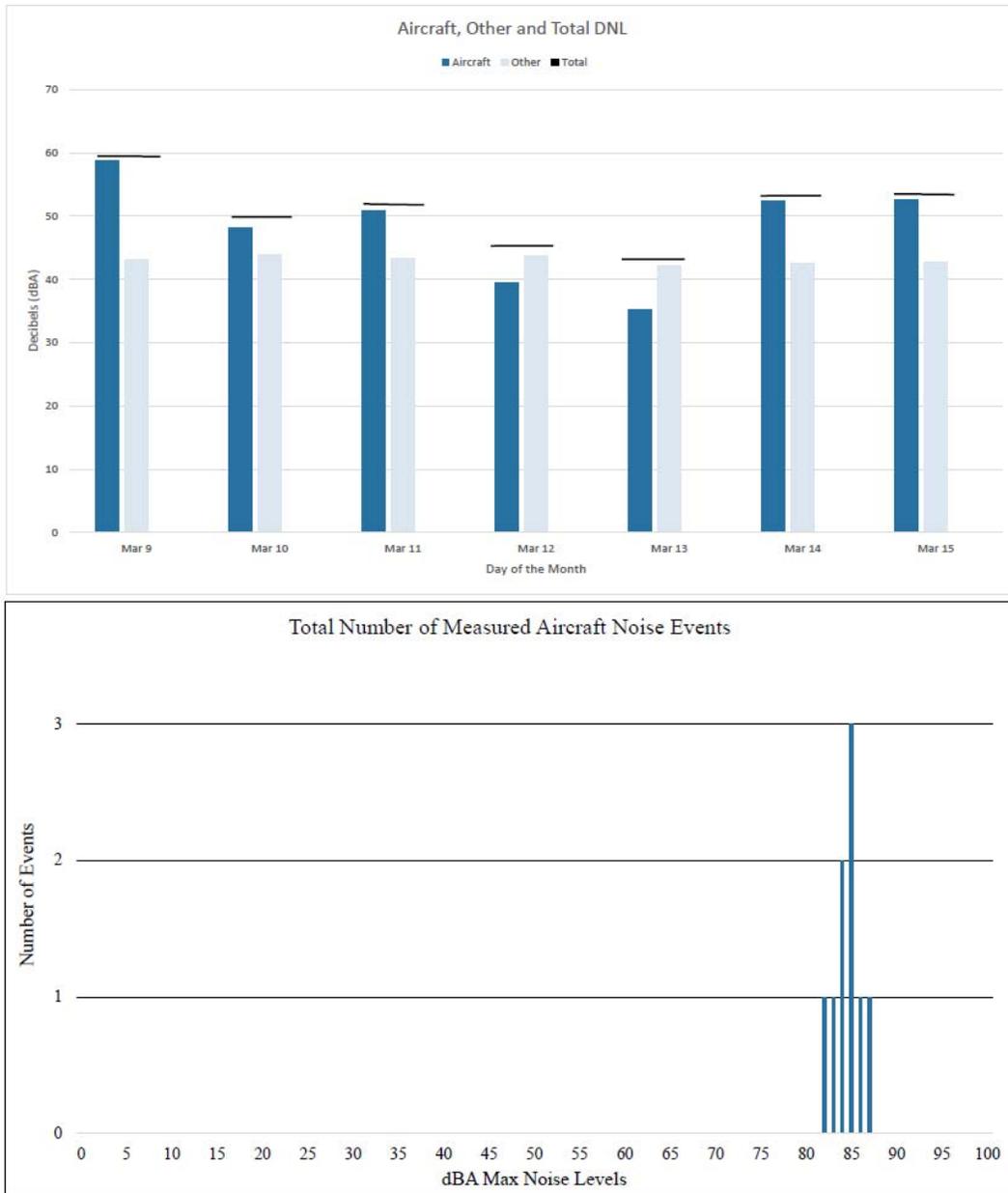
Figure 4-2 shows the same results of the DNL noise measurements at the noise-monitoring locations in a graphical format. The top portion of the graph shows the average DNL noise level measured at each noise monitoring location. The bottom portion of the figure shows the numbers of events and each Lmax noise level. Note that other sources of noise that generated higher noise events were typically vehicles, snowmobile or snow removal equipment. The results show the average noise exposure level at each site stays fairly consistent, with the range of DNL values at any given site is less than 10 dB. The day to day variation in DNL was primarily related to the number of operations. The higher DNL noise level days occurred on days with higher activity. Since the DNL is a cumulative noise metric, people do not hear the DNL level. It is a predictor of human response to aircraft noise used by the FAA and EPA. Additional measurement data can be found in Appendix B.

Table 4-4
AIRCRAFT DNL NOISE MEASUREMENT RESULTS
Borough of Haines Spring 2015 Helicopter Noise Survey

Site #	Name	Description	Aircraft DNL
1	HA1	Helipad	69
2	HA2	Home by Helipad	51
3	HA3	Roadway	30
4	HA4	Neighboring Estate	43*

**Site 4 includes some noise events that were not confirmed as helicopter but were included for worst case purposes. Without these events included the Aircraft DNL would be in the low 30s.*

Figure 4-2
DNL CONTRIBUTION & NUMBER OF EVENTS
Borough of Haines Spring 2015 Helicopter Noise Survey
 Period: March 9, 2015 to March 15, 2015
 Site: 2



4.5 Hourly LEQ Noise Measurement Results

Hourly average noise level values were calculated for each of the measurement locations. Hourly values include the aircraft LEQ, non-aircraft LEQ, and total LEQ.

An example of the hourly aircraft LEQ and total LEQ noise data for the Roadway Site (Site 3) is presented in **Table 4-5**. The total LEQ noise level includes all sources of noise, including residual noise, aircraft, other man made, and natural sources. This table shows that the hourly LEQ noise level varies throughout the day. Tables listing the calculated hourly LEQ noise levels for the remaining sites during each hour of measurement are presented in Appendix C.

Table 4-5
HOURLY NOISE LEVEL SITE REPORT
Borough of Haines Spring 2015 Helicopter Noise Survey
 Period: March 9, 2015 to March 15, 2015
 Site: 3 - Roadway

Metric: Aircraft LEQ

DATE	Hour Of The Day																							DNL	
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22		23
Mar 9	--	--	--	--	--	--	--	--	--	--	--	0	0	27	46	31	37	34	0	0	0	0	0	0	36
Mar 10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mar 11	0	0	0	0	0	0	0	0	41	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	27
Mar 12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mar 13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mar 14	0	0	0	0	0	0	0	0	0	0	0	41	0	0	0	46	40	0	0	0	0	0	0	0	35
Mar 15	0	0	0	0	0	0	0	0	44	0	0	0	0	0	0	--	--	--	--	--	--	--	--	--	32
Energy Average	0	0	0	0	0	0	0	0	38	0	0	33	0	19	38	38	34	26	0	0	0	0	20	0	30

Metric: Total LEQ

DATE	Hour Of The Day																							DNL	
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22		23
Mar 9	--	--	--	--	--	--	--	--	--	--	--	53	36	38	47	43	41	38	35	30	34	23	26	24	44
Mar 10	20	31	44	30	23	23	24	31	33	47	49	30	28	38	44	44	33	27	39	33	35	25	27	24	43
Mar 11	19	24	21	21	19	19	36	35	42	44	30	31	35	37	36	42	23	31	36	35	32	17	20	24	37
Mar 12	25	22	24	19	18	18	19	22	24	45	50	25	28	32	42	24	28	24	29	33	19	18	18	22	39
Mar 13	17	20	22	22	26	28	28	45	44	48	39	43	46	37	41	41	35	31	30	27	36	31	19	19	40
Mar 14	19	19	19	19	19	19	30	34	35	47	38	43	33	31	36	48	41	36	19	29	29	27	30	18	39
Mar 15	19	19	26	27	20	20	26	29	45	34	37	41	36	35	43	--	--	--	--	--	--	--	--	--	38
Energy Average	21	25	37	25	22	23	30	38	41	46	46	46	39	36	43	43	37	33	34	32	33	26	26	22	41

4.6 Time Above Ambient Noise Measurement Results

Aircraft-related Time Above Ambient (TAA) levels were calculated for each of the four noise monitoring locations. **Table 4-6** presents these results; this table lists the time that helicopter noise related events were above the ambient noise level for the noise monitoring period. Instead of programming each noise monitor with a fixed noise level as the threshold, the threshold fluctuates to account for varying ambient noise levels. Thus, sites with a lower ambient background may have a longer TAA duration than sites with a higher background noise.

Table 4-6
AVERAGE DAILY AIRCRAFT TAA NOISE MEASUREMENT RESULTS
Borough of Haines Spring 2015 Helicopter Noise Survey

Site #	Name	Description	Aircraft TAA, minutes
1	HA1	Helipad	12
2	HA2	Home by Helipad	13
3	HA3	Roadway	14
4	HA4	Neighboring Estate	13

Section 5 Conclusions

The noise study defined and quantified operations by SEABA helicopters at its Mile 26 base flying to the heliski dropoff and the Haines Airport. The results indicate there were nine helicopter flight events during the measurement period at the Mile 26 base. The noise measurements conducted used the standard noise measurement weighting that mimics how the human ear hears noise (dBA). These measurements were analyzed to find the ambient background noise level, the peak Lmax level of the helicopter noise event (and SEL), Time Above Ambient and the daily DNL noise levels. For the four sites that were measured, the loudest events occurred at Site 1, the helipad site, and the quietest events occurred at Site 4, the furthest site from the helipad. The area with the quietest ambient noise level was Site 3, the roadway site, followed by the Site 4, the neighboring estate. Aircraft events were loudest at the helipad site, followed by Site 2, the home by the helipad.

During the measurement period, there were nine recorded noise events from helicopter activity that also correlated with the GPS tracks from the helicopter operations; these flight events were recorded at each of the four noise monitoring sites. While noise was reported through several different noise metrics (including Lmax, SEL, TAA, DNL), the DNL results, since they represent the average noise level, are best for comparative purposes with other similar land uses. The results show that the average noise exposure level (DNL) at each of the three sites outside the helipad itself stays fairly consistent for the level of activity during the measurements. This average noise ranges from 30-51 DNL at the sites, and 69 DNL at the helipad location.

While the Lmax is more closely related to what an individual actually hears, and thus experiences, there are no land use compatibility standards associated with Lmax, or even SEL, noise levels. At the helicopter site itself, the Lmax noise levels were 100 dBA. At the three off-site locations the Lmax Levels were typically in the mid-60s to mid-80s dBA. With the background noise levels in the area, these Lmax levels were often 40 to 60 dBA higher than the ambient background. During a helicopter event, the noise level is above the ambient an average of 6 minutes per event.

To draw some conclusions from the measurement data, it is important to look at noise standards that could be guiding the noise environment. As stated in the report, there are no local noise standards in effect. In comparison, the FAA uses a DNL metric, which is an annual average and must be modeled using a specific program (the Integrated Noise Model). For this standard, residential uses are compatible with noise up to 65 DNL (annual average). For this Study, the measured DNL from the sites above cannot be directly compared to the 65 DNL significance threshold because the annual average was not modeled using Integrated Noise Model. However, the measured average levels at the three sites during the study period (outside of the helipad itself) are generally below what measurements would be expected at the significant 65 DNL or higher level.

In addition, to help put the measured DNL into perspective, the report examined the range of typical land uses and their typical DNL noise measurements, and then compared them to the results from

the noise monitoring at the three sites. As stated above, the three sites outside the helipad ranged from 30-51 DNL. Typical noise measurements at an average “wooded residential” land use is generally around 51 DNL. This means that the measured average noise level at the three sites fairly closely matches, or is quieter than what would be expected in wooded residential or quieter land use types. However, it is important to note that these comparisons do not link to any specific noise standard or regulation, but rather give a generalized comparison between what is typical in similar land uses and the results measured during this Study.

The measurement survey measured 9 flight events at the Helipad during the 7 day period with a range of 0 to 4 flight events per day and an average of 1.3 flight events per day (for days with helicopter operations the average was 2.3 flights events per day). The number of helicopter flights can vary significantly based upon many factors including weather, ski conditions and number of customers. Using the single event noise data collected during the measurements, it is possible to project what the daily noise metrics, such as daily DNL and daily TAA would be on more active days than what actually occurred during the measurement survey. **Table 5-1** below presents the potential DNL and TAA levels for higher levels of activity than occurred during the noise measurement period to show how the noise might change if more events occurred per day.

Table 5-1

POTENTIAL DNL AND TAA LEVELS WITH VARIOUS LEVELS OF THEORETICAL ACTIVITY

Borough of Haines Spring 2015 Helicopter Noise Survey

Flights Events Per Day	Day Night Noise Level (DNL)				Daily Time Above Ambient (TAA), minutes			
	HA1	HA2	HA3	HA4	HA1	HA2	HA3	HA4
2	70	52	31	31	11	11	12	12
5	74	56	35	35	27	28	31	29
10	77	59	38	38	53	55	62	59
15	79	61	40	40	80	83	93	88
20	80	62	41	41	106	111	124	117

APPENDIX A

Time History Noise Event Plots

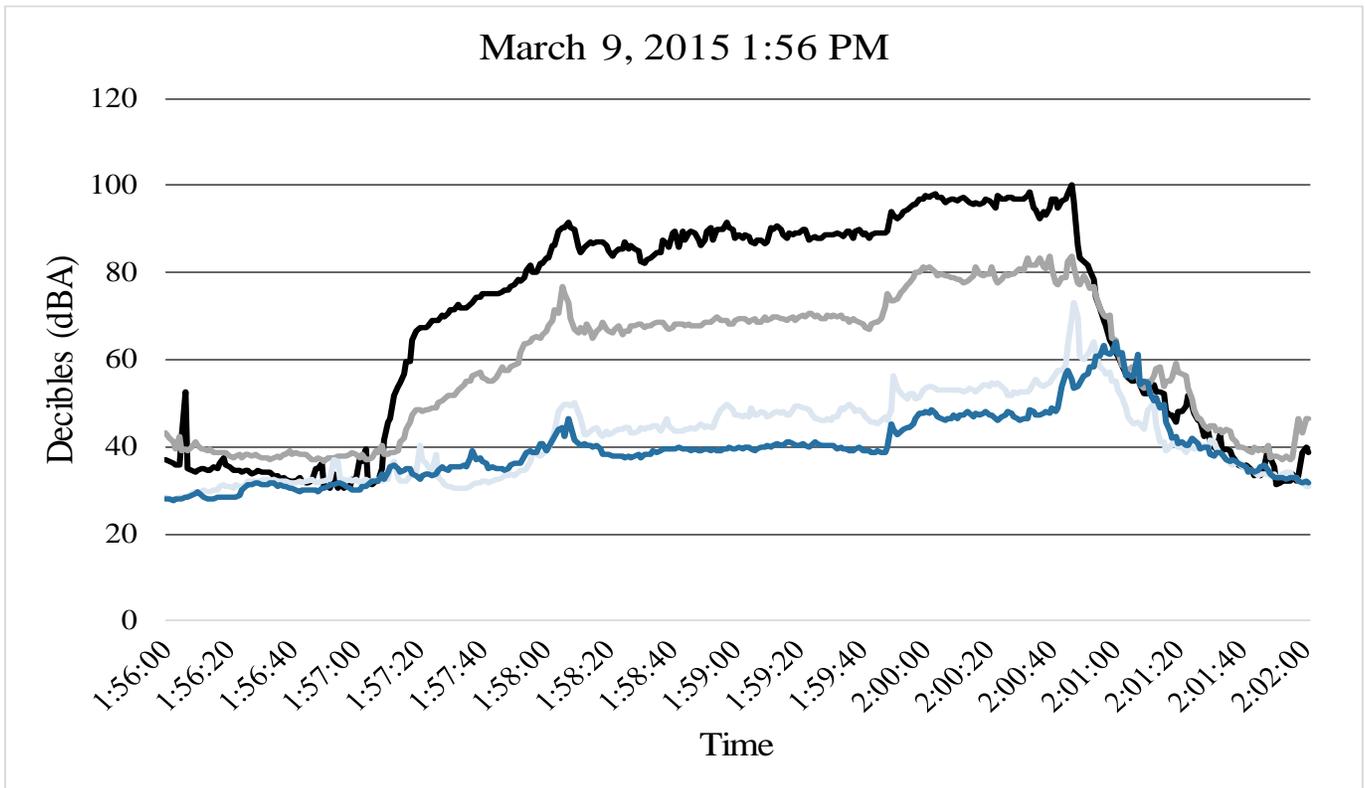
Sample Time History Noise Plot of Helicopter and Ambient Noise

Borough of Haines

Period: March 9, 2015 1:56:00 PM to March 9, 2015 2:02:00 PM

Sites: All

Description	Time _{Max}	Duration (sec)	Start to Peak	L _{MAX}	SEL
1-Helipad	3/9/2015 2:00:46 PM	222	208	100.1	115.2
2-Home by Helipad	3/9/2015 2:00:39 PM	189	166	83.8	98.6
3-Roadway	3/9/2015 2:00:47 PM	73	57	72.9	78.2
4-Neighboring Estate	3/9/2015 2:01:00 PM	281	221	64.1	74.5



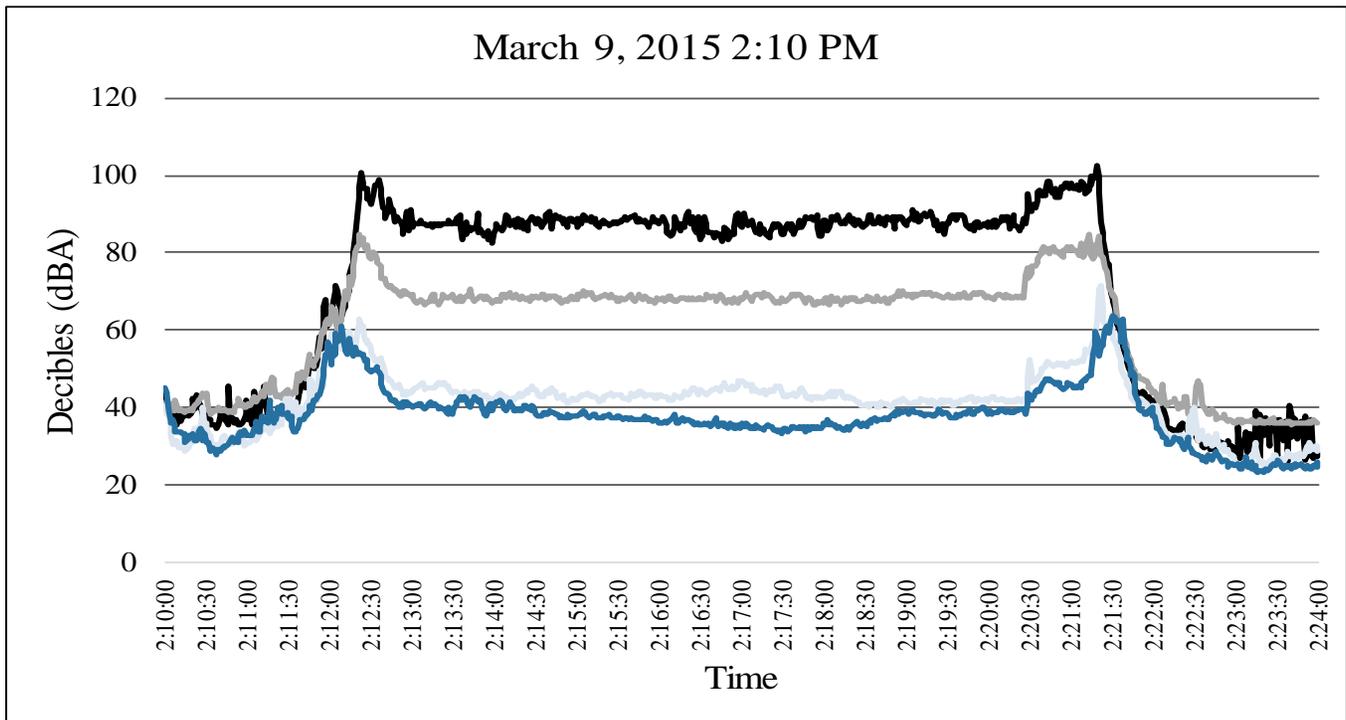
Sample Time History Noise Plot of Helicopter and Ambient Noise

Borough of Haines

Period: March 9, 2015 2:10:00 PM to March 9, 2015 2:24:00 PM

Sites: All

Description	Time _{Max}	Duration (sec)	Start to Peak	L _{MAX}	SEL
1-Helipad	3/9/2015 2:21:19 PM	578	563	102.3	118.0
2-Home by Helipad	3/9/2015 2:21:13 PM	579	556	84.9	100.9
3-Roadway	3/9/2015 2:21:22 PM	59	43	71.6	77.9
4-Neighboring Estate	3/9/2015 2:21:30 PM	97	63	64.0	74.7



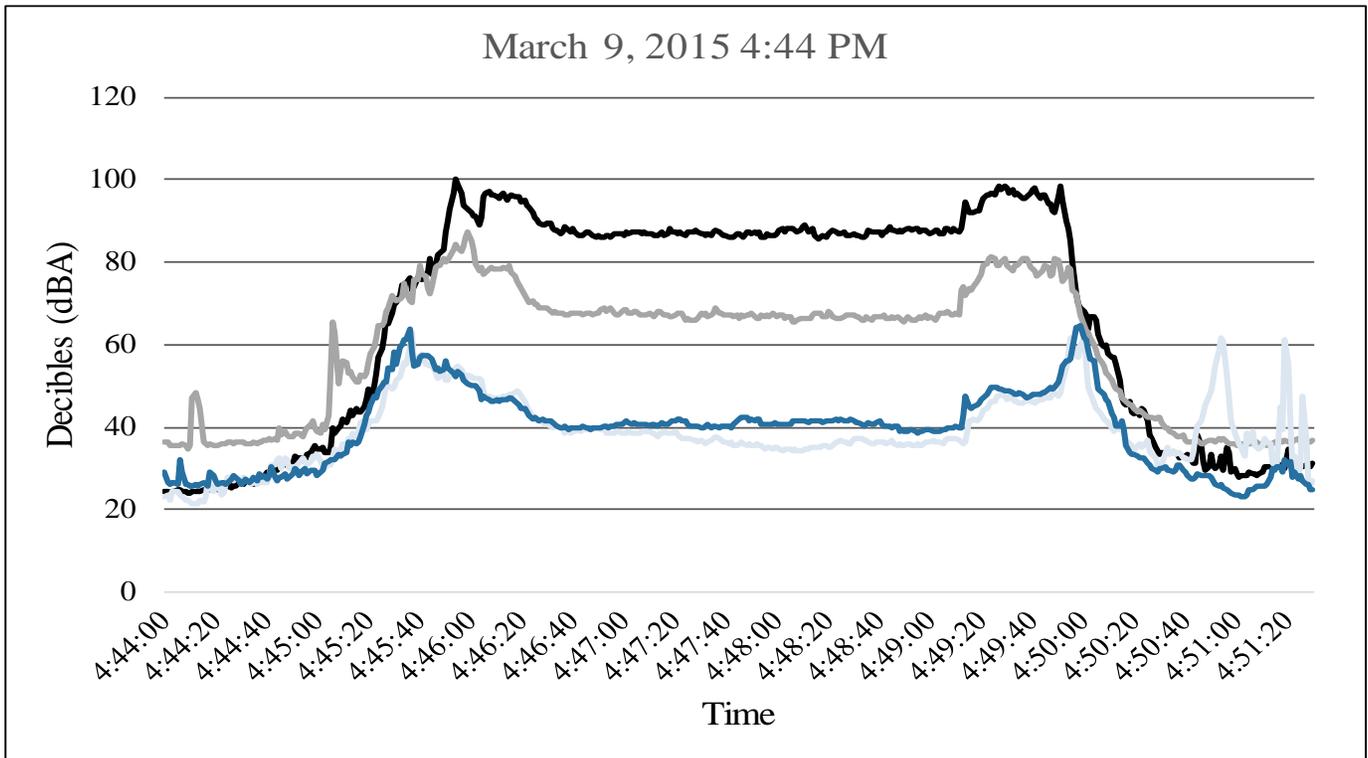
Sample Time History Noise Plot of Helicopter and Ambient Noise

Borough of Haines

Period: March 9, 2015 4:44:00 PM to March 9, 2015 4:51:20 PM

Sites: All

Description	Time _{Max}	Duration (sec)	Start to Peak	L _{MAX}	SEL
1-Helipad	3/9/2015 4:45:54 PM	281	28	100.3	115.7
2-Home by Helipad	3/9/2015 4:45:59 PM	279	35	87.3	99.5
3-Roadway	3/9/2015 4:49:55 PM	10	3	61.8	68.7
4-Neighboring Estate	3/9/2015 4:57:17 PM	18	5	68.6	76.6



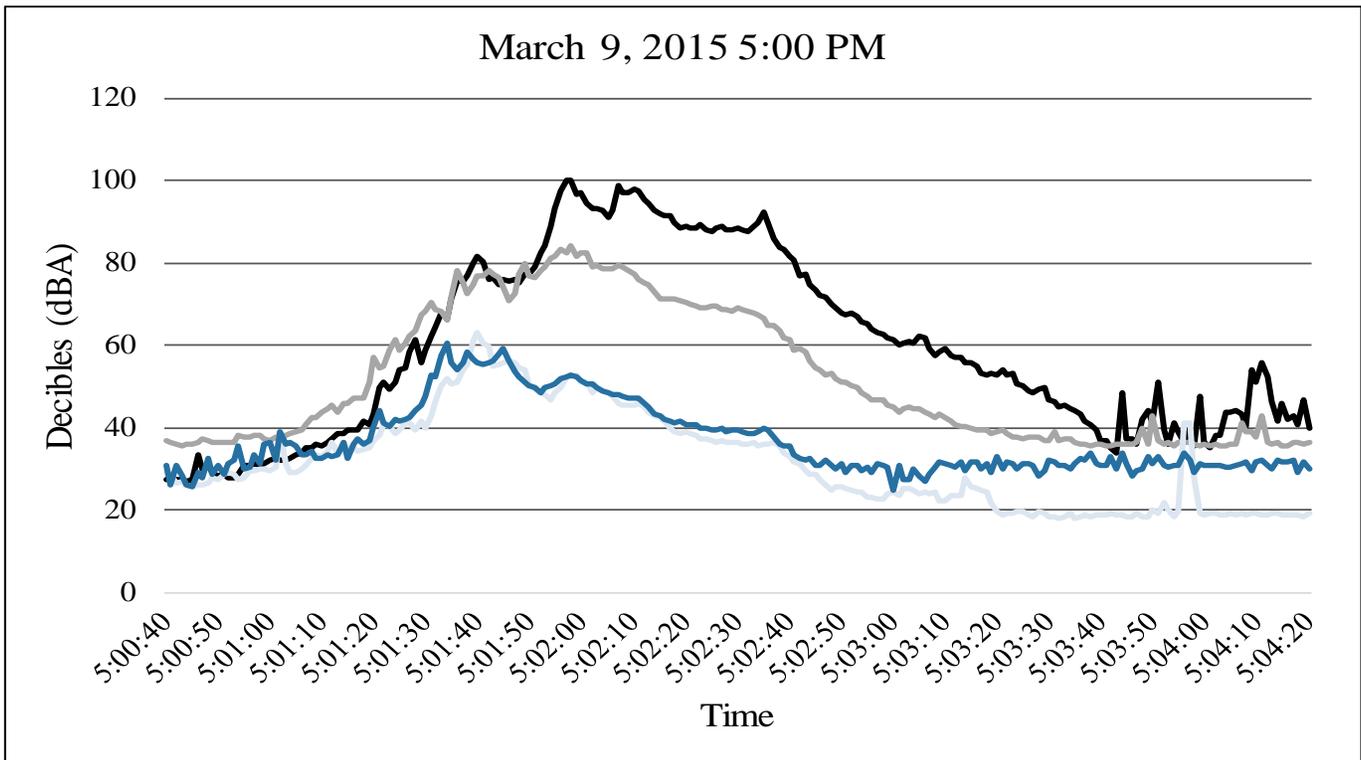
Sample Time History Noise Plot of Helicopter and Ambient Noise

Borough of Haines

Period: March 9, 2015 5:00:40 PM to March 9, 2015 5:04:20 PM

Sites: All

Description	Time _{MAX}	Duration (sec)	Start to Peak	L _{MAX}	SEL
1-Helipad	3/9/2015 5:01:57 PM	119	32	100.2	110.4
2-Home by Helipad	3/9/2015 5:01:58 PM	94	39	84.0	95.2
3-Roadway	3/9/2015 5:01:40 PM	18	7	63.1	69.5
4-Neighboring Estate	3/9/2015 5:01:34 PM	108	36	60.6	70.4



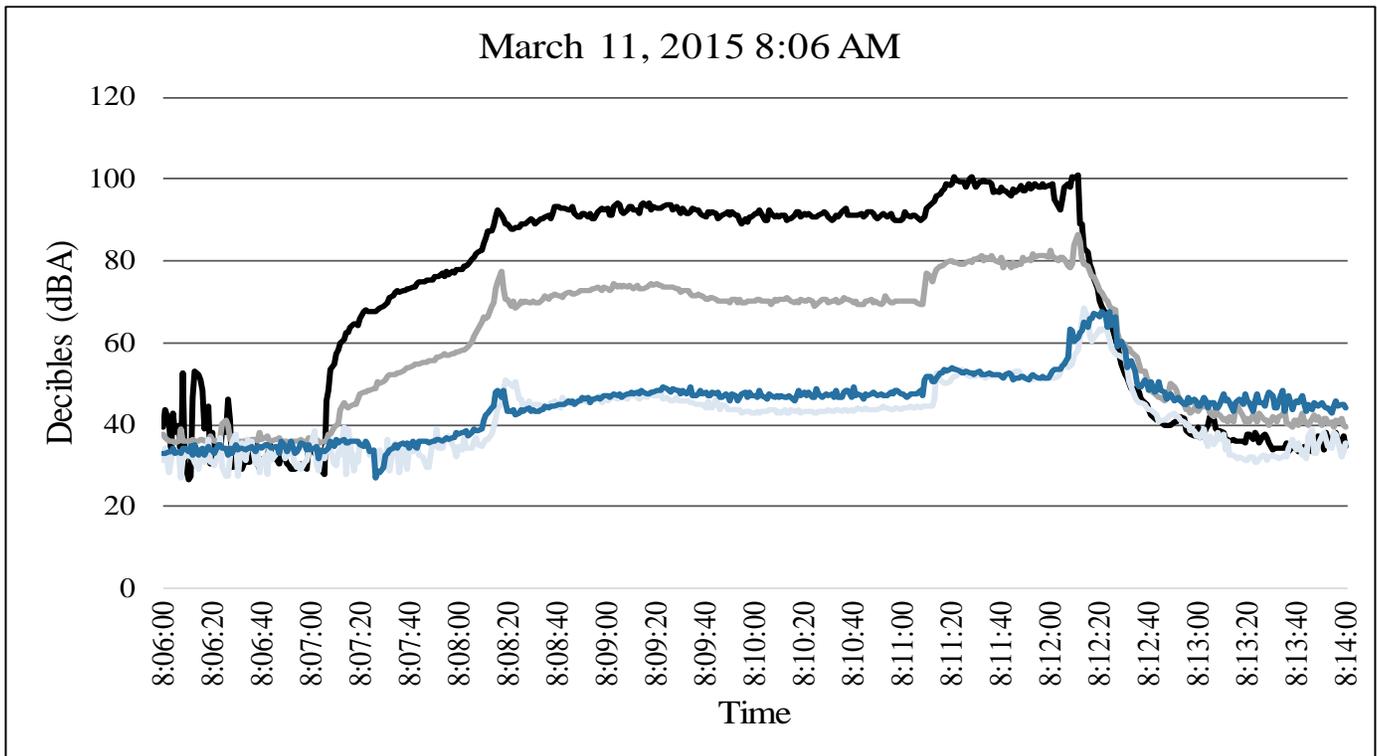
Sample Time History Noise Plot of Helicopter and Ambient Noise

Borough of Haines

Period: March 11, 2015 8:06:00 AM to March 11, 2015 8:14:00 AM

Sites: All

Description	Time _{Max}	Duration (sec)	Start to Peak	L _{MAX}	SEL
1-Helipad	3/11/2015 8:12:11 AM	312	297	100.9	118.2
2-Home by Helipad	3/11/2015 8:12:11 AM	261	244	86.3	100.0
3-Roadway	3/11/2015 8:12:14 AM	79	60	68.7	76.5
4-Neighboring Estate	3/11/2015 8:12:24 AM	27	17	67.8	78.4



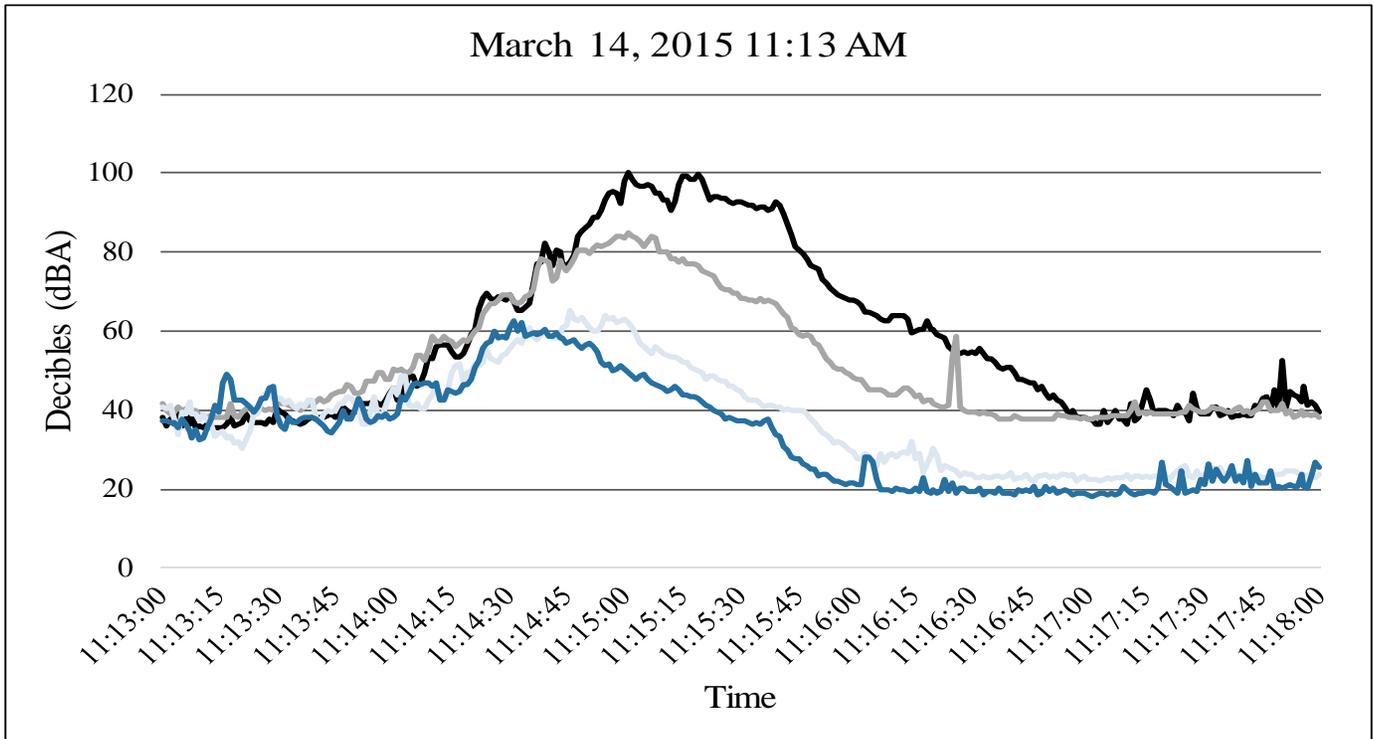
Sample Time History Noise Plot of Helicopter and Ambient Noise

Borough of Haines

Period: March 14, 2015 11:13:00 AM to March 14, 2015 11:18:00 AM

Sites: All

Description	Time _{Max}	Duration (sec)	Start to Peak	L _{MAX}	SEL
1-Helipad	3/14/2015 11:15:01 AM	117	39	100.3	112.4
2-Home by Helipad	3/14/2015 11:15:01 AM	117	61	84.9	97.4
3-Roadway	3/14/2015 11:14:46 AM	58	25	65.2	77.0
4-Neighboring Estate	3/14/2015 11:12:35 AM	18	15	88.0	92.8



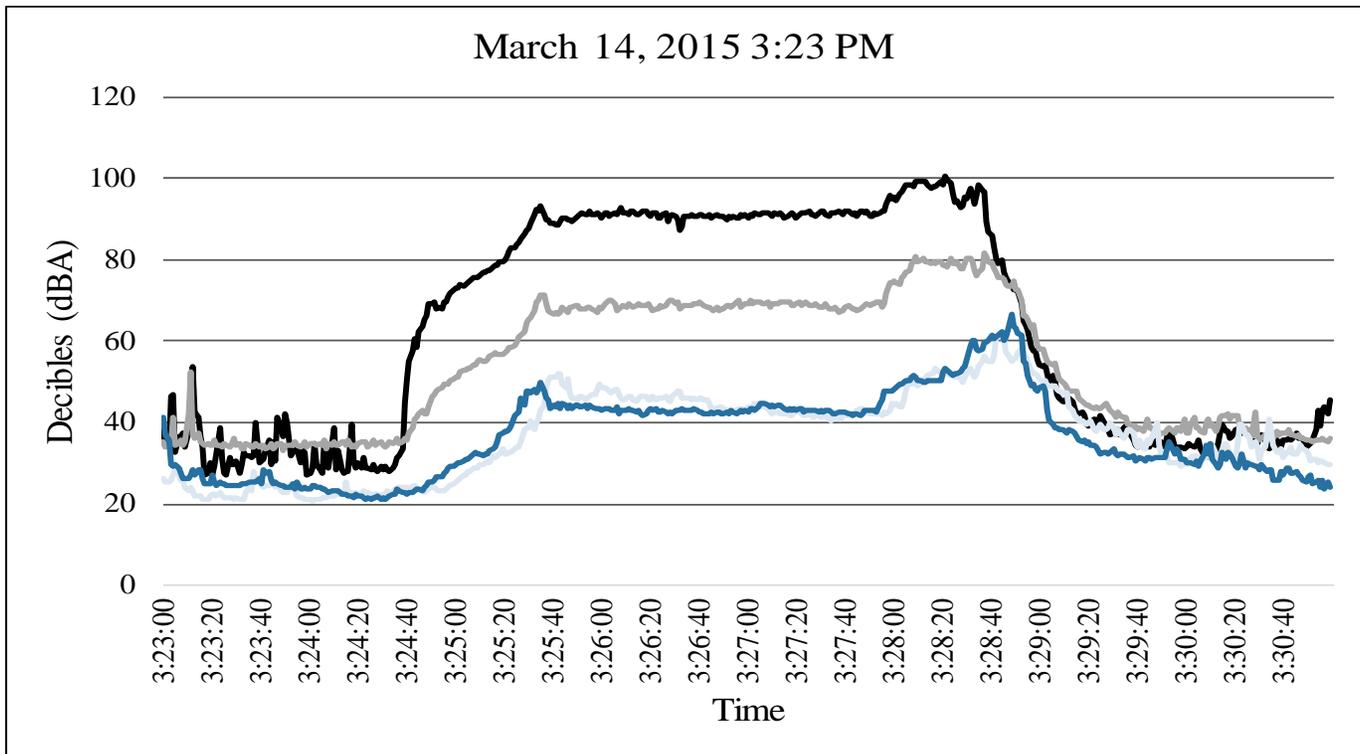
Sample Time History Noise Plot of Helicopter and Ambient Noise

Borough of Haines

Period: March 14, 2015 3:23:00 PM to March 14, 2015 3:30:40 PM

Sites: All

Description	Time _{Max}	Duration (sec)	Start to Peak	L _{MAX}	SEL
1-Helipad	3/14/2015 3:28:21 PM	251	216	100.5	116.2
2-Home by Helipad	3/14/2015 3:28:37 PM	210	189	81.8	96.7
3-Roadway	3/14/2015 3:28:44 PM	51	32	62.2	72.3
4-Neighboring Estate	3/14/2015 3:28:48 PM	250	211	66.8	76.0



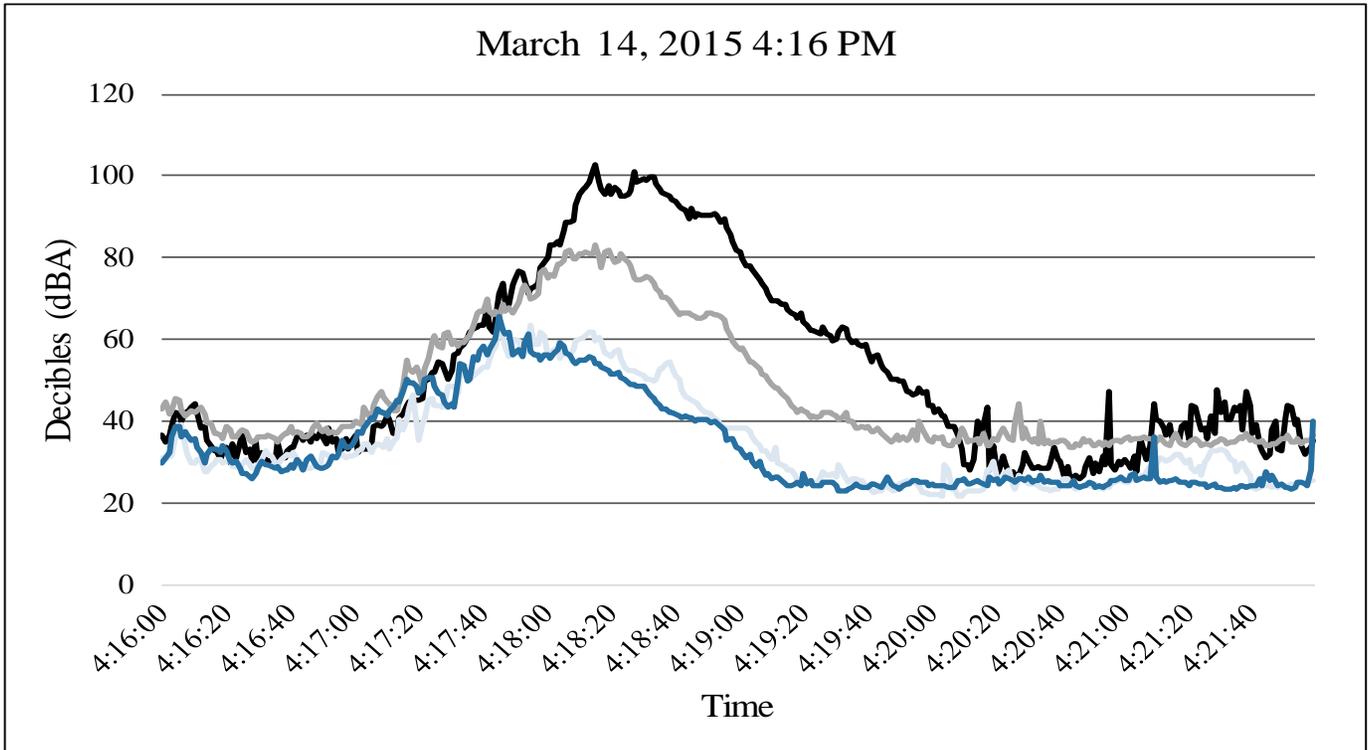
Sample Time History Noise Plot of Helicopter and Ambient Noise

Borough of Haines

Period: March 14, 2015 4:16:00 PM to March 14, 2015 4:21:40 PM

Sites: All

Description	Time _{MAX}	Duration (sec)	Start to Peak	L _{MAX}	SEL
1-Helipad	3/14/2015 4:18:15 PM	110	38	102.7	113.4
2-Home by Helipad	3/14/2015 4:18:15 PM	114	59	83.0	95.3
3-Roadway	3/14/2015 4:17:55 PM	69	22	63.7	75.9
4-Neighboring Estate	3/14/2015 4:17:45 PM	114	44	65.5	74.8



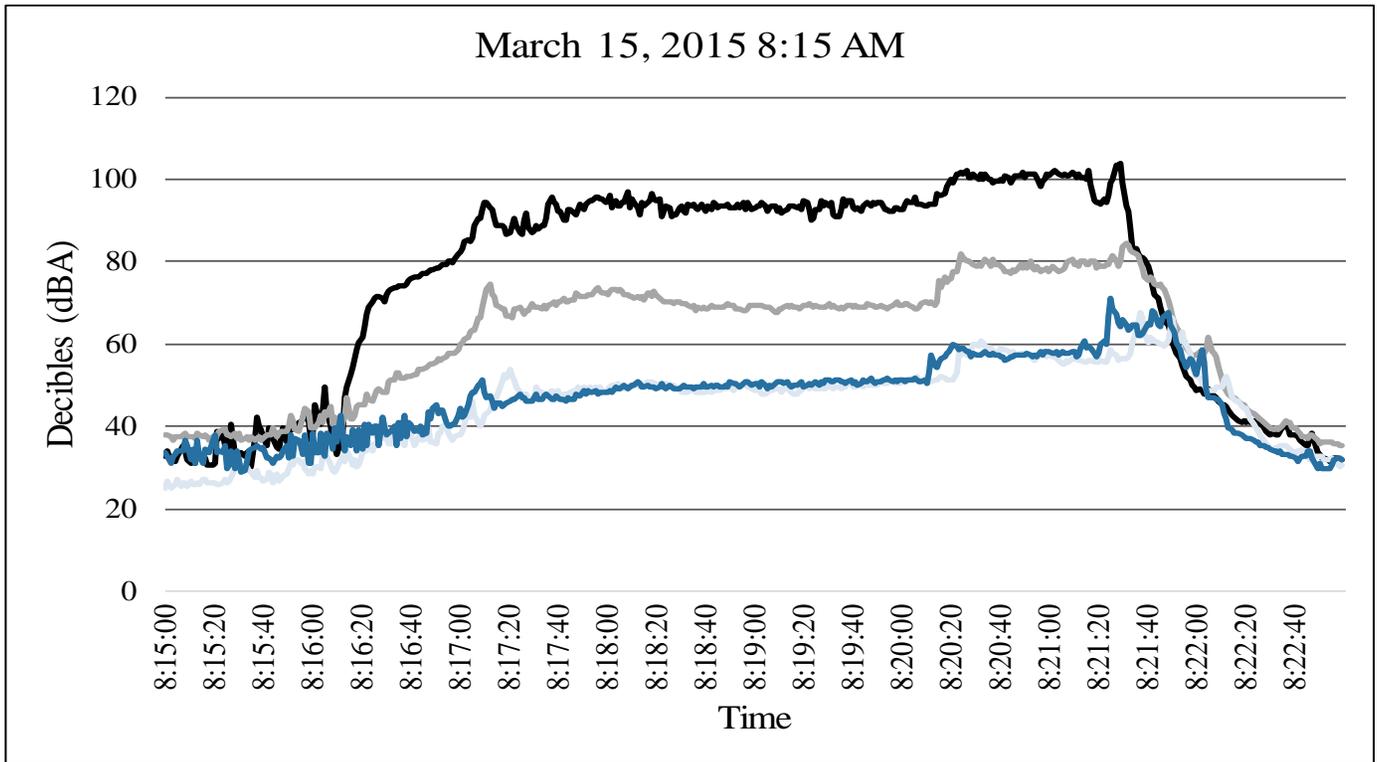
Sample Time History Noise Plot of Helicopter and Ambient Noise

Borough of Haines

Period: March 15, 2015 8:15:00 AM to March 15, 2015 8:22:40 AM

Sites: All

Description	Time _{Max}	Duration (sec)	Start to Peak	L _{MAX}	SEL
1-Helipad	3/15/2015 8:21:29 AM	329	308	103.7	120.9
2-Home by Helipad	3/15/2015 8:21:31 AM	290	267	84.7	99.9
3-Roadway	3/15/2015 8:21:37 AM	98	75	67.7	79.4
4-Neighboring Estate	3/15/2015 8:21:25 AM	112	73	71.1	82.0



APPENDIX B

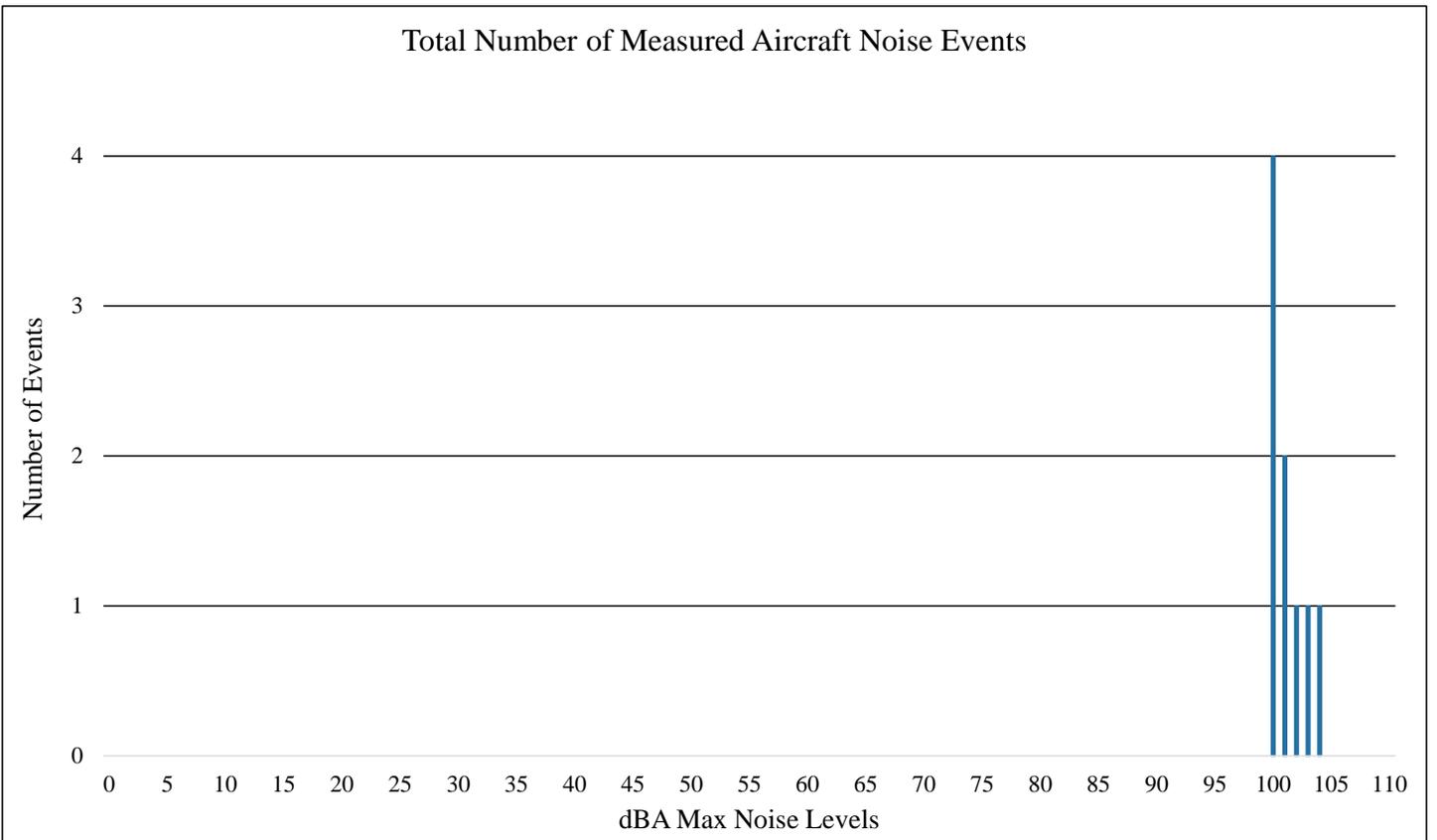
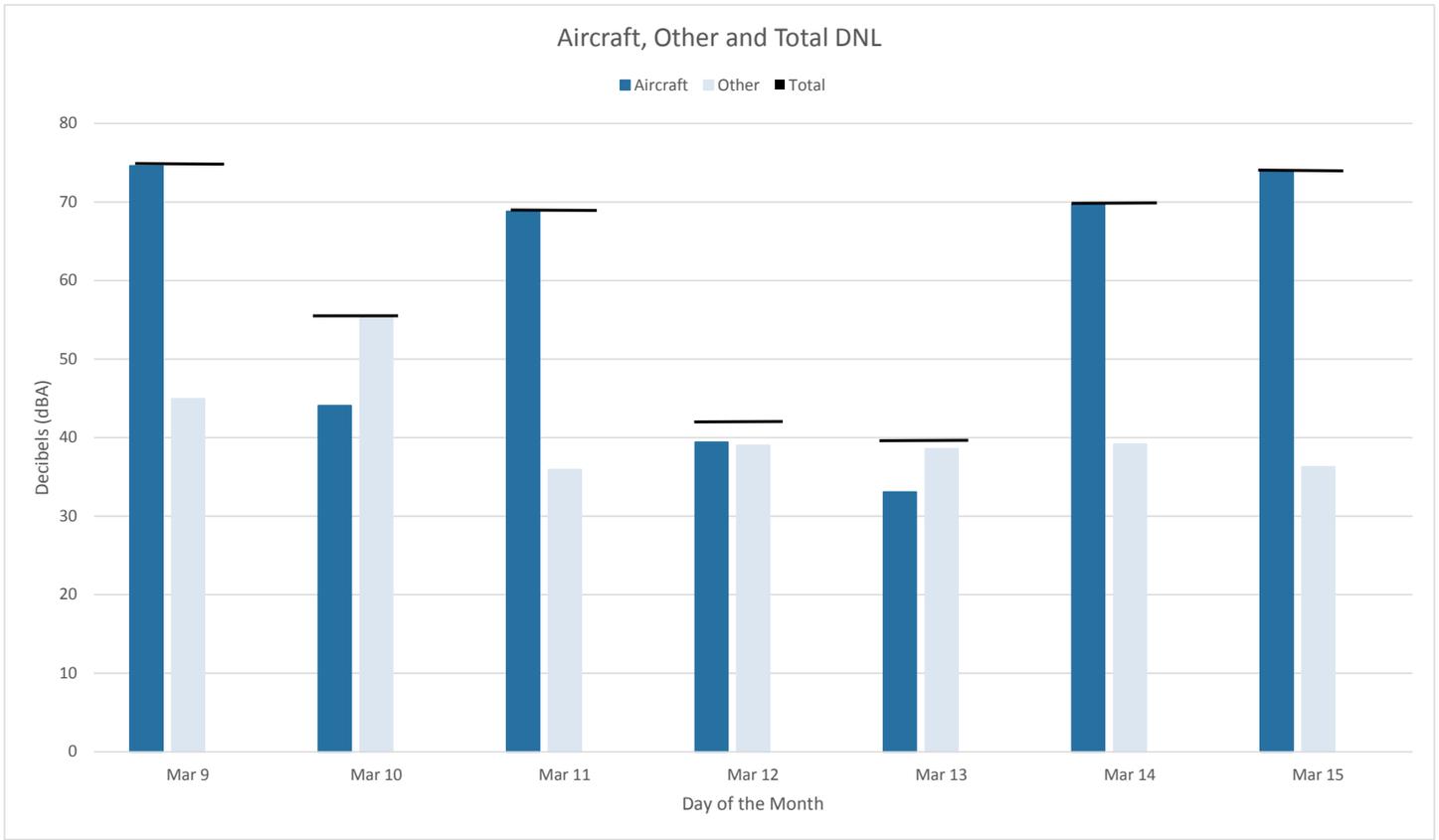
DNL Contribution and Lmax Distribution Results

DNL Contribution and Lmax Distribution Results

Borough of Haines

Period: March 9, 2015 to March 15, 2015

Site: 1 - Helipad

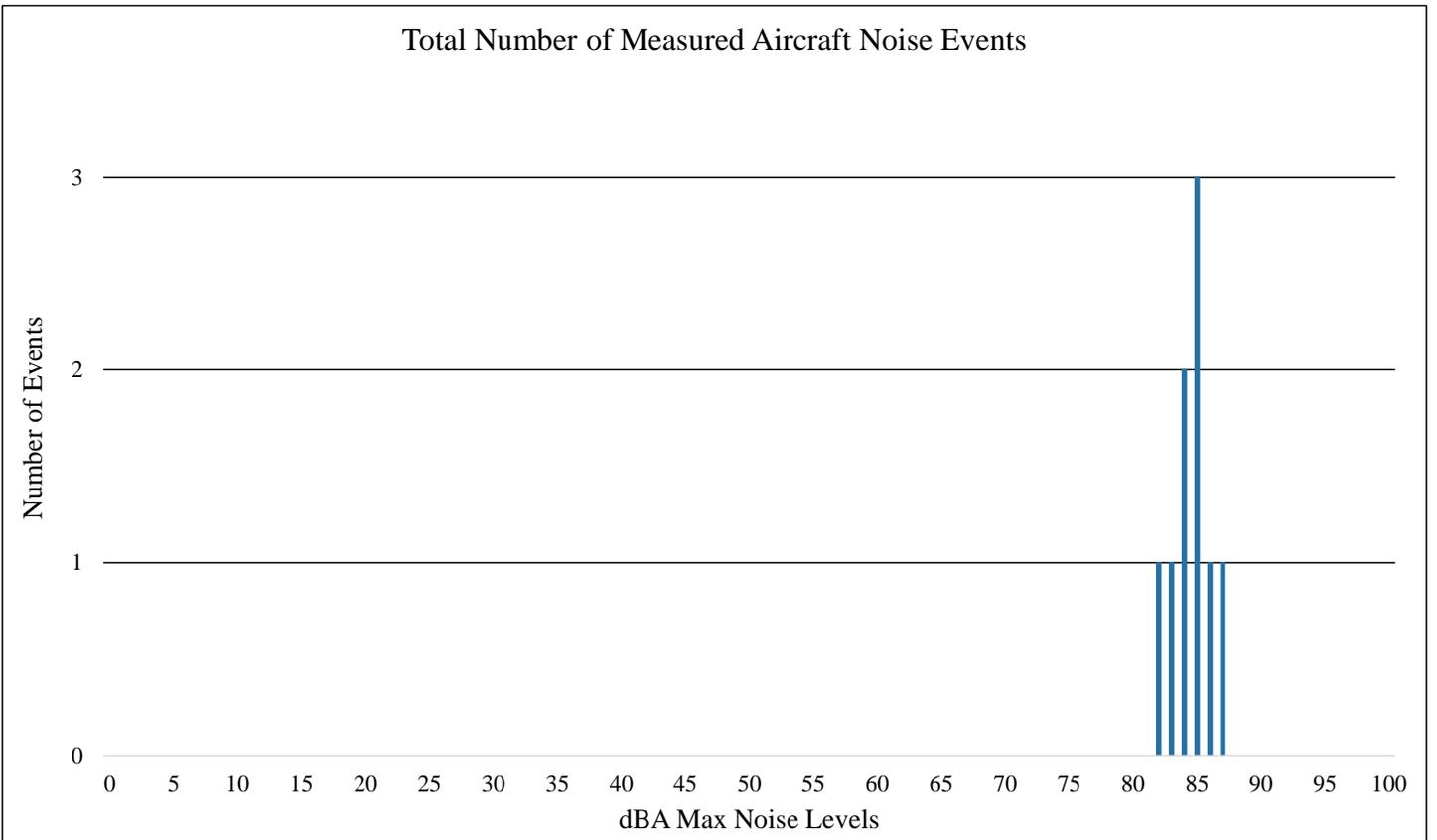
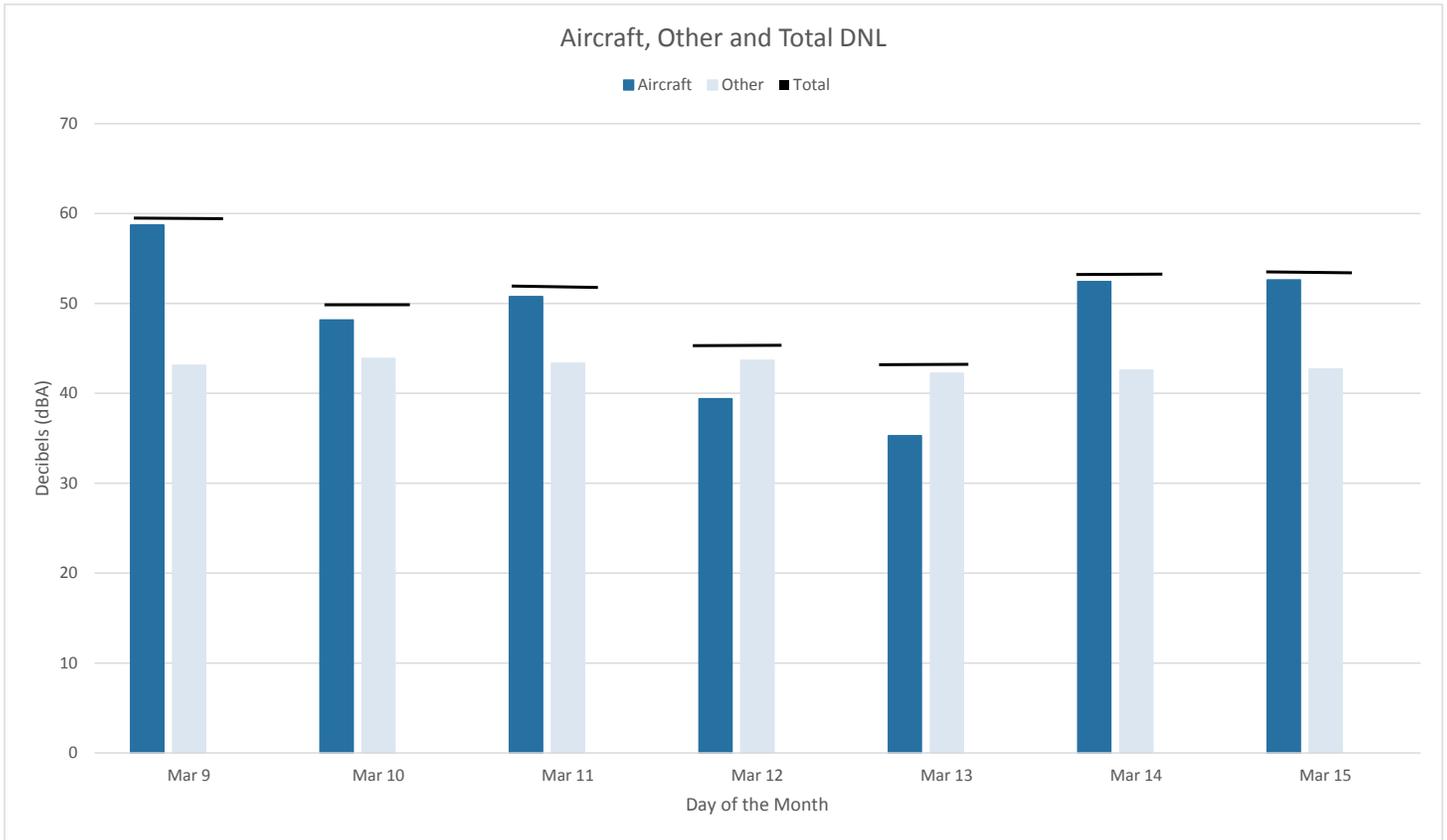


DNL Contribution and Lmax Distribution Results

Borough of Haines

Period: March 9, 2015 to March 15, 2015

Site: 2 - Home by Helipad

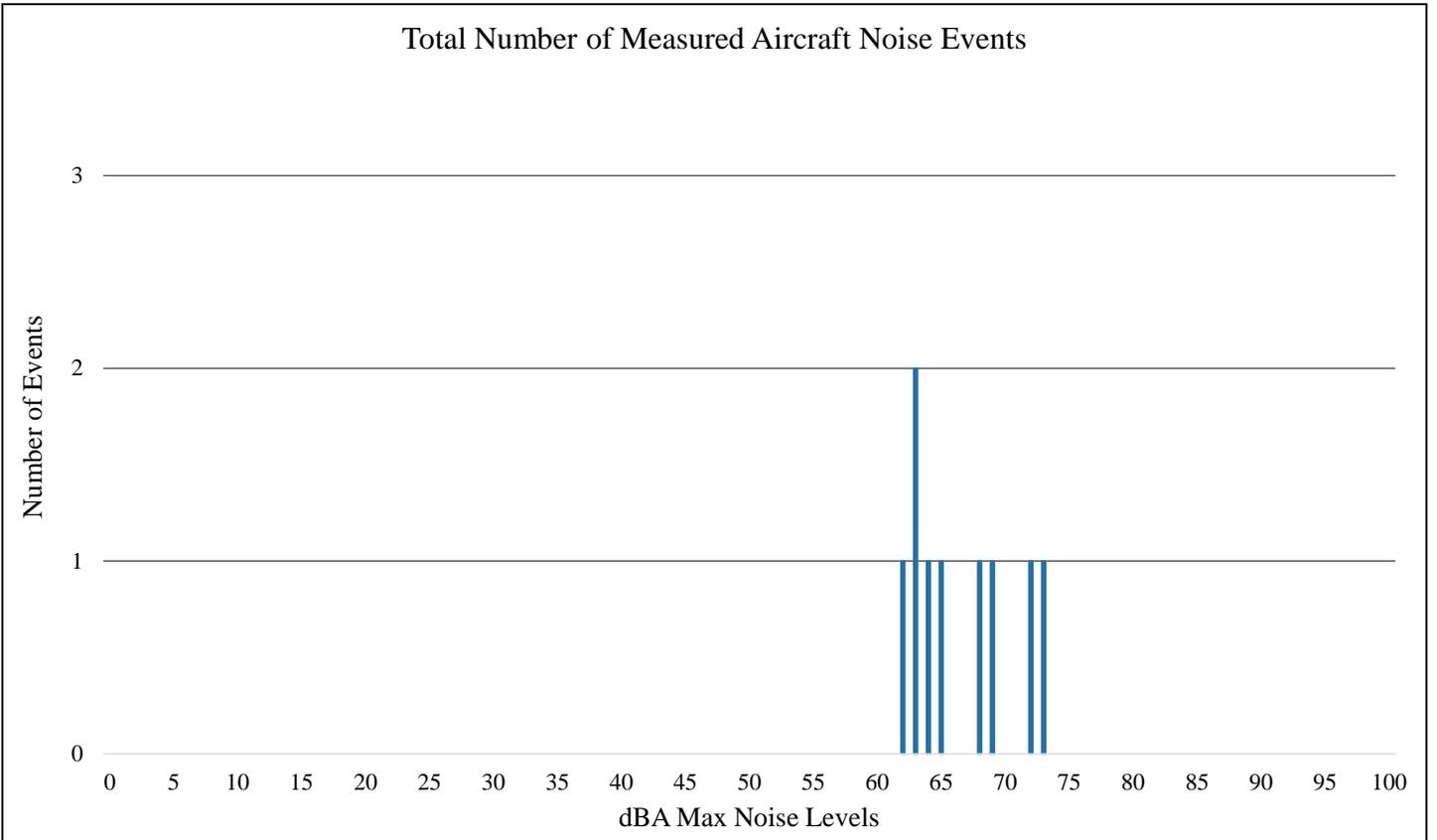
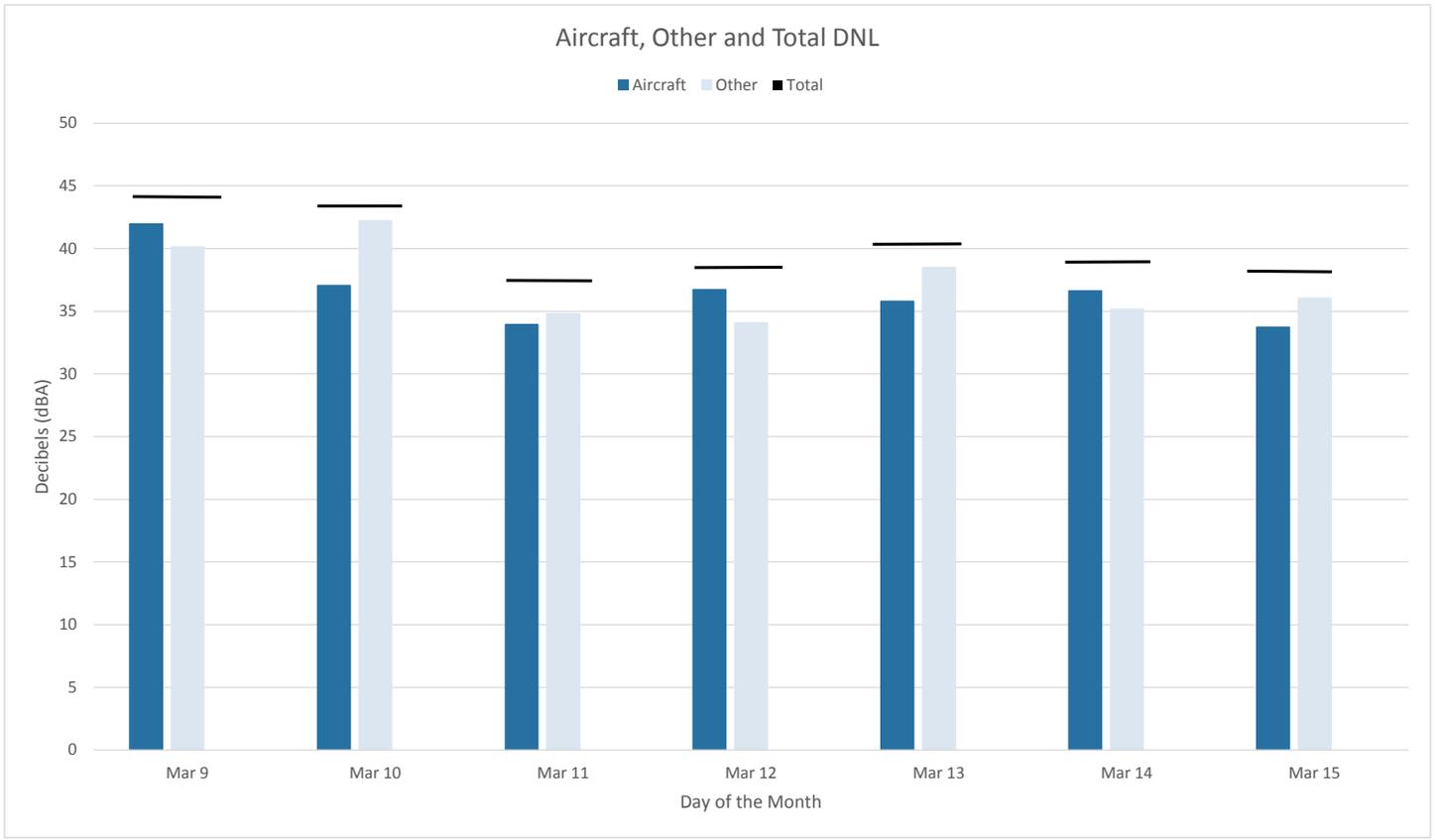


DNL Contribution and Lmax Distribution Results

Borough of Haines

Period: March 9, 2015 to March 15, 2015

Site: 3 - Roadway

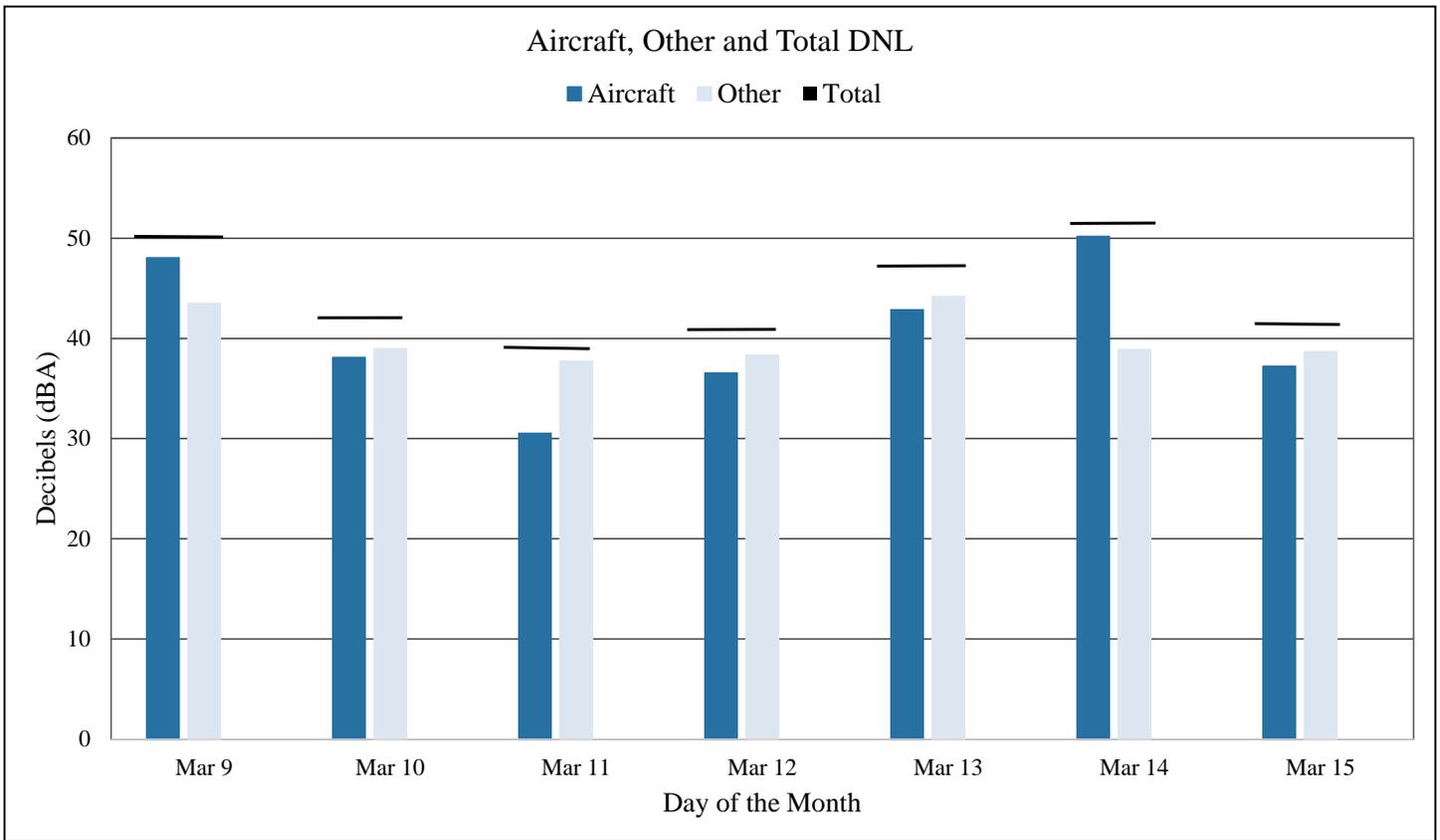


DNL Contribution and Lmax Distribution Results

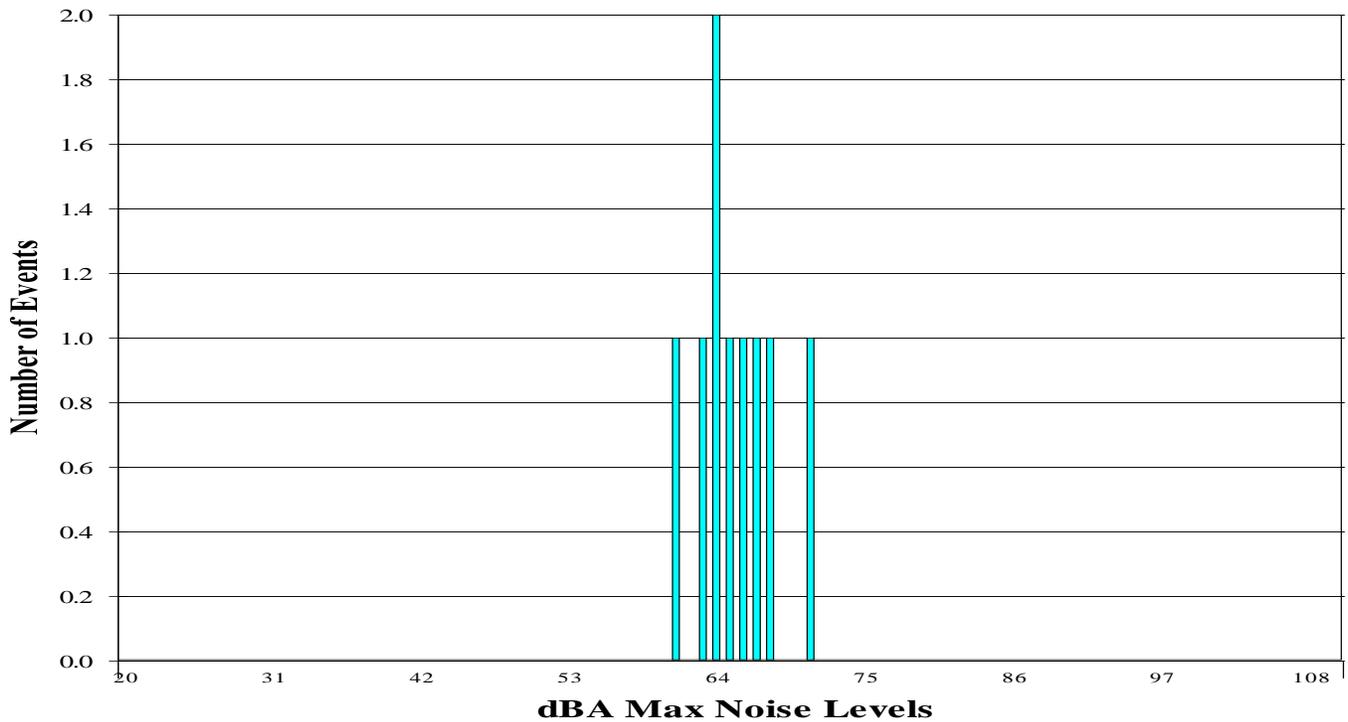
Borough of Haines

Period: March 9, 2015 to March 15, 2015

Site: 4 - Neighboring Estate



Total Number of Measured Aircraft Noise Events



APPENDIX C

Hourly LEQ Aircraft and Total Noise Data

Hourly Noise Level Site Report

Haines Borough

Period: March 9, 2015 to March 15, 2015

Site: 1 - Helipad

Metric: Aircraft LEQ

DATE	Hour Of The Day																							DNL	
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22		23
Mar 9	--	--	--	--	--	--	--	--	--	--	0	0	0	75	84	55	80	75	0	0	0	0	0	0	75
Mar 10	0	0	0	0	0	0	0	0	0	0	0	0	0	51	53	0	0	0	0	0	0	0	0	0	42
Mar 11	0	0	0	0	0	0	0	0	83	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	69
Mar 12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mar 13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mar 14	0	0	0	0	0	0	0	0	0	0	57	77	0	0	0	81	78	0	0	0	0	0	0	0	70
Mar 15	0	0	0	0	0	0	0	0	85	0	0	0	0	0	--	--	--	--	--	--	--	--	--	--	74
Energy Average	0	0	0	0	0	0	0	0	79	0	49	68	0	66	76	73	74	67	0	0	0	0	0	0	69

Metric: Total LEQ

DATE	Hour Of The Day																							DNL	
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22		23
Mar 9	--	--	--	--	--	--	--	--	--	--	59	37	35	75	84	55	80	75	42	27	25	25	27	24	75
Mar 10	24	31	38	26	23	22	22	32	30	69	34	30	33	54	53	42	26	30	50	24	24	26	24	25	55
Mar 11	23	24	25	26	24	23	24	42	83	44	39	33	34	35	31	43	31	30	25	23	23	22	23	24	69
Mar 12	24	24	24	23	22	21	21	26	25	22	29	28	24	56	38	24	30	29	22	21	19	20	21	22	42
Mar 13	20	25	30	27	33	36	27	39	41	43	46	32	35	34	39	44	35	33	32	25	24	25	24	24	40
Mar 14	25	24	24	23	23	23	27	45	34	58	58	77	44	34	35	81	78	31	26	23	23	23	24	23	70
Mar 15	23	23	24	24	24	24	26	42	85	35	38	35	32	41	--	--	--	--	--	--	--	--	--	--	74
Energy Average	24	26	32	25	27	29	25	41	79	61	53	68	37	66	76	73	74	67	43	24	23	24	24	24	69

Hourly Noise Level Site Report

Haines Borough

Period: March 9, 2015 to March 15, 2015

Site: 2 - Home by Helipad

Metric: Aircraft LEQ

DATE	Hour Of The Day																							DNL	
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22		23
Mar 9	--	--	--	--	--	--	--	--	--	--	--	0	0	56	67	58	64	60	0	0	0	0	0	0	59
Mar 10	0	0	0	0	0	0	0	0	0	0	0	0	0	58	42	0	0	0	0	0	0	0	0	0	44
Mar 11	0	0	0	0	0	0	0	0	64	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	51
Mar 12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mar 13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mar 14	0	0	0	0	0	0	0	0	0	0	55	62	0	0	0	61	60	0	0	0	0	0	0	0	52
Mar 15	0	0	0	0	0	0	0	0	64	0	0	0	0	0	0	--	--	--	--	--	--	--	--	--	53
Energy Average	0	0	0	0	0	0	0	0	60	0	47	53	0	52	59	55	58	52	0	0	0	0	0	0	51

Metric: Total LEQ

DATE	Hour Of The Day																							DNL	
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22		23
Mar 9	--	--	--	--	--	--	--	--	--	--	--	50	37	57	67	58	64	60	36	36	36	36	36	36	59
Mar 10	36	38	43	36	35	34	35	35	35	49	35	36	39	62	44	46	35	35	44	35	35	35	35	35	50
Mar 11	35	36	36	38	35	35	40	37	64	48	37	37	39	40	37	46	36	37	37	36	36	36	36	36	51
Mar 12	36	35	35	34	31	28	26	26	28	26	33	33	30	56	51	30	47	33	28	28	26	28	30	30	45
Mar 13	30	31	32	32	34	38	34	38	41	41	50	37	40	41	42	48	40	35	34	34	34	34	34	34	43
Mar 14	34	34	34	34	34	34	34	43	40	48	56	62	42	40	39	61	60	37	34	34	34	34	34	34	53
Mar 15	34	34	34	34	34	34	34	43	64	37	38	38	38	37	47	--	--	--	--	--	--	--	--	--	53
Energy Average	35	35	38	35	34	35	36	39	60	46	49	54	39	55	59	55	58	52	38	34	34	34	35	35	52

Hourly Noise Level Site Report

Haines Borough

Period: March 9, 2015 to March 15, 2015

Site: 3 - Roadway

Metric: Aircraft LEQ

DATE	Hour Of The Day																							DNL	
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22		23
Mar 9	--	--	--	--	--	--	--	--	--	--	--	0	0	27	46	31	37	34	0	0	0	0	0	0	36
Mar 10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mar 11	0	0	0	0	0	0	0	0	41	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	27
Mar 12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mar 13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mar 14	0	0	0	0	0	0	0	0	0	0	0	41	0	0	0	46	40	0	0	0	0	0	28	0	35
Mar 15	0	0	0	0	0	0	0	0	44	0	0	0	0	0	0	--	--	--	--	--	--	--	--	--	32
Energy Average	0	0	0	0	0	0	0	0	38	0	0	33	0	19	38	38	34	26	0	0	0	0	20	0	30

Metric: Total LEQ

DATE	Hour Of The Day																							DNL	
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22		23
Mar 9	--	--	--	--	--	--	--	--	--	--	--	53	36	38	47	43	41	38	35	30	34	23	26	24	44
Mar 10	20	31	44	30	23	23	24	31	33	47	49	30	28	38	44	44	33	27	39	33	35	25	27	24	43
Mar 11	19	24	21	21	19	19	36	35	42	44	30	31	35	37	36	42	23	31	36	35	32	17	20	24	37
Mar 12	25	22	24	19	18	18	19	22	24	45	50	25	28	32	42	24	28	24	29	33	19	18	18	22	39
Mar 13	17	20	22	22	26	28	28	45	44	48	39	43	46	37	41	41	35	31	30	27	36	31	19	19	40
Mar 14	19	19	19	19	19	19	30	34	35	47	38	43	33	31	36	48	41	36	19	29	29	27	30	18	39
Mar 15	19	19	26	27	20	20	26	29	45	34	37	41	36	35	43	--	--	--	--	--	--	--	--	--	38
Energy Average	21	25	37	25	22	23	30	38	41	46	46	46	39	36	43	43	37	33	34	32	33	26	26	22	41

Hourly Noise Level Site Report

Haines Borough

Period: March 9, 2015 to March 15, 2015

Site: 4 - Neighboring Estate

Metric: Aircraft LEQ

DATE	Hour Of The Day																							DNL	
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22		23
Mar 9	--	--	--	--	--	--	--	--	--	--	--	--	0	27	58	0	41	35	0	0	0	0	0	0	48
Mar 10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mar 11	0	0	0	0	0	0	0	0	43	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	29
Mar 12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mar 13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mar 14	0	0	0	0	0	0	0	0	0	0	42	61	0	0	0	49	39	61	0	0	0	0	0	0	50
Mar 15	0	0	0	0	0	0	0	0	46	0	0	0	0	0	0	--	--	--	--	--	--	--	--	--	35
Energy Average	0	0	0	0	0	0	0	0	40	0	34	53	0	18	50	41	35	53	0	0	0	0	0	0	43

Metric: Total LEQ

DATE	Hour Of The Day																							DNL	
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22		23
Mar 9	--	--	--	--	--	--	--	--	--	--	--	--	54	33	58	45	44	36	23	23	21	33	25	24	49
Mar 10	20	29	40	26	21	17	16	23	32	50	34	32	25	49	44	37	25	21	25	18	19	22	23	22	42
Mar 11	18	20	22	25	21	20	21	32	45	47	39	42	29	26	29	45	26	26	29	26	27	17	22	28	38
Mar 12	30	21	21	19	19	18	18	26	34	51	46	48	30	22	44	23	20	20	20	21	25	19	19	19	41
Mar 13	17	24	32	31	38	41	42	43	42	49	33	47	49	38	39	43	28	31	54	24	51	20	18	19	47
Mar 14	20	18	17	17	18	18	26	40	43	47	47	61	39	38	30	51	43	61	34	17	18	18	19	18	50
Mar 15	18	19	19	21	20	20	22	32	47	36	45	48	40	32	43	--	--	--	--	--	--	--	--	--	41
Energy Average	24	24	33	26	31	34	35	38	43	49	43	54	47	42	50	45	39	53	47	23	43	26	22	23	46

APPENDIX D

Public Comments

From: [Ady Milos](#)
To: [Julie Cozzi](#)
Subject: Correction to my noise study comments
Date: Friday, June 19, 2015 4:22:30 PM

Julie,

I was mistaken with my assertion that I lived near Site 4. Looking more closely at the aerial image, I realize I am actually located south of Site 3. Ms. Platchta resides southeast of Site 3.

Please attach this correction to my previous comments, with my apologies.

Thank you,
Ady Milos

From: [Ady Milos](#)
To: [Julie Cozzi](#)
Subject: 26 Mile Noise Study Comments
Date: Friday, June 19, 2015 10:48:05 AM

Julie,

I am glad this study was done. We now know, with scientific evidence, what most of us out here have thought all along. That Ms. Platchta's complaints are much to do about nothing. I live in the area the study designates as Site 4, "Neighboring Estate", alongside Site 3, "Roadway". I can barely hear the helicopters. Residents Jessica Platchta and her partner, Nicholas Szatkowski live farther into the "Neighboring Estate"; nowhere near testing Site 4, farther away than I am.

While I am glad for the study (and pleased that the Borough is asking for a dismissal), I am enraged that we Borough residents have to pay to defend such a frivolous claim. The Borough could be using the money used to defend this suit to FIX THE DAMNED CHILKAT LAKE ROAD! One would think the claimants would spend their energies on something much more worthwhile and necessary for the neighborhood (not to mention our vehicles' shocks!). They'd certainly get more support from their neighbors!

Maybe someone should explain to the claimants that Frivolous lawsuits are defined as "those filed by a party or attorney who is aware they are without merit, because of a lack of supporting legal argument or factual basis for the claims. Frivolous lawsuits waste time, money, and judicial resources, *and fines and/or sanctions may be imposed upon a party or their attorney for filing such a claim.*"

Just sayin'.....

Thanks for the opportunity to comment,

Ady Milos

From: [Weishahn](#)
To: [Julie Cozzi](#)
Cc: [David Sosa](#); [Janhill](#); [Dave Berry](#); [George Campbell](#); [Thecases](#); [Joanne Waterman](#); [Diana Lapham](#); [Ron Jackson](#)
Subject: Comments on Helicopter Noise Study
Date: Friday, June 26, 2015 4:21:30 PM
Attachments: [Helicopter Noise Study, Comments, 6-26-15.docx](#)

Hello Julie,

Please find my comments on the draft helicopter noise study attached.

Thank you,

Carolyn Weishahn

June 26, 2015

Comments re the Helicopter Noise Study

Due to the highly technical nature of this report, I suggest that after the study consultants present the webcast as described in “Task 4 -- Presentation of Results” of the study contract, the borough have another comment period. There are bound to be further comments in response to the webcast.

There are several things to keep in mind about this noise study.

First, the study often uses the 65 DNL metric, however it clearly states that the site DNLs can't be directly compared to the FAA 65 DNL significance threshold:

For this Study, the measured DNL from the sites above cannot be directly compared to the 65 DNL significance threshold because the annual average was not modeled using Integrated Noise Model. However, the measured average levels at the three sites during the study period (outside of the helipad itself) are generally below what measurements would be expected at the significant 65 DNL or higher level.

Second, even if the study had modeled an annual DNL average using the Integrated Noise Model, the FAA make it clear that the 65 DNL threshold for residential land use is not intended to substitute federal guidelines for local planning for noise compatible land uses. In other words, while the feds use one set of guidelines, each local community determines its own noise compatible land uses.

http://www.faa.gov/airports/environmental/environmental_desk_ref/media/desk_ref_chap17.pdf

14 CFR Part 150 land use compatibility guidelines. FAA established land use compatibility guidelines relative to certain DNL noise levels in 14 Code of Federal Regulations (CFR) Part 150. Chapter 5, Table 1 of this Desk Reference provides a copy of the Part 150 Land Use Compatibility guidelines.

(1) Different local land use compatibility standards. Although residential land uses are considered compatible with noise exposure levels below DNL 65 dB under 14 CFR Part 150:

“The responsibility for determining the acceptable and permissible land uses ...rests with the local authorities...Part 150 is not intended to substitute federally determined land uses for those determined to be appropriate by local authorities in response to locally determined needs and values in achieving noise compatible land uses. “ -14 CFR Part 150, Table 1.

~~~~~

This study uses the A-weighting scale (dBA) which does not completely characterize helicopter sound. Since the A-weighting scale eliminates low and high frequency sounds, the FAA has questioned its use for assessing helicopter sound which has a low-frequency component. As the

FAA points out in the document below, another weighting scale, the C-weighting scale, is useful for measuring wall vibration energies that can occur from helicopter noise.

[http://www.faa.gov/regulations\\_policies/policy\\_guidance/envir\\_policy/media/04nov-30-rtc.pdf](http://www.faa.gov/regulations_policies/policy_guidance/envir_policy/media/04nov-30-rtc.pdf)

### 3.5.3 Is A-weighting the optimum weighting for assessing helicopter sound?

As discussed above, there is some evidence that the A-weighting metric may not fully characterize human reactions to noise events with substantial low-frequency content.

.....

The C-weighting has been used in the United States for almost 30 years to assess blast noise and sonic booms in order to account for the noise-induced rattles generated by these sounds, and currently, several other countries also use the C-weighting for this purpose. It is primarily the sound energies in the 10 to 30 Hz ranges that induce wall vibrations. The C-weighting could be used to identify those helicopter sound energies that will induce wall vibrations.

.....

Helicopters, with their distinctive sound character, appeared to be more noticeable than other sounds for the same A-weighted sound exposure level.

.....

As discussed in “effects on individuals” (Section 3), there are multiple noise metrics utilized to assess noise (EPNL, ASEL, DNL, etc). However, civil helicopter annoyance assessments utilize the same acoustic methodology adopted for airplanes with no distinction for helicopter’s unique noise character. **As a result, the annoyance of unaccustomed, impulsive helicopter noise has not been fully substantiated by a well-correlated metric. The FAA favors the chartering a technical effort to focus on low-frequency noise metric to evaluate helicopter annoyance.** (emphasis added)

~~~~~

Another sound component of helicopter noise that this study does not include is helicopter ‘blade slap.’

One issue that this study does confirm is that the neighborhood where SEABA wants to put a heliport is a **very quiet neighborhood.** (at L90, dBA measures at the 4 sites: 21.8, 29.9, 17.5, and 16.9)

Another issue is that while SEABA reported 4 heliski user days for March 9, data was collected on other days as well during the study. Were these helicopter flights taken while “fully loaded” as required by the study contract? Were the landings and take-off made in compliance with permit flight requirements to obtain elevation as quickly as possible? Residents have reported that the flights were conducted at very low elevations.

I feel that the use of this study as a basis for changing the way the borough assesses heliport impacts in any particular neighborhood is not appropriate due to the lack of confidence in DNL when evaluating helicopter noise and the incomplete nature of calculating the DNL in this study.

Please notify me when the webcast by the contracted company will be available. Again, I feel another comment period is necessary after the public has had a chance to view the webcast.

Sincerely,

Carolyn Weishahn

From: [Weishahn](#)
To: [David Sosa](#)
Cc: [Julie Cozzi](#)
Subject: Re: Noise Study Contract
Date: Monday, June 22, 2015 1:46:28 PM
Attachments: [doc10760520150619171917.pdf](#)

Hello David,

I notice in the noise study report that Task 4, Presentations of Results, will be accomplished by a Webcast. Do you know when that will occur? Will it be interactive so that questions may be asked during the Webcast? Will it be available to the public as well as borough officials?

Thank you for checking on this part of the noise study process.

Cary Weishahn

On 2015-06-19 16:03, David Sosa wrote:

Documents as requested

-----Original Message-----
From: System Administrator
Sent: Friday, June 19, 2015 4:19 PM
To: David Sosa
Subject: Scan from AdminKyocera

Taskalfa 5500i

From: [Carol Tuynman](#)
To: [David Sosa](#)
Cc: [Julie Cozzi](#)
Subject: Noise Study comments due June 26, 2015
Date: Friday, June 26, 2015 3:59:20 PM

Dear David,

I am submitting comments as the creative director of Alaska Arts Confluence. My comments are in reference to the cultural norms and social/political background related to helicopter presence in Haines.

Before the 26 Mile heliport was permitted, there was general consensus that the airport is the appropriate location for helicopter take off and landing and that a heliport at 26 Mile would become a noise issue for residents in that area. Despite knowledge of this problem and considerable public objection from people outside of the study area, the heliport was permitted and went into operation. The Borough's unwillingness to find a resolution of the helipad location that would satisfactorily address the public concern has led to the challenge to the 26 Mile helipad.

The study uses standards and assumptions generally not appropriate to the Chilkat Valley. The level of noise people become accustomed to is a factor of conditioning. For example, the noise created by chainsaws is an accepted part of our culture. Chainsaws are used to cut down trees to provide firewood necessary for heating many of our homes. People here accept higher noise levels that relate to our daily lives. A number of years past the Haines Borough voted not to allow helicopter sightseeing tours during the summer tourism season when they saw how intrusive and disruptive the helicopter tours were in Juneau. Helicopter flights for hell skiing by the existing tour operators would be acceptable and appropriate if they used the airport and stayed within the designated flight paths.

We value our natural environment and the general quiet of a rural community. Although it is a small number of people who are negatively affected by the helicopter paths evaluated in the study, those residents should have the benefit of the same protection from helicopter noise that was established by the Borough.

The noise study, though scientific by FAA standards for the rest of the country is not appropriate for the Haines Borough. Regularly scheduled airplanes and helicopters should originate only from the Haines Airport, where the noise levels of helicopters would be totally within acceptable noise levels.

Please enter my comments into the record for public comment on the Noise Study, 2015.

Sincerely,
Carol Tuynman
Creative Director
Alaska Arts Confluence
Post Office Box 1664
Haines, Alaska 99827
907.303.0222

From: [Derek Poinsette](#)
To: [Julie Cozzi](#); [Ron Jackson](#); [Joanne Waterman](#); [Mike Case](#); [Jan Hill](#); [George Campbell](#); [Diana Lapham](#); [Dave Berry](#); [David Sosa](#)
Cc: sunny@seaba-heli.com
Subject: Helicopter Noise Study
Date: Saturday, June 20, 2015 10:53:26 AM

Haines Borough Assembly and Administration:

I live on Mosquito Lake Road. I have read the results of the helicopter noise study, and I have some specific comments.

The ambient noise level of the general neighborhood was measured at ~21 dBA (L50 from Table 4-1). This is a level of sound that is less than bird song. The sound of a helicopter measured at the most DISTANT measuring location ("neighboring estate") registered at 90 dBA, equivalent to a DC-10 take-off. At the helipad itself, measurements exceeded 104 dBA (Lmax from Table 4-1). To the human ear, 90 dBA is 128 times louder than 20 dBA. In actuality, 90 dB is 10 million times 20 dB. That's not how it sounds to us, but it may very well sound that way to other creatures.

The study computed the ambient average daily noise level (DNL) in the neighborhood and found it to be 30 to 51 DNL, including the helicopter activity. The SEABA property came in at 69 DNL. The FAA classifies "wilderness residential" as 35 DNL. "Urban row housing on a major avenue" is 68 DNL.

So, we can conclude from this study that the addition of a heliport to the neighborhood moves the character of the place from "wilderness residential", past "rural residential", past "agricultural land", on past "wooded residential" and "old urban residential", all the way up to "urban row housing on a major avenue".

No one who has invested time, money, sweat and tears building a home up here ever thought that one day the Upper Valley was going to have sound characteristics similar to those of downtown Chicago. My place is exactly two miles from the SEABA heliport as the crow flies (according to Google Earth). There is a small mountain between us (Ski Hill), and yet I can hear, as plain as if we were next-door neighbors, all of the helicopter activities that occur there. I don't know exactly how loud it is, but it is loud enough to be heard through hearing protection and over the noise of my wood shop equipment. And it is much louder than the DOT chip sealing that is going on right now just 3/4-mile away.

This is a very quiet place up here; unlike the lower valley, we don't even have wind noise on most days. When you add something like regular helicopter activity into this environment, it completely changes the character of the place--from wilderness to urban row housing. And now we have the numbers to prove it.

Sincerely,

Derek Poinsette
Mosquito Lake
Box 555
Haines, AK 99827
767-5414

poinsette.ak@gmail.com

CC: Scott Sundberg

From: [george figdor](#)
To: [Julie Cozzi](#)
Subject: comments on helicopter noise study
Date: Friday, June 26, 2015 4:04:29 PM

RE: Comments on 26-mile helicopter noise study

The deadline is fast approaching, so i just wanted to get these brief comments to you before that. i have read some of the research from various places in the U.S. concerning the impact of helicopter noise on local residents. Several interesting points seem to emerge in many of the studies.

1. The concern over impacts of helicopter noise is not just a local one in the Chilkat Valley. Throughout the nation, nearby resident are quite frequently opposed to helicopter activities near their homes. And generally residents are passionate about wanting to end the disturbance.
2. Helicopter noises are perceived to be noisier than their decibel reading. In other words, the unique quality of the noise makes it result in the same perceived disturbance as a noise with higher decibel reading. So, many studies argue that in some ways one can't measure the impact helicopter noise with a meter.
3. The nature of helicopter noise has been shown to have a wide range of health impacts---particularly among young children. This can include brain and emotional damage. Thus helicopter activities must be evaluated in public health terms as well as the usual parameters. And these health impacts occur even when the activity is not regular. In fact, the stress caused by unpredictable nature of certain activies often caused greater health impacts related to stress.
4. The emerging consensus seems to be that residential areas and helicopter traffic do not mix well, and that helicopter traffic is most often best located in places where people do not live---liket in commercial airport areas.

George Figdor
Box 612
Haines, AK

From: [Gretchen Roffler](#)
To: [Julie Cozzi](#)
Subject: comments noise study
Date: Friday, June 26, 2015 9:32:47 AM

Dear Ms. Cozzi and the Borough of Haines,

I appreciate that the Borough has taken into consideration the collection of sound data to help inform a decision about SEABA's proposed CUP. It appears the Mead and Hunt team have done an adequate job; however the sampling data are sparse, and likely not remotely representative of the noise that would be experienced during a normal heli ski operating period.

I was dismayed by the poor interpretation of the noise data in this study. The DNL is a worthless noise metric as it unrealistically averages noise over a 24 hour period. The logic behind relying on this metric is flawed. Instead of accounting for the helicopter SEL and the number of takeoff and landing events, it actually merely washes them out over a longer period of time to devalue the numbers. Additionally, because these helicopters do not operate after civil twilight and before dawn, factoring in nighttime noise levels is a meaningless exercise. The DNL may be the FAA standard for residential noise assessment, and it might be convenient to use these values because they portray lower noise volumes, but I would hope that the Haines Borough would maintain higher standards than this.

Evaluating the values of the SEL and Lmax metrics, we can see that the noise disturbance caused by helicopters is in fact very high for all the recording sites, particularly those that are closest to the proposed heli pad, exceeding recommended levels for residential zones. These are the values that should be taken into the highest consideration, and not the 24 hour mean.

It is also important to consider that the actual time of very loud SEL and Lmax (and by default DNL) would be extended considerably during a normal heli ski day. There would be landings and takeoffs of multiple helicopters continuously throughout the day, in addition to lengthy refueling time. This study does not accurately capture this level of disturbance that would be present in a realistic operating scenario.

At the heart of the issue is promotion of one business over the residential way of life in the neighborhood. We purchased our property (adjacent to the proposed SEABA helipad) because we wanted to have a quiet place to occupy in a peaceful neighborhood. SEABA did not disclose their intention to build a helipad at the time of the land transfer. I am not opposed in any way to heli skiing (I have partaken in this activity), but I am opposed to landing helicopters in a residential neighborhood. The justification for supporting this plan by the Borough relies on faulty logic that it will promote economic development for the community. Consider that keeping heli skiers within Haines proper (at SEABA's current lodging at Ft. Seward) actually provides more of an economic pulse to businesses in the community than containing them in our neighborhood, where there is nowhere to spend money. If SEABA develops this land and builds an "all inclusive" heli ski lodge the clients will only be supporting one business, and not all of the stores and restaurants in Haines. See Cordova's Points North as an example of how to *not* create a sustainable business that benefits the greater community. This is not the model that Haines should want to follow.

I hope that you consider these comments in the decision process. There should be a way that heli skiing can flourish in Haines and benefit the majority of the community economically (not just the owners of one business) while at the same time allowing residents to maintain a peaceful way of life. Please consider creation of a helipad outside of residential neighborhoods (through land transfers or otherwise), or promotion of the multitude of heli pads that already currently exist.

Thank you for your consideration,
Gretchen Roffler

From: [Heidi Robichaud](#)
To: [Julie Cozzi](#)
Subject: noise study report
Date: Thursday, June 18, 2015 11:22:54 AM

To the Borough Clerk,

I am shocked and disappointed by not only the outrageous expenditure of borough funds on a helicopter noise study but also by the unhelpful, convoluted and almost irrelevant results of this study. The only meaningful things established by the report are that the neighborhood surrounding the proposed heliport is normally extremely quiet, and that the helicopters are really loud. (Appendix A. Sound Exposure Levels during the test period range from a (loud) low at the furthest test site of 69.5 dBA to a (painfully loud) high of 120.9 dBA at the nearest.)

Ironically, because of the way DNL was figured, the quieter the ambient noise of the neighborhood, the lower the DNL, even though the helicopter noise remains at the same level, very loud. A 2011 FAA technical report contained the following caution, "DNL has another major practical limitation. It doesn't work particularly well as a predictor of aircraft noise impacts."

Using DNL as its justification, the Haines Noise Report asserts that if you take a very quiet place and add a very loud noise for a relatively short period of time, you get a moderately quiet place, when actually, what you get is a very quiet place with a very loud thing in it. If someone bonks you on the head really hard in the morning, and then refrains from bonking your head for the rest of the day, did they actually just touch you gently the whole time? Obviously not.

Additionally, the study did not test the noise levels during regular operations that would include easily 90 landings or even more (2 helis per day, all day, times 6 days). So the average sound (DNL) would have been be enormously higher had a realistic scenario been studied. We should find it disturbing that professional sound consultants we paid about \$45,000, would make conclusions about the appropriateness of a particular development under conditions like this, where they clearly don't have measurements reflecting the actual level of use likely to occur with the establishment of a heliport there.

Even with the dampening effects of A-weighting, the noise levels measured ranged from 77.4 to 104.3 dBA. All of these noise levels are above reference ranges for

residential noise standards, standards preserving healthy hearing, and national and international standards protecting public health. (See Anchorage municipal codes, EPA Noise Control Act of 1972, and World Health Organization Guidelines for Community Noise.)

I urge the borough to file this report, write off the outrageous expenditure and listen to the concerns of the residents of the area.

Most respectfully,

Heidi Robichaud

From: [bearded pigeon](#)
To: [Julie Cozzi](#)
Subject: noise report comment
Date: Friday, June 26, 2015 3:56:04 PM

I am a resident in the area of the **SEABA** noise report. I find the data in this report inconclusive and more data would need to be recorded to get a full understanding of the noise levels in the area. I also find this study a political tool for the validation of one companies agenda. if any laws are passed or permits given based on the data in this report it would be insulting to those that would like to continue to live and enjoy a quiet existence.

Thanks for hearing my comment,
Josh Grimm

From: [John Norton](#)
To: [Julie Cozzi](#)
Subject: Fw: Noise Study comments
Date: Friday, June 26, 2015 6:31:24 PM
Attachments: [w\Emoticon-smilef11.png](#)
[Helicopter noise study 2015.doc](#)

From: [John Norton](#)
Sent: Friday, June 26, 2015 11:17 AM
To: jcozzi@haines.ak.us
Subject: Noise Study comments

Hi Julie, Finally; a rainy day so I can get some correspondence taken care of 😊. I've attached a few comments regarding the Noise Study that I'd appreciate you forwarding to the appropriate staff. Cheers, John Norton

Borough Staff and Assembly Members,

Thank you for the extended comment period of the 2015 Noise Study. I believe that the Lmax measurements are the most important metric in the discussion of allowing the development of a heliport in the Chilkat Lake Road area. The Lmax represents the loudest sound experienced during an event and in my opinion should form the foundation for deciding the impact of noise in that area. If my reading of that document is correct it appears that noise levels of 90dBA or greater occurred during helicopter flights in the monitored area.. These noise levels are categorized as "Very Loud" and I believe that this metric is key to understanding the concerns that the local homeowners have brought to the Borough. I am in agreement that this level of aircraft noise, in an area that is attractive to residential homeowners due to it's quiet, rural character, is inappropriate.

I agree with comments made by others that the DNL metric is not helpful in this discussion as the DNL averages over a 24 hour period a small number of loud events within an area that is normally very quiet. This is especially inappropriate where darkness precludes aircraft flights to less than half of that 24 hour period. To use the DNL figures to base ones decision would misapply that metric which is more appropriately applied to noise from a busy freeway, industrial site or large airport. An analogy would be to average the fatal burns received in the flash fire from fuel thrown into the woodstove with the pleasant warmth of the slowly burning fire over 24 hours. It is the single event that is useful in guiding our behavior, not the averaged data.

To conclude, I would like to suggest that the appropriate staff and Assembly members take a few minutes to experience 90+dBA sound levels during discussion of this issue. It may be as simple as bringing a boom-box into the assembly chambers and turing the volume to full . That simple exercise would be very helpful in understanding why local homeowners are so opposed to the development of a heliport near their homes. Thank you for your consideration.

Regards, John Norton
Haines, AK

From: [Joe Ordonez](#)
To: [Julie Cozzi](#)
Subject: comments on noise study
Date: Thursday, June 25, 2015 10:15:25 PM

Greetings,

I have looked over the noise study. It was rather technical and not easy reading for me. I have a college degree, and I'm not sure what percentage of our community has post-secondary education. Perhaps in the future, when the Borough hires an outside firm to perform a technical study, part of the contract should be for the firm to host a public presentation where they explain the methodology and the results. An informed public should be the goal.

One thing I noticed is that the noise study indicates that the ambient noise level is at the low end of the scale for a 'wooded area.' That is what people live there and who moved there are used to, and have come to expect. Even with the helicopter activity, the average noise level was low. With an average of 51 being the norm for wooded areas, and the noise level in the study area being 30-51, this tells me that this is a quiet neighborhood. So introducing a noisy activity into that type of environment would be particularly intrusive.

Also, to use averaging to try to describe the impact of noise events is misleading. One serious noise event can ruin some people's entire day, and setting up a helipad with multiple take-offs and landing on a daily basis is sure to change the character of the neighborhood. And the study was only for 9 "operations" over a six-day period. How does this compare to the number of "operations" allowed if this was to become a true base of operations for SEABA and how would that compare with the data collected? I do not see that information in the study but it is a critical piece of information. Was it included somewhere but I missed it?

I also note that they have said there is no "noise standard" for the Haines Borough. Without setting a standard, there is no way to decide whether or not this noise level is excessive. For us to accept the FAA standard without public discussion and involvement would not be fair nor wise. We have a history of preferring to make our own decision as a community when possible, rather than allowing the federal government to decide what our standards should be.

The reason conditional use permits were required and strict criteria set in place for helicopter landing pads is because helicopter activity can have a profound negative affect on local residents. Putting a helicopter pad in a quiet area is not a good idea. We have an airport for noisy air activity, and that is one of the designated landing places for helicopters. There are three other dedicated areas for helicopter use.....the airport, 18 mile and 33 mile. I also understand that helicopters are taking off from the Big Nugget mine in Porcupine, even though it is not one of the designated areas but has been somehow "grandfathered" in. These are places that people moving into the area can expect will have helicopter noise and activity.

I am worried about the precedent that allowing a helicopter pad in a quiet neighborhood will set. If the conclusions gleaned from this study are that helicopter noise is a "nonissue," as one of our Assembly members was quoted in the CVN, what is to stop helipads from turning up all over the Borough? Certainly it makes

sense from the economic standpoint of a helicopter tour operator to have their lodge and heliport on their private property. There are presently three helicopter ski companies in Haines, and no limit on the potential number of companies allowed to operate. If SEABA gets permission to put a helipad at their lodge, they will have a competitive advantage over the other two operators. The logical next step will be for the other two operators to build helipads on their private property and so we will have more helipads in the Borough. The original intent of requiring a conditional use permit for helipads was to limit their proliferation in the borough and contain their growth. Certainly, there is some point where we would have too many heliports in our valley. Many of our citizens believe we have already reached that point.

I am also concerned about SEABA's involvement with the study. SEABA has a documented history of not following rules that they have agreed upon. How do we know that they followed the rules for this study? How much of the information for this study was provided by them and how do we know if it is accurate? How do we know that they will follow the rules in the future? How many Borough resources will need to be utilized to keep track of whether or not they are following the rules, and what sort of penalties will they receive when/if they are caught breaking the rules? And will these penalties be serious enough to ensure that they follow the rules in the future? These are serious questions which I have been asking since I was on the Helicopter Advisory committee in 2011 and they have never been adequately addressed.

Another serious concern I have is the allegation that the flights used in the study were flown at an elevation of 200 feet above ground level. It says in the newspaper that these allegations were dismissed as "unsubstantiated." I would hope that there is accurate GPS data from the 9 flight operations that took place during the study. If this information was not recorded or is not available to the public, then the results of the study are at best, inconclusive, and, at worst, seriously flawed. For what we paid, I would think that the citizens have a right to know if this allegation is true or not. The elevation of the flight has a significant effect on the noise signature.

I am open-minded and hope to hear more from the Borough about the study and how the results planned to be used. I recommend that we consider this study preliminary and proceed with extreme caution before we base any sort of planning or policy decisions on this dubious exercise.

Sincerely and thanks,

Joe Ordonez

--

Joe Ordonez

Rainbow Glacier Adventures LLC

P.O. Box 1103

Haines, Alaska 99827

Phone: [907-766-3576](tel:907-766-3576)

Fax: [907-766-3580](tel:907-766-3580)

joe@joeordonez.com

www.tourhaines.com

From: [Joy and Pete Paquet](#)
To: [Julie Cozzi](#)
Cc: [Joy and Pete Paquet](#)
Subject: Attention Borough Clerk, Re: Comments Regarding Haines Noise Study Report
Date: Friday, June 19, 2015 7:09:05 AM

To: Haines Borough

Did we really need to spend 52K to conclude Helicopters are loud on both take-offs and landings? How much taxpayer money is still being spent on Borough Attorney fees defending a Conditional Use permit appeal?

The Plaintiff in the CUP appeal has more expertise and knowledge , of what the base noise level of the Chilkat Lake Road area is than the FAA? Interesting.

This isn't about noise or Helicopters, Heli-Pads, or a Ski Lodge. Nor is this about the lovely quiet rural life style some of us have here.

This is about a couple of people trying to force their life style choices on their peaceful , hard working and quiet neighbors, and it will never stop. They will never be happy, or satisfied until we all live under a pile of brush. More frivolous lawsuits, more petitions , more complaint forms. More time spent from the Assembly to the Planning Commission, and the Borough staff wasting countless hours, defending itself.

Thanks for the opportunity to comment on this
Regards,

Maria Paquet,
Eagle Bluff Drive

From: [Jessica Meadow](#)
To: [Julie Cozzi](#); [Nicholas Szatkowski](#)
Subject: Noise Comments
Date: Friday, June 26, 2015 3:34:25 PM
Attachments: [PlachtaNoiseComments2015.pdf](#)

Hi Julie,

My comments on the Draft Haines Noise Report are attached.

Thanks,

Jessica Plachta

Comments re. Draft Haines Noise Report 2014

Jessica Plachta
HC 60 Box 2621
Haines, AK 99827
jessica.meadow@gmail.com

While there are a few useful data sets contained within the Draft Haines Noise Report, its assumptions, methodology and conclusions are mostly problematic to the point of being inoperable. Some of these problems are not the fault of Mead and Hunt, but derive from the actions of the commercial heliski operator, Southeast Alaska Backcountry Adventures, (SEABA). Some of the problems derive from the difficulties inherent in attempting to apply an urban (public airport) equation to a rural (wilderness residential) setting. And still others of the problems may derive from factors unknown to this commenter.

Problems with Methodology:**Insufficient Data**

Nine flights is an overwhelmingly insufficient amount of data from which to draw conclusions, especially since-- according to SEABA's biweekly flight operations report-- the 4 flights on the first day of the study were the only flights that were actually part of their commercial tour operations. Nine flights over the course of seven days are being used to calculate the expected impacts of a heliport at the site. The data has been misused. What should be calculated is the sonic impact of two to four helicopters using the site constantly from the hours of 8 am to 6 pm, for three months. With that amount of use, the sound of helicopters almost never goes away.

Inaccurate Data

Even the data recorded from the nine flights aren't representative of lawful commercial tour operations from the site. SEABA was observed consistently and dramatically violating their flight rules, by skimming the treetops between the CUPLZ and mountaintops. This further skewed the results of the noise study by altering the profile and duration of each helicopter noise event. Sound Exposure Levels, LEQs, and DNLs are all highly related to the duration of noise events. SEABA's unlawful flight behavior corrupted the results of the study by artificially curtailing the duration and intensity of noise detected by the measuring devices.

Missing "Raw" Data, 1/3 Octave Data

The contract Mead and Hunt signed with the Haines Borough says that they will "include unweighted, "raw" sound data measured in decibels." The Draft Report includes only A-weighted (dB(A)) sound data. The official contract between Mead and Hunt and the Haines Borough also specified that they would include "1/3 octave sound level measurements at each location from which noise levels are measured and such ratings will be included in a standard sound measurement report." Presumably, the 1/3 octave sound measurements would show us what frequencies are emitted by the helicopter, and what percentage of the total noise is low-frequency noise. This information might be useful, but has not been provided by the Consultant. Mead and Hunt contracted to prepare the following metrics: DNL, SEL, LMAX, and Time Above," using the FAA's Integrated Noise Model. This also was not done.

Omitting the raw, unweighted data might be considered an breach of contract with the citizens of the Haines Borough, who payed for the Noise Study. Omitting the raw data is especially egregious when Mead and Hunt acknowledge that A-weighting carves off as much as 50 decibels from the decibel number of low-frequency sounds, because its purpose is to de-emphasize the impact of low-frequency sound. Helicopters obviously make abundant low frequency sound. The World Health Organization says that low-frequency sound emitters should be effectively penalized for their additional health and annoyance effects by adding decibels, not subtracting them.

Low frequency sound has particular effects on structures, human health and stress disorders, birds and wildlife, and has even been developed into a tool for fighting fire. Low frequency noise, aimed at the base of a fire, can extinguish the flame. Conducting a noise study which specifically excludes measuring the particular effects of low frequency sound, when assessing the impacts of a low frequency noise emitter like a helicopter, is

simply inadequate, ultimately misleading, and cannot be considered authoritative.

Problems with Assumptions/Sources for Information:

The Draft Noise Report claims that, "There are no local noise standards in effect, so in comparison, the only federal standard for noise and land use compatibility is from the Federal Aviation Administration. This standard is based on the DNL, which identifies the acceptability of various types of land use with aircraft noise exposure. Under this standard:

Residential uses are compatible with noise up to 65 DNL and up to 70 DNL with sound insulation; "

In fact, "**The FAA does not regulate aircraft noise**," according to Ian Gregor, the public affairs manager for the Pacific region of the FAA. "If a noise complaint involved an allegation that an aircraft was flying improperly low or unsafely, we would investigate the safety component of that complaint." Furthermore, the FAA plays absolutely no role in local planning decisions regarding questions of compatibility with residential uses. The 65DNL standard is an averaged noise level that the FAA believes is compatible with areas surrounding urban airports, and has no relevance whatsoever in rural Alaska. Mead and Hunt's suggestion that this would be an appropriate standard here undermines their credibility and professionalism, and begs the question, "Are they impartially gathering data, or are they preparing a report to suit the boss?"

Meanwhile, there are **other federal agencies that have generated standards for noise** and land use compatibility, such as the EPA, which is charged with protecting public health. Congress adopted the **Noise Control Act of 1972**, which set out much stricter guidelines than those recommended by the FAA. This federal law indicates for rural residential areas a standard of 35-45 dB.

Mead and Hunt could have looked closer to home for guidance. Other municipalities in Alaska do have noise regulations. The **city of Anchorage has noise regulations** prohibiting noise of 60 dB or greater from crossing residential property lines. Allowing a heliport at this site would regularly submit the nearest neighbors to sonic impacts that are more than 100 times greater than those allowed in urban Anchorage! Obviously, this constitutes "undue noise."

The city of Los Angeles has even more protective noise regulations. In residential areas of that city, sounds above 50 dB during day and 45 dB during night are unlawful. The more than 100 private properties within the mile radius around SEABA's heliport would be subjected to sound levels between 50 and 100 decibels--all levels that would be unlawful in urban Los Angeles.

Let's remember now that **70 dB is 10 times louder than 60 dB, and that 80 dB is 100 times louder. 100 dB is 1000 times louder than 70 decibels**, while 70 dB will already cause hearing loss. No one should be subjected to that kind of noise in their own homes, on their own private properties, against their will, and for no appreciable benefit.

In 1979, the **EPA's "Noise Effects Handbook"** implicated noise in a number of health problems, including strokes, ulcers, heart disease and high blood pressure, as well as other stress-related disorders and mental health issues. International health organizations have recognized extensive effects of noise on human health. The **World Health Organization** has determined that, besides hearing loss, noise can cause loss of concentration, cognitive and behavioral problems, and stress disorders, especially in children and other sensitive populations.

Problems with Conclusions:

DNL:

Mead and Hunt erroneously diluted (via misapplication of DNL metrics) the extremely loud helicopter noise impact with the ambient neighborhood quiet, rather than merely impartially reporting the contrast, as they should

have done.

"Undue Noise:"

Haines Borough law instructs the PC to determine whether a CUP applicant has proven an absence of undue noise on neighboring properties. No part of the HBC suggests that an "average" (more accurately a dilution) of impacts at locations arbitrarily chosen by Borough administration can be used as a substitute for the standards outlined in HBC.

It is the job of the Haines Borough Planning Commission and affected citizens to determine whether the noise is "undue," not the job of a hired consultant. It seems inappropriate for a technical sound consultant to draw conclusions regarding what level of noise impact should be considered acceptable in a community. Furthermore, Hunt et. al.'s suggestion that the FAA's standard of 65 decibels for communities surrounding (primarily urban) airports should be applied in a quiet residential area in rural Alaska is downright ludicrous.

Useful Components of the Noise Report:

Despite the significant problems marring the usability of the Haines Noise Report, there are some refreshingly simple truths reflected therein. One, the background noise in **the neighborhood is inarguably quiet.** Quieter than any category available in the Consultant's charts. This simple fact should lay to rest forever the false assertion that this neighborhood is somehow a pre-existing industrial area that is already so loud that helicopters won't be noticed above the din of all the other industrial activities. There are, in fact, no other industrial activities in the neighborhood. The other undeniable fact is that **helicopters are extremely loud;** represented in the Noise Study by the Lmax numbers. Despite the reduction imposed by A-weighting, the numbers show that **the heliport would not be allowed** in any municipality that has noise regulations, nor would it be allowed by national or international regulatory bodies. The development of a heavy industrial activity like a commercial heliport is not compatible with a "wilderness residential" area, and is not excused in any way by the \$42,000 spent on this report. The Haines Borough should make a note to listen to its citizens next time a question like this comes up, and save itself some dough.

Conclusion:

Haines Borough Code 18.30.010 specifies under "Finding," "A permit approval shall include a written finding that the proposed use can occur consistent with the comprehensive plan, harmoniously with other activities allowed in the zone and **will not disrupt the character of the neighborhood.**"

Regardless of how much of the taxpayer's money the Haines Borough spends on outside studies, the proposed use **cannot comply with Borough code.** A heliport in this neighborhood is not consistent with the Comprehensive Plan, it cannot coexist harmoniously with other activities allowed in this zone, and it will absolutely disrupt the character of the neighborhood. The heliport was unlawfully allowed by the Haines Borough Assembly, and unlawfully operated by SEABA. This is why there has been **consistent, vigorous, widespread opposition to allowing the heliport,** and there will continue to be opposition until the issue is put to rest.

From: [Kip Kermoian](#)
To: [David Sosa](#)
Cc: [Julie Cozzi](#)
Subject: Draft Haines Noise Study comments
Date: Friday, June 26, 2015 4:15:42 PM
Attachments: [K. Kermoian draft Haines Noise Study comments 62615.doc](#)

Dr. Mr. Sosa,

Please find my comments regarding the Draft Haines Noise Study comments attached.

Thank you,

Kip

Kip Kermoian
PO Box 1024
Haines, AK
99827

June, 26, 2015

Mr. D. Sosa
Manager
Haines Borough

Re: Helicopter noise study

Dear Mr. Sosa,

I am assuming that you feel strongly about the integrity of all of those serving in the borough while conducting borough business and support the precept that personal biases should be put aside when, in this instance, a scientific study has been commissioned to objectively assess impacts to residents living adjacent to the proposed helicopter operation at .6 mile Chilkat Lake Rd. It is, after all, what each of us rely upon if a democracy is to function effectively.

If my above assertion is accurate, the results of the noise study do not accurately reflect their intended purpose, but rather, serve to support an obvious bias.

Who in the borough administration responded to Jessica Plachta and Nicholas Szatkowski's confirmed allegation - using GPS data of the helicopter test flights – that the helicopters were “flying at less than 200 feet above ground level during most of the 16-mile roundtrip between the helipad and a drop-off point.” (Source: Chilkat Valley News, Thursday, June 18, 2015), which is contrary to the borough's flight operation agreement requiring helicopters to “attain as quickly as practicable after takeoff and maintain a minimum elevation of 1,500 feet above ground level while in flight”, characterizing their concern as “unsubstantiated allegations”?

If the GPS data is confirmed to be accurate, this assessment by the borough administration mitigates the purpose of the noise study and casts doubt on not only the findings, as the results do not accurately reflect noise levels should helicopters abide by the borough's agreed upon flight standards, but raises the question of unethical bias within the borough administration.

To base any assessment of the impacts of this impending noise upon residents that will permanently and negatively impact the quality of their lives, on a manipulated methodology, only serves to disenfranchise all those who have contributed to this process in good faith.

I hope that you will conduct a fair assessment of the methodology, and insist that only an accurate measure of real impacts be used to support a position on this issue by the borough.

Sincerely,
Kip Kermoian

From: [Kathleen Menke](#)
To: [Julie Cozzi](#)
Subject: Comments on Noise Study Report
Date: Tuesday, June 23, 2015 9:38:00 AM

Regarding the Borough's noise study report:

Grade: F

The Borough lost its way when public officials who are supposed to serve the folks who live here decided to ignore those very people they have sworn to serve.

A midnight reconsideration of a vote after the public had left a Borough meeting?

Stating that public comments on the rezoning for of a residential neighborhood for a commercial heliport were not given "much consideration"?

By making back-room deals with any business entity that walks in the manager's door while treating the general public as if their comments do not matter?

By spending thousands to "justify" a poor decision with a meaningless report?

By thinking that a measurement of decibels has anything to do with the constant intrusion that a heliport represents over others living within a neighborhood?

The Borough would be just as wise to do a decibel study on a tent full of mosquitoes, rather than ask those in the tent whether or not the mosquitoes were interfering with the peace and quiet of their lives.

Borough public officials need to take a giant step backwoods and remember the public that they have sworn to serve. Develop of system whereby folks can listen to each other and share ideas before plunging forward with plans that do not have community support.

It will take some practice, but we can do it..listen to each other and work together toward common goals and a healthy, sustainable community that serves all its residents.

Regards, Kathleen Menke

From: [lauren](#)
To: [Julie Cozzi](#)
Subject: Comments on the Haines Noise Report
Date: Friday, June 26, 2015 3:31:57 PM

Hello,

I have just read the results of the noise report and deem it somewhat irrelevant to the decision at hand; whether or not to grant SEABA permission to use their property as a heliport. Helicopters are loud, obnoxiously loud. This report hints at this when discussing the single noise events i.e. SEL and Lmax, but really misses the mark when using the DEL metrics to measure an average noise increase over a 24 hour period. You can not average a noise, especially a loud relatively short noise over a 24 hour period. It doesn't make sense to me and I consider the findings here a moot point, a very expensive moot point in my opinion. The numbers here are based on nine flights over 5 days. Even if one were to use the DEL metric system the results here do not indicate a normal day of flying for SEABA. I have heard, that at least 9 (that is the whole data set for a week used in this report) flights would leave and return to the SEABA property per day. The average or DNL is not only the wrong metrics to be using to determine if helicopters are annoying and disruptive, but the results were created based on low number of flights per day which is also does not accurately reflect what will occur here.

Another point I would like to note is we are using federal averages to as a baseline comparison however we, as residents of a small community in rural Alaska are in no way close to being comparable to federal regulations. It seems to me that most live here, especially out the highway, to be as far away from the normal standards of living especially to those living in the lower 48. I understand the federal averages are being used for lack of anything better, but do they accurately reflect the reality of living at 26 mile? I would not think so.

As a resident and property owner in the proposed heliport neighborhood, I do not want to be hearing a helicopters two months out of the year- a especially quiet and peaceful time of the year. Aside from myself and my neighborhood, I would strongly urge you to question whether this is a good move for our community as a whole. Granting things such as this heliport in our residential neighborhood will create hostile feelings towards our seasonal visitors. This I gaurentee. There are other places already in use as heli-ports that are not in the middle of neighborhoods. Why not use those? Would you permit this activity to happen in town? It is already louder there, perhaps no one would notice? I would guess not.

Thank you for your time and patience dealing with such a heated issue.
Lauren McPhun

From: [Nicholas Szatkowski](#)
To: [Julie Cozzi](#); [David Sosa](#); [jessica meadow](#)
Subject: Noise Report comments
Date: Friday, June 26, 2015 4:56:42 PM
Attachments: [Szatkowski Noise Report Comments, 26Jun2015.pdf](#)

Hello Haines Borough Administration-

I have included my comments as an attachment in the preferred pdf format. However, I have also copied the same comments into the text of this email below.

Thanks for reading them!

The only really meaningful things established by the report are that our neighborhood is normally extremely quiet, and that the helicopters are really loud. The report authors included lots of graphs and text that recalculate and refigure this basic information in ways that hide the basic facts.

Report's methodology invalid

The only metrics in the report which are relevant to our situation in planning Heliport sites in the Haines Borough are "single event metrics" because they are the only representation of the real volume of helicopters experienced in the neighborhood. Single event metrics (Lmax, and SEL) simply report actual recorded sound volume. Very simple, easy to understand, and provide accurate reflections of actual noise events. This is the only measurement of sound that is appropriate for comparing noise impacts of specific loud events in the context of a quieter background noise environment. The SEL graphs are mostly detailed in Appendix A. Sound Exposure Levels during the test period range from a (loud) low at the furthest test site of 69.5 dBA to a (painfully loud) high of 120.9 dBA at the nearest. (SELs combine the recorded Lmax with the duration of the sound event into a single metric, to offer a single number representing total noise impact of an event).

By contrast, "cumulative" (i.e., averaged) metrics become very convoluted. They involve sometimes complicated formulae which average the sound of a single event with other, unrelated sounds or background sound. Therefore, metrics such as LEQ (hourly averages) and DNL (daily averages) give a distorted view of actual noise events. For example, during one hour with background sound of 35 dBA, a helicopter might refuel, for 5-10 minutes, causing sound of 83 dBA. The LEQ would average these out, using a complicated formula, and end up with a number around 50-60 dBA. But the sound of the helicopter is not 55 dBA, it's actually 83 dBA. The metric called DNL is even further off-base in our particular situation, as it averages the helicopter sounds (which of course still occur at the same volume) with the quiet background sound level of the entire day and night, over 24 hours. This is why the report can say that at the adjacent property, the DNL was the very moderate sounding 51 dBA, even though the Lmax of the helicopter was consistently recorded at 82-87 dBA (SELs. This comparatively low number is not the result of the quietness of the helicopter, but rather the result of the quiet background noise level. In other words, the quieter the ambient noise of the neighborhood, the lower the DNL, even though the helicopter noise is just as loud as it is in a loud location. The DNL metric is therefore especially inappropriate for determining the impact of loud sounds within quiet environments, because quieter locations will have lower DNLs, falsely masking the true volume of the loud sound events. A 2011 FAA technical report contained the following caution, "**DNL has another major practical limitation. It doesn't work particularly well as a predictor of aircraft noise impacts.**"

http://www.faa.gov/about/office_org/headquarters_offices/apl/research/science_integrated_modeling/noise_impacts/media/6-14-2011_FinalReport_MetricsMestre_etal_061411_part1.pdf

Using DNL as its justification, the noise report is attempting to assert that if you take a very quiet place and add a very loud noise for a relatively short period of time, you get a moderately quiet place, when actually, what you get is a very quiet place with a very loud thing in it.

No matter how quiet it was when you got up and had breakfast, when the loud helicopter sound occurs, you experience it at its volume at that moment. In fact, the quieter the background is, the MORE disruptive loud sounds are, because they are so out of place, and they shatter the peace that otherwise prevails.

Additionally, even if DNL were to be used, it could only have any possible meaning if the number of helicopter landings during the test period were exactly the same as they would be in a real situation. SEABA landed at the site 9 times during the entire week of the noise test. And according to SEABA's own biweekly operations/skier day report, only the 4 landings on March 9th were actually transporting skiers to the mountains, reflecting actual conditions of a real heliski operations base. In regular operations that number could easily be 90 landings or even more (2 helis per day, all day, times 7 days). So the average sound (DNL) would be enormously higher. But of course we don't have that actual number. Therefore the Noise Study's data set isn't reflective of the very thing it was supposed to measure. Again, **all averaged metrics (LEQs and DNLs) in the report are invalid, because they aren't based on conditions equivalent to real operations at the site, but rather on a minimized sample of helicopter traffic.**

Also, the study's recording of actual sound measurements was skewed for the following reasons:

-all of SEABA's flights using the 26-mile helipad skimmed the treetops on approach and departure, without even attempting to reach the elevations (minimum 1500' AGL in all cases, and 2640' AGL above valley floors) required under their existing Borough permit. Their failure to abide by this requirement was reported to the Borough multiple times, and the administration labeled the reports as "unsubstantiated allegations" even though the GPS data showed the citizen reports to be accurate. Flying in this manner very significantly changed that sound signature of the helicopters during the noise test period, so that only the Corona property (adjacent to SEABA) experienced sound levels that would occur if the helicopters flew in accordance with the requirements of the tour permit.

This means that only the data recorded at that location ("home by helipad") has relatively accurate readings. (We don't know if the noise recording equipment was located inside or outside the Corona cabin, which would make an obvious difference in recorded noise levels. If the decibel recorder was actually inside the cabin, then even those data are invalidly decreased, because property rights apply at owners' property lines, not just inside our homes or cabins). **This is yet another reason the results of the study do not reflect the actuality of lawful, regular operations of a commercial heliport at the site.**

-The FAA uses a very specific metric for measuring helicopter sounds, called Effective Perceived Noise Level (EPNL). The study didn't use this metric approved and used by the FAA. The report authors not only failed to explain why, but they also failed to even mention knowledge of EPNLs.

-the entire study used ONLY the "A-weighted" decibel scale, rather than recording the actual volumes as raw data. The A-weighted system is a curve that subtracts more and more from actual recorded dB as frequency decreases. From very low frequencies, as much as 50dB would be subtracted from the actual dB level that truly occurred (see page 9 of the report). This weighting scale was created to attempt to emphasize sounds in the mid-frequency range that are more clearly heard by most people. But it distorts the actual record of the true volume of sound pressure. The report states that "most community noise analyses are based upon the A-weighted decibel scale". However, it is not appropriate for measuring low-frequency sound emitters, such as helicopters. A thorough, professional account of A-weighting scales would acknowledge that, in fact, there has been much questioning and criticism of A-weighting for measuring sources of low-frequency sounds such as those emitted by helicopters. The contract required Mead and Hunt to provide raw-data for helicopter noise measurements. They failed to meet this term of their contract, and only included the A-weighted numbers.

Conclusions Invalid and Unprofessional

The report falsely claims that the only standard available for comparison is the FAA's promotion of 65 dBA as a threshold for areas surrounding urban airports. This contention is wildly inaccurate, and undermines the credibility of the report

Even in urban Anchorage, noise regulations do not allow noise levels above 60 dB from crossing property lines in residential areas. (Because of the logarithmic nature of the decibel scale, 70 dB is 10 times higher than 60 dB. **80 dB is 100 times the sound pressure as 60 dB**). **Allowing a heliport at this site would be imposing noise onto neighboring properties that is 100's of times louder than would be allowed in urban Anchorage.**

*The WHO recommends the following guidelines, recognizing the following related health concerns:

For outdoor living areas, a 55 dB noise level will result in "serious annoyance". 50 dB will result in "moderate annoyance," daytime and evening.

For indoor dwellings, for speech intelligibility, noise levels should not exceed 35 dB.

For sleep disturbance, 30 dB background; 45 dB is expected to wake, or otherwise disturb, a sleeping person.

In outdoor parklands and conservation areas, "existing quiet outdoor areas should be preserved and the ratio of intruding noise to natural background sound should be kept low."

... "For indoor environments, reverberation time is also an important factor. If the noise includes a large proportion of low frequency components, still lower guideline values should be applied."

The Haines Noise Report neighborhood ambient noise measurements show an extremely quiet background noise level, between 16 and 29 decibels. That's quieter than any category they have in their charts. Quieter than "Wilderness Residential," at 35 decibels, vastly quieter than 51 dB "Wooded Residential," which they attempt to characterize this neighborhood as being, and dramatically quieter than the 65 dBA level that is being proposed as a standard for our neighborhood. The report authors suggest that a drastic elevation in neighborhood decibel levels is appropriate, without any supporting evidence whatsoever for why this is acceptable on a social or municipal planning level. The Federal Noise Control Act of 1972 recognizes detrimental impacts of increasing neighborhood noise, and says that an increase of 20 dB *"will result in widespread, vigorous public opposition."*

Even with the dampening effects of A-weighting, the maximum noise levels measured during the study period ranged from 77.4 to 104.3 dBA at the four sites. All of these noise levels are above reference ranges for residential noise standards, standards preserving healthy hearing, and national and international standards protecting public health. (See Anchorage municipal codes, EPA Noise Control Act of 1972, and World Health Organization Guidelines for Community Noise.)

The Haines Noise Report concludes with a DNL metric, (mis)calculated by *averaging the excessively loud helicopter noise events with the extremely low ambient noise levels*. The study failed to use EPNLs, and the report fails even to acknowledge existence of this metric, the FAA's preferred and best metric for measuring helicopter sounds. The report's authors admit that they failed to use the FAA's Integrated Noise Modeling, which was another requirement of the contract they signed and were paid for. This model is the method used and approved by the FAA by which to arrive at a DNL. Nonetheless, having failed to use the modeling system approved by the FAA, Mead and Hunt make assertions about the expected noise levels in the neighborhood, at surrounding properties. However, they are using a sample time period during which SEABA was flying unlawfully, hiding their "cone of sound" from the noise monitoring stations. They are also using a preposterously small number of flight events to arrive at their DNL.

The Haines Borough was warned not to waste our public funds to pay an outside consultant for something that does not return meaningful value to the public. Measurements of ambient background versus helicopter sound levels could have been obtained for a small fraction of the price paid to Mead and Hunt. Most of the expense went to their analysis and production of a "cooked-book" report which appears to be using obfuscatory jargon and graphs to make it look like a very loud sound is somehow, impossibly, rather quiet. I wonder who in our Borough might have suggested that angle to Mead and Hunt.

sincerely,
Nicholas Szatkowski
26-mile
Chilkat Valley, Alaska

From: [Nancy Berland](#)
To: [Julie Cozzi](#)
Subject: Noise study comments
Date: Friday, June 26, 2015 9:09:09 AM
Attachments: [NBHeliNoiseComments.doc](#)
[Effects of Airport Noise on Housing Value.doc](#)

Julie, please accept these comments.

Thanks.

Nancy

In looking over the Noise Study and looking at the cited FAR Part 150, it's apparent that the contractor used a methodology designed for different circumstances. Basically the Noise Study concluded that the DNL measured at 4 Haines sites met the FAR Part 150 acceptable noise "standard" for residential areas near airports, with a DNL less than 65 dBA.

That FAR Part 150 applies to **existing airports** is extremely clear: it "is the primary Federal regulation guiding and controlling planning for aviation noise compatibility **on and around airports.**" (Emphasis added.) The 26 Mile site is not an airport. Airports have more than 9 noise events over a 7-day period. All the fancy colored charts, graphs and tables generated by these 9 noise events and presented in the Haines study have no context, and are absolutely meaningless.

DNL is the average sound pressure level in A-weighted decibels for an average day of the year. According to FAR Part 150, this methodology works for assessing airport noise because it takes into account the effects of intensity, duration, frequency, and time of occurrence of aviation noise events, as measured against the background noise of the area. This average is used to determine compatibility at existing airports operating 365 days per year, and often 24 hours a day. Obviously there are many aviation noise events to be averaged at airports, and this is a way of ascertaining how much additional noise is created by the airport. However, the DNL for the Haines study includes only 9 noise events, that lasted a maximum total of 38 minutes (at the non-helipad sites) over a 7 day period. The impact of these 9 events becomes totally diluted in the calculated DNL by the low background noise levels at these sites for the rest of the 144 hours of the study. In other words, the DNL calculated for these sites consists of 99.66% background noise and .44% helicopter noise. What the charts and graphs really show is that this is a quiet, rural residential neighborhood that will be greatly impacted by allowing a heliport there.

Of more significance is the information (Figure 2-2) that an increase of 10 dB is humanly perceived as being twice as loud, an increase of 20 dB is perceived as 4 times as loud, an increase of 30 dB is perceived as 8 times as loud, an increase of 40 dB is perceived as 16 times as loud and an increase of 50 dB is perceived as 32 times as loud, and so on. Table 4-1 shows ambient noise levels are between 17 and 30 dBA 90% of the time, with noise events ranging from 77 to 94 dBA at non-heliport sites. This means a person at one of these three measured sites would hear an increase from 47 to 77 dB from normal background noise, per event. Using the information presented, this means a resident would experience noise events that were between 16 and 128 times as loud as normal. To say the least, this would be disruptive in the extreme. This certainly could be considered a "taking" of a person's right to the quiet enjoyment of their property. (Attached please find information regarding how property values decline near airports.) In this regard there is ample literature available (from the US Forest Service and even NASA) concerning the "annoyance" component of helicopter generated noise, and ample information regarding health impacts such as increased stress levels. Unfortunately, none of this information made it into the Noise Study.

FAR Part 150 explains the purpose of a Noise Exposure Map, which requires identifying present and future noise patterns. This is obviously important for airport planning. While 9 events does not create a pattern, the concept that there may be significantly more than 9 events per each 7 day period in the future is neither considered nor analyzed in the Haines report.

It must be said that DNL methodology used in this report could be used to justify citing a heliport just about anywhere in the Borough, perhaps even next door to where you live. Municipalities confine aviation noise to one or two airports for a reason. The three existing heliports are already excessive considering the amount of helicopter use.

The Haines Noise Study is further deficient in that it does not state if the events measured occurred underneath flight paths, which would affect the amount of noise recorded at each site. Also Nicholas mentioned in the CVN that the flight logs (not available on the Borough web site) indicated the helicopters were flying at 200 feet AGL. If this is indeed the case, 14 CFR Part 135 was violated, as it requires a 300 foot minimum AGL.

The Haines Borough has wasted an incredible amount of time, energy, and money on this issue. The Planning Commission decision to deny a permit should be upheld.

Thank you for the opportunity to comment.

Nancy Berland

AVIATION NOISE LAW

Airport Noise and Residential Property Value

Effects of Airport Noise on Housing Value

In 1994 the consulting firm of Booz-Allen & Hamilton, Inc. prepared a report titled *The Effect of Airport Noise on Housing Values: A Summary Report for the Federal Aviation Administration*. The report describes a methodology for evaluating the impact of noise on housing values. The methodology essentially compares market prices in similar neighborhoods that differ only in the level of airport-related noise. In pilot studies using this method, Booz-Allen found that the effect of noise on prices was highest in moderately priced and expensive neighborhoods. In two paired moderately priced neighborhoods north of Los Angeles International Airport, the study found "an average 18.6 percent higher property value in the quiet neighborhood, or 1.33 percent per dB of additional quiet." (See Bibliography: Impacts of Noise on Property Value.)

A 1996 study funded by the Legislature of the State of Washington used a somewhat similar methodology and found that the proposed expansion of Seattle-Tacoma Airport would cost five nearby cities \$500 million in property values and \$22 million in real-estate tax revenue. The study of single-family homes -- all in "very good" condition, with three or more bedrooms and two or more baths, and excluding the most expensive and inexpensive units to provide more representative comparisons -- found that "a housing unit in the immediate vicinity of the airport would sell for 10.1 percent more -- if it were located elsewhere."

The Washington study also concluded: "all other things remaining equal, the value of a house and lot increases by about 3.4% for every quarter of a mile the house is farther away from being directly underneath the flight track of departing/approaching jet aircraft." (Details can be found in Sections 9.01 - 9.07 of the study.)

In 1997 Randall Bell, MAI, Certified General Real Estate Appraiser, licensed real estate broker, and instructor for the Appraisal Institute, provided the results of his own professional analysis to the Orange County Board of Supervisors. Comparing sales of 190 comparable properties over six months in communities near Los Angeles International Airport, John Wayne Airport, and Ontario Airport, Bell found a diminution in value due to airport proximity averaging 27.4 percent. (See the full report.) Bell has also developed a list of over 200 conditions that impact real estate values -- airport proximity is categorized as a "detrimental condition."

Disclosure of Airport Noise to Buyers

California law requires sellers to reveal noise and other nuisance factors in a Real Estate Transfer Disclosure Statement prior to sale, permitting prospective buyers to look elsewhere or to lower their offers.

As of January 1, 2004, residential property owners in California are required, under certain circumstances, to disclose to prospective buyers that the property is in the "vicinity" of an airport (Assembly Bill 2776, 2002). (See AB 2776.)

Avigation Easements

Airports can acquire avigation easements in the airspace over neighboring properties in order to (1) prevent construction of buildings and towers, planting of trees, installation of lighting, or any other development that might interfere with aircraft takeoff and landing, or (2) protect against liability for any nuisance caused by airplanes using the airport, i.e., the impact of noise, fumes, and vibration on the "use and enjoyment" of properties under the flight paths to and from the airport. The former is a type of "hazard easement" while the latter is a type of "nuisance easement" but in practice both are called avigation easements. The two types are not typically combined in one legal document, although they may be.

Airports rarely take the trouble to acquire nuisance avigation easements by initiating condemnation proceedings. The nuisance easements are sometimes imposed on new developments near an airport, but only if the airport owner (a city or county) also has jurisdiction over the land surrounding the airport. An airport may also require a nuisance avigation easement as a condition for installing insulation against noise in homes and schools. When sued for nuisance by neighboring landowners, airports assert that they have a prescriptive avigation easement over the plaintiff's land and therefore are not liable for any nuisance due to aircraft noise, fumes, or vibration. In theory a prescriptive avigation easement is acquired by simply flying over the property for a number of years (the number set by state law to perfect a claim for adverse possession). However, only California courts have come close to recognizing avigation easements acquired by prescription (see link below to discussion of prescriptive avigation easements).

If the provisions of the easement are written broadly, the easement could preclude the property owner from successfully suing the airport for maintaining a nuisance (such as noise, air pollution, or airport lighting). For example, the easement might contain language that grants the airport the right to create noise, dust, vibration, fumes, etc. from aircraft presently using the airport as well as any future aircraft at the airport. If at the time the easement was granted the airport was used only by small, propeller-driven planes, but now a variety of helicopters fly in and out of the airport, the property owner would have difficulty arguing that the airport had exceeded its rights under the easement.

Avigation easements are recorded in the county recorder's office and show up in a title search. Like most easements, they are binding on any future owners of the property. See the following:

California Public Utilities Code section 21652 (statutory authority for avigation easements)

Sample avigation easements: California sample, FAA model

Prescriptive Avigation Easements

"Avigation Easements, and Lawsuits for Inverse Condemnation and for Nuisance" by
Ronald D. Steinbach, Attorney at Law (California)

[Revised Nov. 13, 2004]

From: [Sally Boisvert](#)
To: [Julie Cozzi](#); [David Sosa](#)
Subject: Our comments on the recently published Noise Measurement Study
Date: Thursday, June 25, 2015 10:20:40 PM
Attachments: [Noise Study Comments Rafe and Sally.docx](#)

Hello Julie and David,

I hope you are well.

Please find attached the comments that Rafe and I wish to submit in regards to the recent Noise Measurement Study.

Julie, could you confirm receipt when you get our comments tomorrow? Thank you!

-Sally and Rafe

Sally Boisvert & Raphael McGuire
P.O. Box 578
Haines, AK 99827
(907) 767-5515

June 25, 2015

Hullo,

We are writing to share our opinion on the recently published helicopter noise report. It appears to us the most relevant part of the study was the measurement of how loud it was during the moments a helicopter was passing, which was extremely loud. The report indicated that averaged over an entire day, it wasn't that loud, at least not compared to a neighborhood near a commercial jetport. This is entirely irrelevant. How disruptive something is should be measured while it is occurring, not over an arbitrary extended time frame.

We have both worked around helicopters and it is distinctly obvious that they are incredibly loud and disruptive. This study measured the noise of a small number of flights and compared it to an average lower 48 neighborhood, whereas the reality is a very quiet and peaceful remote rural neighborhood being overrun by a much higher daily number of flights. Furthermore, the noise of a helicopter depends partly on how it is operated. Since the company operating the flights during this study has a strong interest in the outcome, they presumably flew to minimize noise, low to the trees and gently on the throttle. Normal operations could be substantially louder.

Helicopters are loud, too loud for a wooded residential neighborhood. The people who live near the proposed heliport say they think it is too loud. There are already several operating heliports nearby. This heliport in the 26 mile neighborhood should not be permitted. Nor should heli-ports be permitted in the nearby Moose Valley where we, and many other families reside.

We believe it would be in everyone's (i.e. the Haines Borough, the helicopter skiing industry, and local taxpayers) best interest to strategically locate heliports away from residents' homes; in so doing, the Haines Borough could continue to promote the successful helicopter-skiing industry, while the people of Haines who work in other local industries can continue to enjoy the places we reside year-round, and continue to be welcoming to winter ski tourists. Visitors often remark on how friendly and welcoming our small town is. Let's keep it that way by locating heli-ports away from the homes of the locals, who will then feel more inclined to continue to make heli-ski tourists feel welcome and invited.

Respectfully,

Rafe McGuire &

Sally Boisvert

P.O. Box 578

Haines, AK 99827

From: [Sally McGuire](#)
To: [Julie Cozzi](#)
Subject: Fwd: Helicopter noise assessment comments
Date: Friday, June 26, 2015 7:13:45 AM

Hi Julie, could you please post this with the other helicopter noise report comments? thanks, Sally

----- Forwarded message -----

From: **Sally McGuire** <chilkootmcguire@gmail.com>
Date: Fri, Jun 26, 2015 at 7:11 AM
Subject: Helicopter noise assessment comments
To: Sally McGuire <chilkootmcguire@gmail.com>

I have read the helicopter noise assessment. I must say I was surprised by the poor quality of the work- I would have expected better research from a college freshman (and especially considering what we paid for it). It also reads like it was written by an apologist for the wind industry.

To site something as noisy and disruptive as a heliport in a residential neighborhood is an example of exceptionally poor planning, bound to create serious problems. The point of any kind of zoning is to ensure neighborhood homogeneity and consequently peaceful coexistence. Those citizens of Haines who support heliskiing must have noticed by now that the people who have to live with it don't get used to it and they don't stop being angry about it. Those problems won't go away until the heliskiing industry is required to operate away from people's homes. Haines has endured many years of disruption and disintegration of community from this. Allowing SEABA to site their heliport in a small, formerly quiet, rural community will ensure that the problem continues.

The citizens of Haines who live up the highway do so because they value peace and quiet and are willing to pay for it (just driving back and forth to work costs a lot). They are well aware of the hypocrisy of their being forced to live in a helicopter landing zone, while downtown residents are protected from even as much as a crowing rooster.

Incidentally, the way the noise report should have been conducted would have been to send someone around to ask the neighbors what they think. Then you pool and weight responses from people who live close to the facility or under the flightpath. You put those who live a mile away into another pool, and so on. Any averaging that is done, if you want to average, should be only within each pool. Using averages to prove that an extremely loud noise is actually nice and quiet is a fine example of how to lie with statistics.

As far as I can see, the only point of spending forty grand of our money on this "noise assessment" study was to prove that the opinions of the people who live up there don't matter.

Sally McGuire

From: [David Sosa](#)
To: [Julie Cozzi](#)
Subject: FW: comments for noise study
Date: Friday, June 26, 2015 3:43:32 PM
Attachments: [CommentsforNoiseStudyatBSVproperty 6 26 2015.docx](#)

From: Sunny Sundberg [mailto:sunny@seaba-heli.com]
Sent: Friday, June 26, 2015 3:33 PM
To: David Sosa
Subject: comments for noise study

David see attached.
Thank you

Scott
Scott Sundberg
GM / Guide
SEABA LLC
www.seaba-heli.com
907 314 0445

To: Dave Sosa
Borough Manager

I would like to say that when asked for public comment on the study it was difficult to decide what to comment on. The study was done through empirical methods, it was meant to be objective and without the subjective content that has made this CUP so difficult to interpret. I think the last paragraph of the study below sums up the considerations of this study:

“As stated above, the three sites outside the helipad ranged from 30-51 DNL. Typical noise measurements at an average “wooded residential” land use is generally around 51 DNL. This means that the measured average noise level at the three sites fairly closely matches, or is quieter than what would be expected in wooded residential or quieter land use types. However, it is important to note that these comparisons do not link to any specific noise standard or regulation, but rather give a generalized comparison between what is typical in similar land uses and the results measured during this Study”.

Also, after reading through it a couple of times, it dawned on me that the noise levels that are near or close to light commercial noise determined by the study only would affect 5% of residences out in the 26 mile area. In effect information stating otherwise was not present.

Context number 1:

This area is zoned generally allowed use, which encompasses about every imaginable use from private residential, to commercial and even heavy industrial. The report says that during this testing and information gathering period that the dnl levels stayed very close to what one might experience in a wooded residential area. This is stated as 30-51 DNL.

In this context the DNL levels could be much higher and still be compatible with all the allowed land uses in this area.

In the chart that they use to compare noise in figure 2-2 they group these same decibel levels, 30-51 as quiet.

Context number 2:

The Lmax time duration of the events is limited to when the heli is going to take off and land. In the appendixes you can look at each event and determined that the average amount of noise generated at the location averaged around 4 minutes and 45 seconds, the LMAX averages total 85 seconds per occurrence. 75% of the remaining noise is 90% lower.

If you had a rock crusher or a sawmill running at this site,(both do not need a permit under current zoning) which at the industrial scale both generate peak noise over 110 decibels, with an average length of time for peak noise could be 6 plus hours a day.

A helicopter landing and taking off 20 times a day would have a LMax duration of 1700 seconds or 30 minutes over the course of the working day. This would account for only 10 percent of the industrial noise generated by a permitted activity like a rock crusher or sawmill.

Comparatively one could conclude that the allowed uses are much more intrusive, probably do create a level of undo noise, and generate a more continuous LMAX and SEL levels. So why is this activity supposedly given so much attention? Why are we even discussing this issue.

Context 3:

In everyday life through the borough, along highways, and in the commercial and residential areas of the borough, sound is generated from 7 in the morning to 11 at night in some circumstances.

Turner Construction operates a CUP gravel pit at the top of 4th street next to residences. Large equipment cut into the hillslopes above the residences, load trucks with gravel, and then proceed down the hill through the residential area to deliver their product to customers.

In terms of noise there are probably similar if not higher noise levels involved with this activity. It also would qualify that unlike the 4th street gravel pit, helicopters noise moves away from all residences over public lands identified near the test site, over lands allocated as resource development and multi purpose recreation. This includes recreation machinery that delivers high levels of noise. This happens both in personal recreation, as well as commercial operations.

Noise is part of everyday life in economy and in enjoyment. For true quiet one must retreat to wilderness, and even then a International jet can disturb the solace.

My other thoughts after giving certain scenarios demonstrating realities associated with this topic, I want to mention a few things about the environment of the study.

Haines and specifically 26 mile had a very light snow year. This affected a few crucial aspects that were not in the study.

1. As a result of the low snow levels, SEABA was forced to cancel it snowcat tours which leave from the immediate study area. In 2014 we did 28 cats ski trips. An abundant amount of ambient or background noise was left out of this study because of this. Noise not captured that normally would exist would include snow plow rigs both for state and private roads near the study area, private vehicles using BSV and SEABA roads to get to the activity, the startup and shutdown of the SEABA snow cat which is a diesel tractor that needs to warm up and cool down every time it departs for the excursion.
2. We also have snow mobile tours that leave from this area that were not facilitated because of low vegetation cover as well. We had enough snow to move the machine on the snow, but because of the lack of deep snow our rental business and general activity was down 80%. Most rental occur with deep snows that the riders are targeting.

This noise study identifies that while there is noise, it is no greater than what has been and is accepted throughout communities including ours, noting the example of the 4th street in commercial and more importantly in line with residential areas.

Without a doubt I feel that this study demonstrates that this is a compatible use for this area, giving the current zoning, and the relatively infrequent amount of noise that it will contribute to the area.

Finally the other comment is that noise is apart of any economy, and this zoning within in the borough was specifically left open for private landholders had options to do what they want. Under consolidation this was requested and lobbied for during consolidation by the people who owned property outside of the town site.

When the borough assembly added the requirement to get a CUP from the Planning and Zoning, under title 5, if a person wanted to develop a heliport, it erred by not allowing the

exclusion of Generally allowed uses. This study shows that if the proposed development of a heliport was in a residential or commercially zoned area, then the validity of getting a CUP has merit.

I believe an easy fix for the borough is to remove this condition from ordinance from title 5, and put into title 18 under the appropriate zoning.

Thank you for your time.

Scott Sundberg

From: [Thom Ely](#)
To: [Julie Cozzi](#)
Cc: [David Sosa](#); [Lynn Canal Conservation](#); [Chilkat Valley News](#); [AORC Board](#)
Subject: Helicopter Noise Study - Public Comment
Date: Wednesday, June 24, 2015 6:55:34 AM

Dear Haines Borough,

The results of the Helicopter Noise Study at the 26 mile residential area came out exactly as predicted. Helicopters make noise at a level that bothers some people and not others.

The fault in the study is that the flight path and elevation of the helicopter was not regulated or monitored. In addition, nine flights is an extremely low sample. The noise monitoring stations were set up, but no official was there to tell the pilot where and at what elevation to fly. This lack of data parameters and scientific analysis renders the study useless.

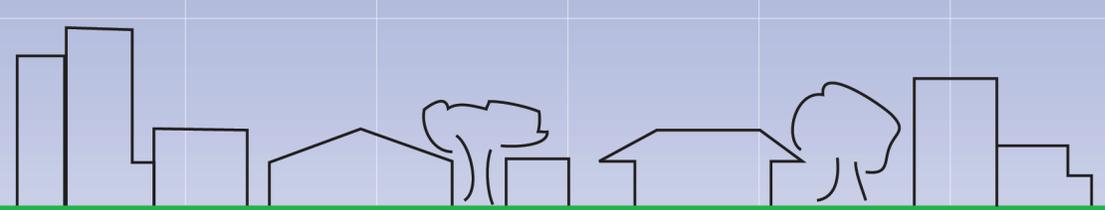
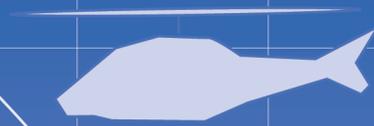
In addition weather data for the days that the monitors were in place was not collected or factored in. Wind direction and velocity affect the soundscape. The microphones had wind shields on them but this has no relation to how the rotor noise is affected by the wind.

The 70 DNL standard used for comparison in a wooded residential area is also subjective. Most people living in the Chilkat Valley want peace and quiet at home. This local standard may be 25 DNL. That is why there are noise ordinances in residential areas. Dogs barking, heavy equipment working, chainsaws and helicopters are all considered a nuisance and annoyance.

The fact of the matter is that heliports do not belong in residential areas. If approved, as an adjacent property owner I would pursue legal action and monetary compensation from the Haines Borough. All commercial aviation needs to take off and land at at the Haines Airport.

Sincerely,

Thom Ely
POB 1014
Haines, AK 99827



Fly Neighborly Guide

produced by the **Helicopter Association International** Fly Neighborly Committee

Preface

This is the third edition of the Helicopter Association International (HAI) *Fly Neighborly Guide*. The initial guide was issued in 1981 and again with a change to the title page in 1983. A second edition was issued in 1993. This guide is based on the second edition and was edited and revised by Charles Cox and Dr. John Leverton on behalf of the HAI Fly Neighborly Committee.

The Fly Neighborly Program is a voluntary noise abatement program developed by the HAI Fly Neighborly Committee. The program is designed to be implemented world-wide by large and small individual helicopter operators. This program applies to all types of civil, military and governmental helicopter operations.

Fly Neighborly Noise Abatement procedures for specific helicopter models are available on the HAI Web site www.rotor.com.

Additional pilot training information, discussion of helicopter noise sources, noise propagation and general information on how to operate helicopters to minimize the noise impact is also available on an associated interactive Noise Abatement Training CD developed for pilots by the HAI Manufacturers Committee. Copies of this CD can be obtained from HAI .

	Preface	i
	List of Figures	iii
	Foreword	iv
1	General Information	1
	1.1 Background	1
	1.2 Objectives	1
	1.3 About This Guide	1
	1.4 Purpose	1
	1.5 Organization	1
	1.6 Administration	2
2	Helicopter Sound Generation	3
	2.1 The Source of the Sound	3
	2.2 Impact of Operations	4
3	General Guidelines for Noise Abatement Operations	7
	3.1 Flyover Height	7
	3.2 FAA Guidance - VFR Flight Near Noise Sensitive Areas	8
	3.3 Flyover Speed	9
4	How to Operate Helicopters Quietly	10
	4.1 General	10
	4.2 Ground Operations	10
	4.3 Hover / Hover Taxi / Ground Taxi	10
	4.4 Takeoff and Climb (Departure)	10
	4.5 Enroute and Cruise Flyover	10
	4.6 Turns (Maneuvers)	11
	4.7 Descent/Approach and Landing	11
	4.7.1 Small/light helicopters	11
	4.8 Other Factors to be Considered	14
5	Pilot Training	15
	5.1 Scope	15
	5.2 Basic Guidelines for Pilot Training	15
6	Operator Program	16
	6.1 Introduction	16
	6.2 Company Policy	16
	6.2 Implement Guidelines	17
7	Managing Public Acceptance	18
	7.1 Scope	18
	7.2 Media Support	18
	7.3 Public Relations	18
	7.4 Preventing and Responding to Complaints	19
8	Fly Neighborly Program—What Can be Achieved?	22
	Appendix 1	23
	Appendix 2	26
	Appendix 3	27
	Glossary	28

Figure 1	High-Noise Flight Operations – Small/Light Helicopter	5
Figure 2	High-Noise Flight Operations – Medium/Heavy Helicopters	5
Figure 3	High-Noise Maneuvers – Medium Helicopters	6
Figure 4	Fly Higher Chart	8
Figure 5	Noise Abatement Approach Techniques for Small/Light Helicopters	12
Figure 6	Noise Abatement Approach Technique for Medium and Heavy Helicopters . . .	13
Figure 7	Ground Noise Exposure Footprint	13
Figure 8	Relationship between Noise Exposure and Annoyance	20
Figure A1	Relationship between Sound Level and Helicopter Weight	23
Table A1	Illustrative Noises	24
Figure A2	Comparison of Sounds	25

Foreword

In the late 1970s, concern was being expressed about helicopter noise by the general public and national authorities in a number of nations, including the USA. As a result, a number of Helicopter Association International (HAI) committees, including the Heliport and Airways Committee (now known as the Heliports Committee), started to research how this concern should be addressed. At the same time, the International Civil Aviation Organization (ICAO), with active support of the United States Federal Aviation Administration (FAA) and most European nations, established a working group to develop helicopter noise certification standards. In addition, the FAA issued a Notice of Proposed Rulemaking (NPRM) outlining proposed noise certification procedures and limits.

The industry, and HAI in particular, felt that a better approach would be for the industry to develop voluntary guidelines to control the noise impact by operational means. After a number of FAA/industry meetings, the FAA, in the fall of 1981, agreed to withdraw its initial NPRM related to helicopter noise certification while additional technical data were acquired. This was done with the understanding that the helicopter industry would develop new technology - creating quieter, more advanced equipment, and implement a voluntary noise abatement program. This resulted in the establishment of the HAI Fly Neighborly Program based on an earlier program developed by Bell Helicopter Textron.

ICAO initially issued international noise standards in 1981, as a part of the International Standards and Recommended Practices, "Environmental Protection," Annex 16 to the Convention on International Civil Aviation. These were not adopted by many nations before they were relaxed in 1985. Since that time, the standards have been amended a number of times. The FAA subsequently issued helicopter noise certification standards in 1988. These have been revised over the years. They are defined in 14 CFR Part 36. The Fly Neighborly Program offers the technical information necessary for helicopter operators to fly both current and new advanced helicopters as quietly as practical, and to make helicopter operations compatible with nearly all land uses. The program also discusses how to communicate to the public the gains from using such procedures. In addition, the program provides general information related to helicopter noise and public acceptance.

1 General Information

1.1 Background

HAI's Heliports and Airways Committee (HAC) originally organized the Fly Neighborly Program through its Fly Neighborly Steering Committee. This committee was composed of members of HAI and governmental representatives, including the FAA, members of the military and other associations. Officially launched by HAI in February 1982, the program gained U.S. and international acceptance. Subsequently, the work related to the Fly Neighborly Program was considered sufficiently important by HAI that a separate Fly Neighborly Committee was formed to promote the program and ensure that the *Fly Neighborly Guide* and associated material are updated as appropriate.

In the U.S., the program has gained the full support of helicopter operators, regional associations, manufacturers, pilots and communities throughout the country. Federal, state and local government agencies have embraced the program, and taken an active part in sponsoring Fly Neighborly presentations in conjunction with safety seminars and other activities. Worldwide, the helicopter industry and its related communities are kept informed on the Fly Neighborly Program. Companion programs have been developed in a number of countries including Germany, France, and the United Kingdom.

1.2 Objectives

The Fly Neighborly Program addresses noise abatement and public acceptance objectives with guidelines in the following areas:

- pilot and operator awareness
- pilot training and education
- flight operations planning
- public acceptance and safety
- sensitivity to the concerns of the community

1.3 About This Guide

The *Fly Neighborly Guide* is published under the auspices of HAI to promote helicopter noise abatement operations. It addresses general issues only and is, by no means, comprehensive.

1.4 Purpose

These guidelines are intended to assist pilots, operators, managers, and designated Fly Neighborly officers to establish an effective Fly Neighborly Program. The concepts and flight operations outlined, herein, must be further tailored to suit local needs, and to ensure local or regional organizations cooperate to develop a strong, well-organized and disciplined approach to achieving Fly Neighborly objectives.

1.5 Organization

This guide is divided into seven main sections. Section One covers general information. Section Two addresses helicopter sound generation. Section Three gives guidance for noise abatement operations. Section Four discusses how to operate helicopters quietly. Section Five covers pilot training. Section Six describes the operator program which provides a broad outline of the possible actions helicopter operators can take, including

flight operations planning. Section Seven deals with community concerns and issues of public acceptance and Section Eight answers the question of what the Fly Neighborly Program can achieve. Three appendices present a comparison of sounds, the Advisory Circular (AC) 91.36D, and an example of a public heliport noise abatement program. In addition, a glossary is provided to help define the acronyms used or referred to in this Guide.

1.6 Administration

HAI solicits new ideas, comments, and recommendations to improve the program. HAI's Fly Neighborly, Safety and Heliport Committees are focal points for the development of new technical material in their respective areas. Additional guides can be obtained from HAI.

The Fly Neighborly Committee monitors the Fly Neighborly Program, and distributes new information to participants. Individuals, operators, or agencies desiring additional information should contact the HAI Fly Neighborly Program staff liaison at:

Helicopter Association International
1635 Prince Street
Alexandria, VA 22314 USA

Phone: (703) 683-4646
Fax: (703) 683-4745
Web site: www.rotor.com
Email address: flyneighborly@rotor.com

2 Helicopter Sound Generation

2.1 The Source of the Sound

The external sound produced by a helicopter is made up of acoustical sources from the main rotor, the anti-torque system (tail rotor), the engine(s), and drive systems. For turbine-powered helicopters, the main rotor and anti-torque system dominate the acoustical signature. Engine and gearing noise are generally of significance only when up close to the helicopter. The same is true for piston-powered helicopters, although muffling of the engine is usually necessary.

The most noticeable acoustical characteristic of all helicopters is the modulation of sound by the relatively slow-turning main rotor. This modulation attracts attention, much as a flashing light is more conspicuous than a steady one. The resulting modulated sound can become impulsive in character and is referred to as BVI (Blade Vortex Interaction Noise), *blade slap*, or more generally, as *impulsive noise*. In some flight conditions, the main rotor noise can become quite impulsive in character (*blade slap*, or more generally *impulsive noise*), which can increase the annoyance of the helicopter to people on the ground.

Impulsive noise occurs during high-speed forward flight as a result of blade thickness and compressible-flow on the advancing blade. This latter source causes the blade's airloads to fluctuate rapidly. These fluctuations result in impulsive noise with shock waves that can propagate forward. High tip-speed rotor designs flown at high airspeeds are the worst offenders.

At lower airspeeds, and typically during a descent, rotor impulsive noise can occur when a blade intersects its own vortex system or that of another blade. This type of noise is referred to as Blade Slap or (BVI) noise. When this happens, the blade experiences locally high velocities and rapid angle-of-attack changes. This tends to produce a sound that is loud and very annoying in character.

There are three basic types of anti-torque systems used in current helicopters: the conventional open tail rotor, the ducted tail rotor/fan (e.g., the Fenestron), and the Coanda-effect/ blown-air system (e.g., the NOTAR). Each system has its own unique acoustical characteristics. The conventional open tail rotor generates a fluctuating low pitch whine or drone. The ducted tail rotor/fan produces a high pitch, sometimes fluctuating shrill. The blown-air, directional-vane system generates a broadband, 'compressed-air' hissing.

The noise of both the open tail rotor and the ducted tail rotor/fan increases with airspeed and in high-rate climbs and turns. Interaction between the main rotor and either type of anti-torque system can, and often, exacerbates the anti-torque system's sound output. In addition, the proximity of the vertical fin and tail boom influences the sound output of an open tail rotor. Somewhat similarly, the presence of vanes/stators and support struts, plus inflow/outflow turbulence, exacerbate the sound output of ducted tail rotor/fan systems. Turbulent flows off the pylon and fuselage also tend to increase the level and the sound fluctuations of both these types of anti-torque systems.

The Fenestron has some advantages over an open rotor at distance since it generates a higher frequency sound, which is more easily attenuated by the atmosphere. On many helicopters, the main source of noise heard at distance, particularly if a high tip-speed tail rotor is used, is associated with the tail rotor blade thickness. 'Quiet open tail rotors' tend, therefore, to use lower tip speeds, thinner blade sections and, to provide adequate thrust, an increase in the number of blades.

With regard to the noise generated, the NOTAR has advantages in many respects because it is independent of the increase associated with the other two types of anti-torque systems. The NOTAR is, however, only available at the current time on designs manufactured by one company.

The general relationship between sound level and helicopter weight, and a comparison of the sound generated by a helicopter and other common noise sources are given in Appendix 1.

2.2 Impact of Operations

For a typical small/light helicopter, the most annoying noise mechanism impulsive noise (BVI) occurs during partial power descents and in sharp/high-rate turns. For a typical medium or large/heavy helicopter, they can occur in low-speed level flight, during partial power descents, and in sharp/high-rate turns. Figures 1, 2 and 3 show the flight conditions under which you can expect main rotor impulsive noise to occur.

The impulsive noise boundary for your particular helicopter may be somewhat larger than that shown in Figures 1 and 2 because the main rotor may generate impulsiveness intermittently when it encounters wind gusts, or during a rapid transition from one flight condition to another. Although the sound produced at these descent rates is not extremely loud to crewmembers inside the helicopter, they can, in most cases, recognize it and, thereby, define the impulsive noise boundaries for their particular helicopter. However, in some cases, the impulsive BVI noise cannot be detected in the cockpit. Of course, people on the ground hear impulsive noise grow more intense as the helicopter descends.

Figure 1

High-Noise Flight Operations – Small/Light Helicopter

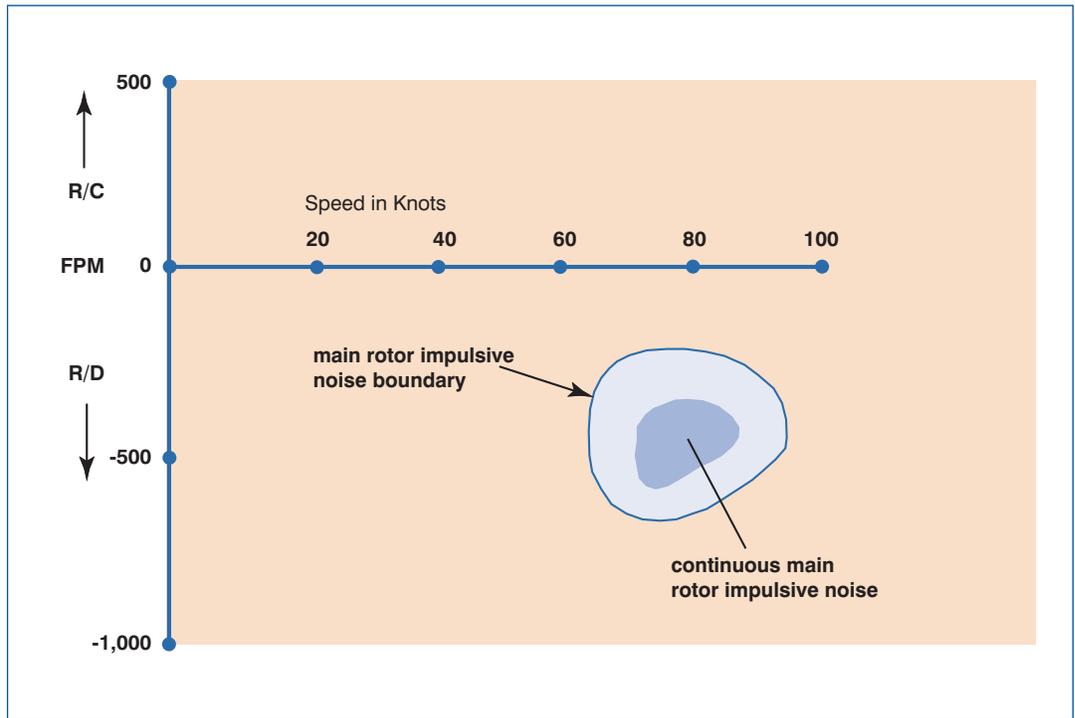
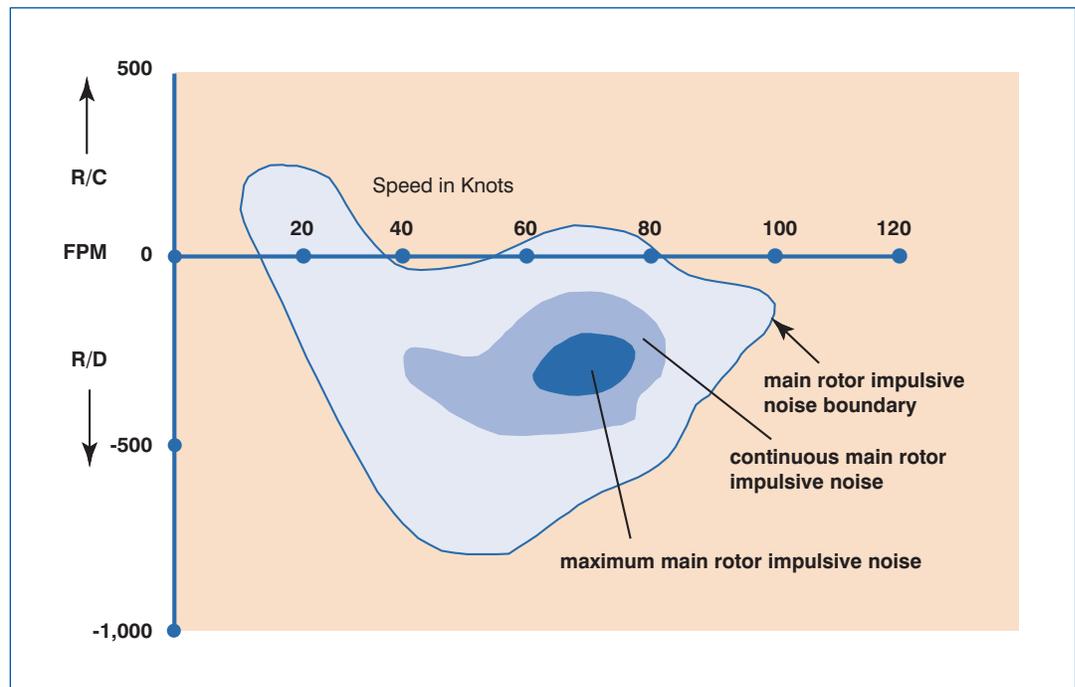


Figure 2

High-Noise Flight Operations – Medium/Heavy Helicopters

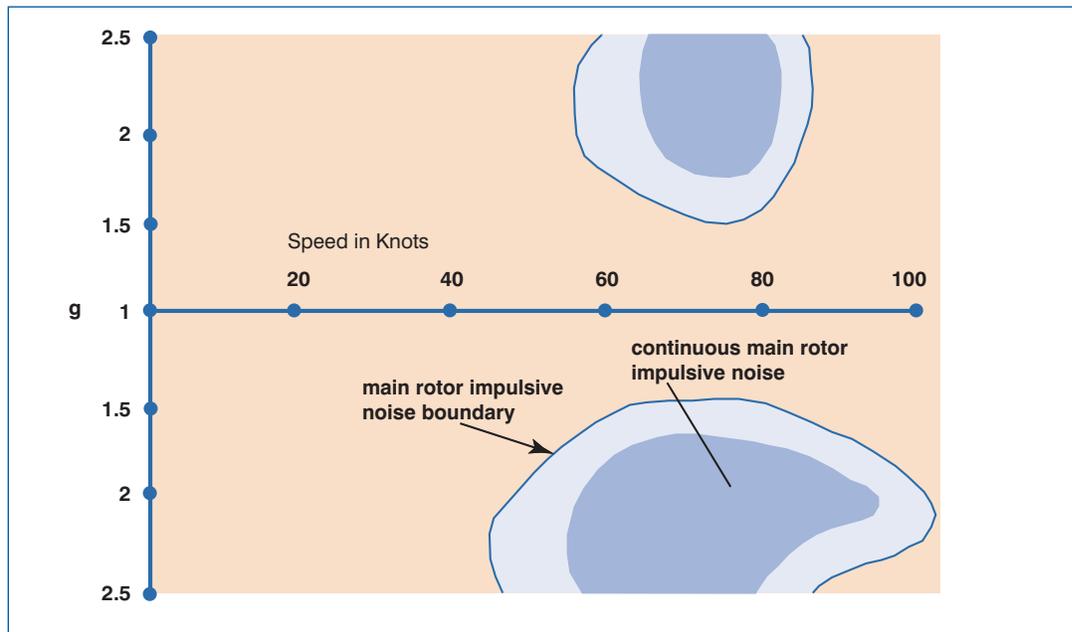


Main rotor impulsive noise also occurs during maneuvers (i.e. in constant speed turns, if turn rates are too high. Here, the main rotor blade and wake interact in much the same manner as in partial power descents. As Figure 3 shows, for a medium helicopter with

a two-bladed main rotor, main rotor impulsive noise occurs in turns that exceed 1.5g, with airspeeds between 50 and 90 knots in a left turn, and between 40 and 100 knots in a right turn. There is little difference in the intensity of the noise in right or left turns once the 'critical g' is reached. The crew can normally hear this impulsiveness. These characteristics also generally apply to other helicopters. Unfortunately, specific information on the increase in the level of impulsive noise, in terms of 'g' or bank angle, is not generally available.

Figure 3

High-Noise
Maneuvers –
Medium
Helicopters



In addition to the general characteristics discussed above, it should be noted that the various sound sources exhibit specific directivity characteristics. These are not discussed in detail in this document, but it is worth noting that, in general, the main rotor sound is focused towards the front and on the advancing blade side of the helicopter. The tail rotor noise is similarly focused forward and it is also radiated downward under the helicopter. As a result, the sound – in particular from the main rotor impulsive sources – is generally detected well in advance of the helicopter flying over. Fortunately, these aspects are normally taken into account when noise abatement procedures are developed by the manufacturer. Even so, they should not be ignored when planning flight operations.

3 General Guidelines for Noise Abatement Operations

This section offers a number of noise abatement techniques for use in daily operations. A few general guidelines are given below.

- Avoid noise-sensitive areas altogether, when possible. Follow:
 - high ambient noise routes such as highways, or
 - unpopulated routes such as waterways.

If it is necessary to fly near noise-sensitive areas:

- maintain an altitude as high as possible in line with the HAI *Fly Higher Chart* (Fig. 4)
- fly normal cruising speed or slower
- observe low-noise speed and descent recommendations
- avoid sharp maneuvers
- use steep takeoff and descent profiles, and
- vary the route, since repetition contributes to annoyance

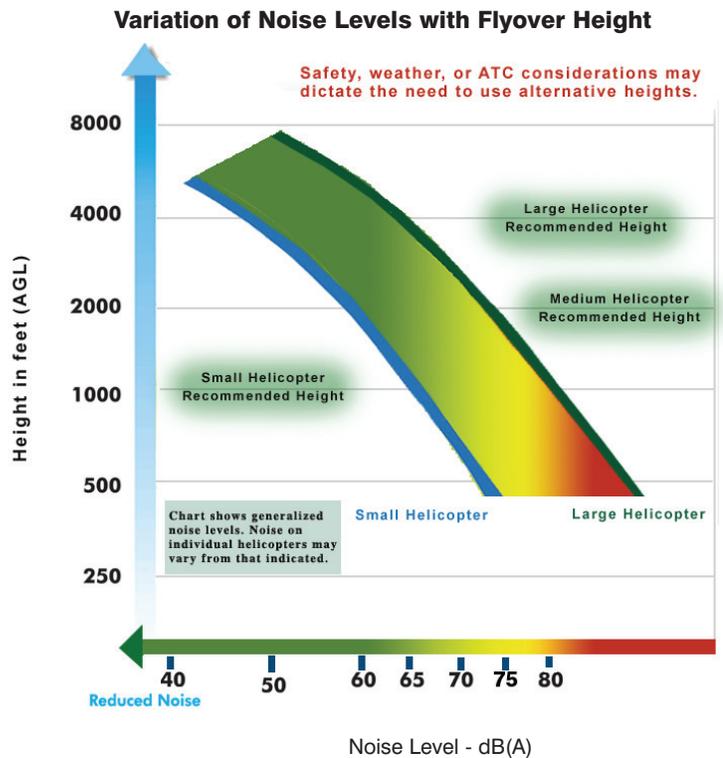
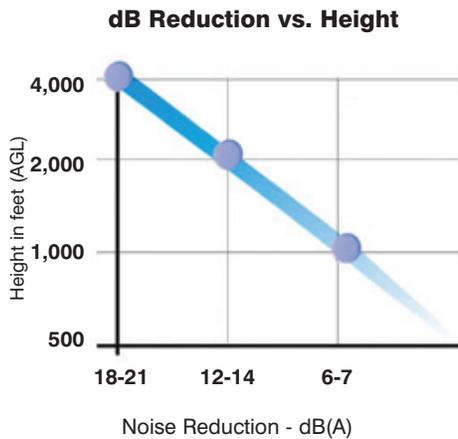
Flights conducted over roads (particularly interstates), railways and rivers in noise-sensitive areas are less likely to generate complaints than routes that acoustically and visually intrude on peoples' privacy, such as those that cross, or can be heard from, residential backyards.

3.1 Flyover Height

Maintaining an altitude as high as possible above the ground and flying at airspeeds consistent with minimum noise output, flight safety and ATC constraints is essential. Height and distance have a major impact on the noise level observed under the helicopter, as illustrated in the HAI *Fly Higher Chart*, shown in Figure 4. It shows the relationship of flyover height and noise exposure at ground level for different-sized helicopters. A doubling of height or distance reduces the level by six to seven dB(A). If the height/distance is increased by a factor of three, the maximum level is decreased by approximately 10 dB(A), which is equivalent to reducing the loudness by half. The chart can be used to decide what height should be flown so that the helicopter's noise output is compatible with community noise exposure criteria. For example, to be compatible with the generally accepted criterion of 65 dB(A) max for flyover of noise-sensitive areas, light/small helicopters should fly at altitudes no less than 1,000 feet AGL. For medium helicopters, the recommended height is 2,000 feet AGL, and, for heavy/large helicopters, 4,000 ft AGL.

Figure 4

Fly Higher Chart



3.2 FAA Guidance - VFR Flight Near Noise Sensitive Areas

The FAA has published guidance when flying near noise-sensitive areas for a number of years. It was updated in 2004 and issued as Advisory Circular AC91.36D. A copy of this document is reproduced in Appendix 2. This voluntary practice recommends:

- the avoidance of flights over noise sensitive areas, if practical.
- When not possible, pilots flying VFR flights over noise-sensitive areas should make every effort to fly at not less than 2,000 feet above the surface, weather permitting, even though flight at a lower level may be consistent with the provisions of FAR 91.79, Minimum Safe Altitudes.

Typical of noise-sensitive areas in this Advisory Circular are defined as: outdoor assemblies of persons, churches, hospitals, schools, nursing homes, residential areas designated as noise-sensitive by airports or by an airport noise compatibility plan or program, and National Park Areas (including Parks, Forest, Primitive Areas, Wilderness Areas, Recreation Areas, National Seashores, National Monuments, National Lakeshores, and National Wildlife Refuge and Range Areas). It is also recommended that, during departure from, or arrival at an airport, climb after takeoff and descent for landing should be made so as to avoid prolonged flight at low altitudes near noise sensitive areas. It should be mentioned, however, that such procedures should not apply where it would conflict with ATC clearances or instructions, or where an altitude of less than 2,000 feet is considered necessary by a pilot in order to adequately exercise his or her primary responsibility for safe flight.

It should be noted that FAA guidance recommends a height of 2,000 ft AGL be used for general over flight of noise-sensitive areas. This is somewhat different than the guidance developed by HAI's Fly Neighborly Committee, discussed previously and illustrated in Figure 4, which recommends 1,000 ft for small helicopters. For medium helicopters, HAI recommends 2,000 ft, the same as the FAA, but for large helicopters, HAI recommends 4,000 ft. Although FAA guidance should be followed when practical, HAI considers use of the heights in Figure 4 will ensure acceptable noise disturbance to persons on the ground.

3.3 Flyover Speed

The airspeed of the helicopter has an important effect on both noise exposure impact and the impulsive character of your helicopter. Generally, it is best to fly at, or somewhat below, normal cruise speeds when over-flying noise-sensitive areas. Airspeeds above normal cruise can dramatically increase your helicopter's noise levels and the impulsive character to the extent that, even if you maintain the suggested minimum flight altitudes, your over-flight is no longer compatible with generally accepted noise exposure criteria.

4 How to Operate Helicopters Quietly

In this section, general information is presented on how to fly a helicopter more quietly. Such information applies to the operation of all helicopters. The flight techniques given in this section are also general in nature and vary somewhat according to the actual helicopter being flown. Manufacturers have developed recommended noise abatement procedures for specific models and, when available, these should be followed. The information on HAI's Web site, www.rotor.com, represents data currently available from the manufacturers. As new data becomes available, HAI will periodically update the Web site. In some cases, the noise abatement information is also available in the specific *Rotorcraft Flight Manual*. When noise abatement information is not available for a specific helicopter model, the flight techniques in the following sections should be followed. This information is also helpful to supplement the information supplied by a manufacturer.

4.1 General

Increasing the distance/separation from noise-sensitive areas is the most effective means of noise abatement.

4.2 Ground Operations

Although startup and shutdown procedures are relatively quiet and are usually shielded from noise-sensitive areas, it is good practice to reduce the amount of time spent on the ground with the rotor turning. This reduces the noise exposure to ground handling crews and heliport/airport personnel.

Minimize the duration of warm-up or cool-down periods (typically two to three minutes, although, on some engines it can be as short as 30 seconds). Do not idle at the heliport for extended periods of time.

When feasible, park with the rotors running with the nose of the helicopter directed into the wind to minimize noise. If the wind speed is above 5 knots, avoid parking with the nose 15 degrees or more from the approaching wind. This will minimize tail rotor noise.

4.3 Hover / Hover Taxi /Ground Taxi

When hover turning, make the turn in the direction of the main rotor rotation. This minimizes the anti-torque thrust required and, therefore, minimizes the level of noise generated by the anti-torque system. Keep the turn rate to as low as practical.

4.4 Takeoff and Climb (Departure)

Takeoffs are reasonably quiet operations, but you can limit the total ground area exposed to helicopter sound by using a high rate-of-climb and making a smooth transition to forward flight. The departure route should be over areas that are least sensitive to noise.

4.5 Enroute and Cruise Flyover

- Fly at least at the heights recommended in the *Fly Higher Chart* (Figure 4).
- Fly at the highest practical altitude when approaching metropolitan areas.

- Select a route into the landing area over the least populated area.
- Follow major thoroughfares or railway tracks.
- Avoid flying low over residential and other densely populated areas.
- If flight over noise-sensitive areas is necessary, maintain a low to moderate air-speed.
- Select the final approach route with due regard to the type of neighborhood surrounding the landing area, and the neighborhood's sensitivity to noise. Assess this sensitivity beforehand for each landing area. Some guidelines are:
 - Keep the landing area between the helicopter and the most noise-sensitive building or area on approach.
 - If the landing area is surrounded by noise-sensitive areas, approach using the recommended noise abatement approach procedure or at the steepest practical glideslope.
 - Avoid flying directly over hospitals, nursing homes, schools, and other highly noise-sensitive facilities.

4.6 Turns (Maneuvers)

As a general rule, avoid rapid, 'high g'/high bank angle turns. When the flight operation requires turns, perform control movements smoothly.

4.7 Descent/Approach and Landing

The approach techniques presented below are designed to avoid the impulsive (BVI) noise generated by the main rotor. These techniques typically use a glideslope that is a few degrees steeper than a normal approach. In addition to avoiding high BVI regimes, steep approaches ensure a greater height over the noise-sensitive area. Once the transition from cruise to the approach glideslope has been made, the airspeed and rate of descent can be 'tailored' to fit local conditions, avoid unsafe regimes, and still guarantee minimum noise.

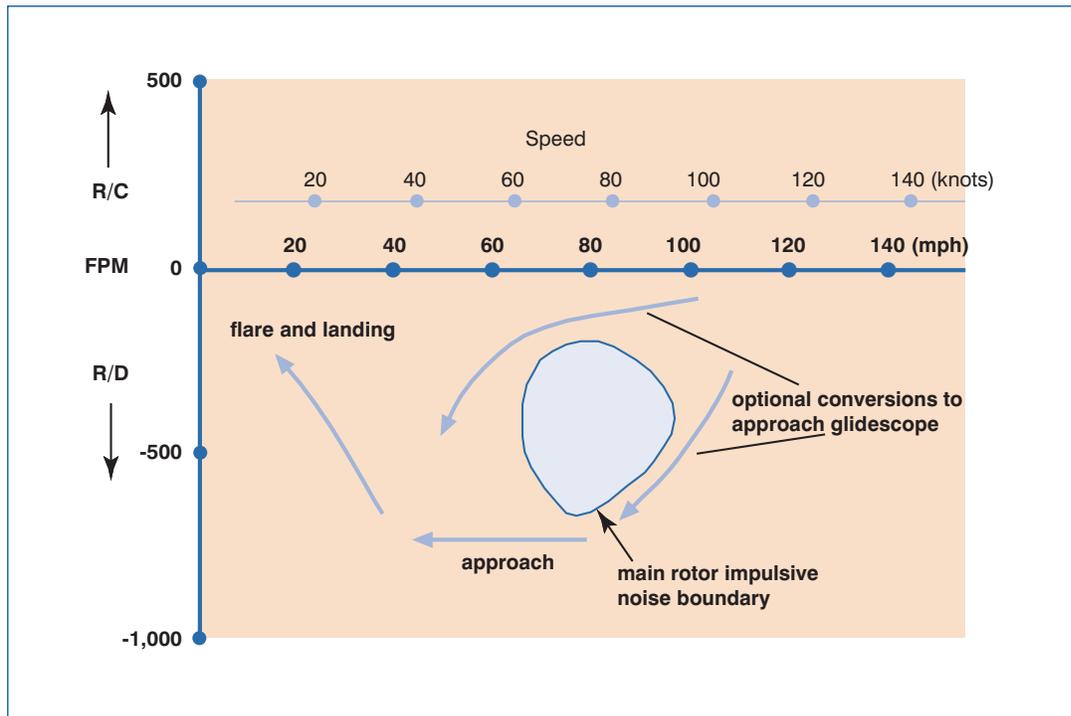
4.7.1 Small/light helicopters

Follow one of the noise abatement flight techniques given below and illustrated in Figure 5.

- When commencing approach, first establish a rate-of-descent of at least 500 fpm, then reduce airspeed while increasing the rate-of-descent to 700-800 fpm.
 - Hold the rate-of-descent to less than 200 fpm while reducing airspeed to 50-60 knots/60-70 mph, then increase the rate-of-descent to 700-800 fpm.
- At a convenient airspeed between 45 and 60 knots/50-70 mph, set up an approach glideslope while maintaining the 700-800 fpm or greater rate-of-descent.
- Increase the rate-of-descent if main rotor BVI noise is heard, or if a steeper glideslope is required.
- Just prior to the 'flare,' reduce the airspeed below 50 knots/60 mph before decreasing the rate-of descent.
- Execute a normal flare and landing, decreasing the rate-of-descent and airspeed appropriately.

Figure 5

Noise Abatement
Approach Techniques
for Small/Light
Helicopters



4.7.2 Medium and heavy helicopters.

Follow the noise abatement flight technique given below and illustrated in Figure 6.

- When commencing approach, begin descent at a rate of at least 200 fpm before reducing airspeed, then reduce airspeed while increasing the rate of descent to 800-1000 fpm.
- At a convenient airspeed between 50 and 80 knots, set up an approach glideslope while maintaining the 800-1000 fpm rate of descent.
- Increase the rate-of-descent if main rotor BVI noise is heard, or a steeper glideslope is required.
- Just prior to the approach to the 'flare,' reduce the airspeed to below 50 knots before decreasing the rate-of-descent.
- Execute a normal flare and landing, decreasing the rate of descent and airspeed appropriately.

4.8 Other Factors to be Considered

It is important to mention that the sound environment on the ground and weather have much to do with how offensive helicopter sound is judged. The background noise of residential areas reaches its lowest level between late evening and early morning. In warm weather, people are apt to be relaxing outdoors in the evening and on weekends. At these times, they are most conscious and resentful of noise intrusion. Therefore, flight over or near residential areas should be avoided, if possible.

Although the weather cannot be controlled, it may be possible to adapt the planned flight schedule to take advantage of meteorological conditions to help minimize noise. The two weather factors most useful in this respect are wind and temperature. They are helpful because they affect the propagation of sound, and vary throughout the day, in a more or less predictable manner.

Wind carries sound in the direction towards which it is blowing, and it makes a background noise of its own that, in high winds, tends to reduce the intrusion of helicopter sound. In inland areas, surface winds are generally stronger during the day, reaching a maximum in mid-afternoon and weaker at night. In coastal regions, land and sea breezes give a different diurnal pattern, beginning to blow shortly after sunrise (sea breeze) and sunset (land breeze). These winds can be used to increase the acceptability of the helicopter by flying downwind of densely populated areas and by scheduling the majority of flights after noon near especially noise-sensitive areas.

Temperature has two effects upon sound. One is the tendency of warm air to be more turbulent than cold air, and, therefore, to disperse sound and decrease its nuisance effect. The other is temperature gradient - the change in temperature with altitude. The normal gradient is negative: temperature decreases with altitude. A negative gradient reaches a maximum in the late morning or just after noon, and is more intense during summer months. This means that it is of some value to schedule flights to and from noise-sensitive areas during the warmer parts of the day. Also, lower temperatures lead to higher advancing main rotor and tail rotor tip speeds which increase the magnitude of the impulsive noise.

At certain times, however, there may be an inversion in the atmosphere - a layer of air from a few hundred to a few thousand feet thick in which the temperature increases with altitude. The inversion reverses the normal curvature of sound propagation, turning an abnormally high portion of the sound energy back toward the ground. The most severe inversions usually occur at night and in the early morning. These, then, are times when the sound of the helicopter will have the most adverse effect upon people on the ground.

In terms of helicopter noise, the worst possible combination of atmospheric conditions is a windless, cold, overcast morning. At such times, it is important that even more emphasis is placed on using noise abatement procedures.

NOTE: *The noise abatement flight techniques described above and detailed on the HAI Web site permit flight crews to fly helicopters in the quietest manner possible. They are to be construed as advisory guidelines only. If flying according to these noise abatement flight techniques conflicts with operating the aircraft in a safe manner, then all safety-related procedures take precedence.*

5 Pilot Training

The basic scope of the recommended pilot training program and an outline of the requirements for such a program are outlined in this section. The information embodied in other sections of the Guide is also relevant. In addition, HAI has issued an interactive Noise Abatement Training CD for Pilots which covers all the aspects a pilot should be aware of. This CD, developed by the HAI Manufacturers Committee, and initially issued in 2006, is available from HAI. It is recommended that this CD be used as a part of any pilot noise abatement training program.

5.1 Scope

The scope of a pilot training program should include:

- initial and recurrent flight training for pilots
- preparing and distributing recommended noise abatement procedures
- organizing and holding operator and manufacturer seminars
- providing environmental and supervisory personnel training courses.

5.2 Basic Guidelines for Pilot Training

Public acceptance for helicopter operations can be obtained in several ways. One is noise abatement. Crew training to ensure that pilots are fully familiar with the noise abatement procedures is, therefore, vital. The following guidelines for noise abatement training are suggested:

- Select training teams for ground and flight training, usually two or three people who have extensive metropolitan operations experience.
- Standardize presentations.
- Maintain complete files of all persons trained.
- Circulate comment sheets at all meetings or training sessions, and stress that all suggestions, ideas and comments will be taken into consideration.
- Make the necessary changes in training and publications that result from the feedback.
- Maintain an open-door policy to all participants, flight crews and the public.
- Determine the effect of this training on the public. Has it been positive or negative?
- Record all complaints and include all relevant details, such as the time, date, location, altitude, and weather.
- Follow up with proficiency training every six months. Emphasize the importance of public contacts, and the necessity of good community relations.
- Expand the guidelines given in this document to cover local needs.

6 Operator Program

When operating a helicopter in a new area, a new spectrum of sound is added to the usual noise environment. If that area is a municipality, thousands of people will hear the new sounds and know a helicopter is operating. How they react depends not only on the noise you generate but upon physical, economic, and psychological factors. One thing is certain: they will react strongly, adversely, and actively if the sound is too irritating, if it represents something that seems to threaten their safety and well-being, or if they cannot see how the noisemaker (the helicopter) benefits them. Although it is up to operators to educate the public about the safety and usefulness of the helicopter, pilots can make the public less hostile to the helicopter (and to the operator's arguments about its safety and community service) by flying in such a way as to make the sound of the aircraft as non-intrusive as possible.

6.1 Introduction

The Fly Neighborly Program attacks the problem of helicopter noise on three fronts: pilot training, flight operations planning, and public education and acceptance. These three areas are interrelated. Planning flight operations with an eye to noise abatement can have a major positive impact on both the pilot training program and public acceptance.

The information presented in this section provides only a broad outline of the possible actions helicopter operators can take. Operators are encouraged to expand this outline by applying knowledge of their own geographical area of operations, the nature of their businesses, and the local climate of opinion with regard to helicopter operations.

6.2 Company Policy

Implement a company policy aimed at reducing the sound levels produced by the operation of your aircraft or other equipment. As part of this policy, implement a broad-based complaint prevention program. Such a voluntary program is necessary to preclude the eventual implementation of restrictive and mandatory federal, state or local laws, regulations, or ordinances.

To formulate this policy, identify and evaluate current and anticipated problems. To assure its acceptance and success, make your commitment to your policy clear, in order to generate such change as may be necessary in the attitudes of pilots and other personnel. In order for company policy to have any meaning, companies should formulate and implement specific guidelines.

6.2.1 Formulate Guidelines

Guidelines are intended to assist flight crews and flight operations personnel to formulate responsible mission profiles without infringing on operational reality. They are not, however, provided as a substitute for good judgment on the part of the pilot. They must also not conflict with federal aviation regulations, air traffic control instructions, or aircraft operating limitations. The noise abatement procedures outlined by these guide-

lines should be used when consistent with prudent and necessary mission requirements. The safe conduct of flight and ground operations remains the primary responsibility.

- Enroute operations:
 - Maintain a height above the ground consistent with the HAI *Fly Higher Chart* (see Figure 4), or higher, when possible. Complaints are significantly reduced when operating above these altitudes. The reverse is also true.
 - Vary routes in order to disperse the aircraft sound.
- Heliport (Terminal) operations:
 - Restrict hours or frequency of operations as appropriate. Minimize early or late flights, especially on holidays and weekends.
 - Limit ground idling in noise-sensitive areas.
 - Minimize flashing landing lights in residential areas at night.
- Establish procedures for each sensitive route or terminal.
- Provide flight crews with noise abatement procedures for each model of aircraft.

6.2.2 Implement Guidelines

- Publish all guidelines and procedures in a flight operations manual or similar document.
- Train flight crews and flight operations personnel as appropriate:
 - Educate regarding basic attitudes in ground school.
 - Train in noise abatement procedures for each model of aircraft to be flown.
 - Emphasize awareness and recognition of sensitive routes and terminals.
 - Establish a requirement that noise abatement procedures must be considered in recurrent company flight checks.
- Assign responsibility and authority for the company program to an appropriate person.

6.2.3 Review and Revise

- Establish periodic reviews of company policy and programs to respond to changes in the regulatory climate or operational conditions.
- Revise your policy and programs as necessary.

7 Managing Public Acceptance

7.1 Scope

The scope of the public acceptance program includes:

- engendering media support
- promoting positive public relations
- enacting a program to prevent or resolve complaints from the public

7.2 Media Support

The purposes of engendering media support are to:

- develop favorable and active helicopter-related media coverage
- provide valid information concerning helicopter operations as necessary

Media sometimes concerned with news of helicopter-related activities include general circulation newspapers, television and radio news, trade journals, and the magazines or newsletters of international, national, state, and regional helicopter associations.

To engender awareness and support in these media, a number of actions can be taken:

- Provide press releases to trade journals and local newspaper, radio, and television news editors concerning any Fly Neighborly seminars that may be sponsored by the local helicopter operator association.
- Support a continuing campaign with the trade journals to keep the rotary-wing community aware of the Fly Neighborly Program.
- Support a continuing campaign with the general press to make the public aware of the Fly Neighborly Program, and the benefits of helicopter transport.
- Stage demonstrations and press conferences addressing specific local issues such as heliports, high-rise evacuation, police services, search and rescue services, emergency medical evacuation, fire-fighting, and the benefits of helicopter transportation to the general public.

7.3 Public Relations

The purposes of engaging in public relations activities are to:

- Develop awareness in the community of the benefits of helicopter transportation
- Develop awareness of the Fly Neighborly Program
- Develop support for the voluntary Fly Neighborly Program, as administered by the helicopter community, in lieu of governmental regulation

In order of their general importance and effectiveness, public relations activities can be undertaken in conjunction with:

- governmental agencies concerned with aviation such as federal, state, or local agencies, the FAA, or state aeronautics commissions
- other governmental agencies not particularly concerned with aviation, such as regional planning commissions, economic development commissions, the National League of Cities, or the U.S. Council of Mayors

- local civic and professional organizations such as Rotary or Kiwanis Clubs, the National Association of Aviation Officials, the Airport Operators Council International, or the National Fire Protection Association. Provide speakers for their local meetings. Solicit their sponsorship of heliports based on the Fly Neighborly Program as a civic project to promote public service.
- nongovernmental economic development agencies such as chambers of commerce, regional economic development councils, or merchant associations. Demonstrate to economic development agencies how helicopter transportation benefits the community, and present data to show the economic viability of helicopter transportation.
- direct public contact
- environmental organizations such as Greenpeace, the Sierra Club, or federal or state environmental protection agencies. Provide information. Do not immediately assume they are hostile to the planned operations. Instead, emphasize the positive environmental aspects of helicopter operations, such as the fact that they are involved in search and rescue operations for hikers or workers injured in remote areas, and that they provide access to such areas without the need to pave over ground for landing strips.

Public relations can be improved by influencing government agencies concerned with aviation in the following ways:

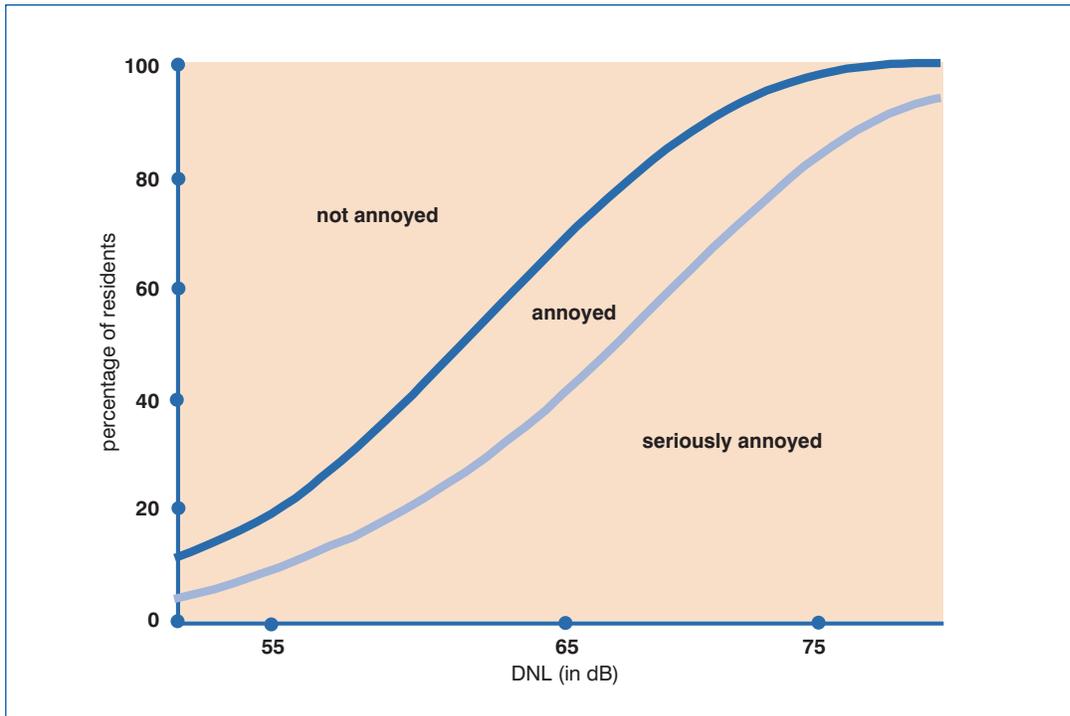
- Participate in public hearings
- Provide professional testimony as appropriate
- Conduct flight demonstrations
- Conduct one-on-one campaigns
- Submit petitions and letters

7.4 Preventing and Responding to Complaints

Helicopter operations are undeniably noisy, and this guide is concerned with a program designed to minimize the problem. Figure 8 shows the relationship between the amount of noise people are exposed to, and how annoyed they are likely to get. In the figure, the amount of noise exposure is expressed as DNL (day-night sound level).

Figure 8

Relationship between
Noise Exposure and
Annoyance



7.4.1 Complaint Prevention

A significant number of noise-related complaints can be prevented in the first place, given a certain degree of sensitivity, foresight, and commitment. Prevent complaints by assessing the environmental compatibility of potential landing facilities. Select those most suitable from a safety, operational, and environmental point of view.

Implement a public acceptance program.

- When contemplating site licensing, identify, contact, and try to influence potential sources of opposition before the hearing.
- Initiate or support presentations, seminars, or displays to educate the public about the value of helicopter transport.

Educate customers about noise abatement procedures, in order to prevent or minimize conflicts between their expectations and company policy.

Coordinate operations personnel and flight crews, so that flights that would unnecessarily violate company policy are not assigned.

7.4.2 Handling Noise Complaints

Although earlier sections of this guide offer information concerning noise abatement techniques, it is unlikely all noise complaints can be avoided. Since some complaints are inevitable, how they are handled is also important to the success of the Fly Neighborly Program.

The resulting problem is not simple. A helicopter can annoy people simply by being over, or too near, certain noise-sensitive areas. If someone calls the FAA, or a state agency, and offers routine information such as the aircraft registration number, colors,

or type, it is likely that he or she will be told the aircraft was not in violation of any regulation, and that, therefore, nothing can be done. The result can be an angry, frustrated member of the community who will probably not be particularly supportive of any current or future helicopter or heliport related issue.

The helicopter user community has a real interest in assuring all complaints are appropriately addressed. Conventional channels for complaints are demonstrably insufficient. Therefore, a number of regional helicopter associations have started to operate their own complaint lines. These lines offer state, federal and local agencies another option when they receive complaint calls about legal and proper operations. The agencies can pass the complaint along to the regional association, or provide the complainant with the telephone number of the complaint line.

Such programs offer a number of benefits:

- Regional associations can often identify an aircraft with much less information than other agencies require.
- Associations can ensure that each issue is addressed and, when possible, satisfy the complainant.

When a complaint is received, how should it be addressed?

- The most effective way to deal with the complaint is to contact the complaining party personally. When you do, avoid being defensive, argumentative, or opinionated. Sincerely try to understand the other person's point of view, and avoid hostile confrontations. Sometimes merely listening politely can improve the situation.
- Furthermore, evaluate the problem thoroughly, and follow through. Was the pilot aware of the problem? Was there something the pilot could have done to avoid it? Is it likely to recur? Contact the pilot or the operator to determine the facts. Consult this guide, and other sources of noise abatement information, to determine how to improve the situation.
- Finally, respond to the caller. Tell him or her what has been learned, and what is being done to prevent the situation from recurring.

Of course, the best way to handle complaints is to avoid them in the first place. If a problem with a certain operation can be anticipated, contact the likely complainant, or members of the public to be impacted, before the operation begins. Explain to him or her, the purpose, timing, and duration of the operation, and its likely impact upon the area. People like to feel they have some control over their lives. Often, just a simple courtesy call in the beginning can save hours of trouble and nuisance later.

An example is given in Appendix 3 of a noise abatement program established at a heliport in a downtown area. The noise abatement program that was put into effect to solve the situation is described.

8 Fly Neighborly Program— What Can be Achieved?

The Fly Neighborly Program outlined in this guide, together with the information on HAI's Noise Abatement Training CD for Pilots, and use of the noise abatement procedures which are available on HAI's Web site, provide the basis for lowering the noise generated by helicopters in day-to-day operations. In addition, the noise abatement procedures offer a way of reducing the impulsive noise characteristic of helicopters which occur during normal operations and often cause complaints. By adopting and following the Fly Neighborly Program, a high level of public acceptance can be obtained.

It should also be noted that current public acceptance of helicopters is, in general, poor and, unless the program outlined in this guide is adopted, further international, national, and local regulations will be enacted to limit helicopter operations. Therefore, HAI strongly recommends that its members introduce a Fly Neighborly Program as outlined in this guide.

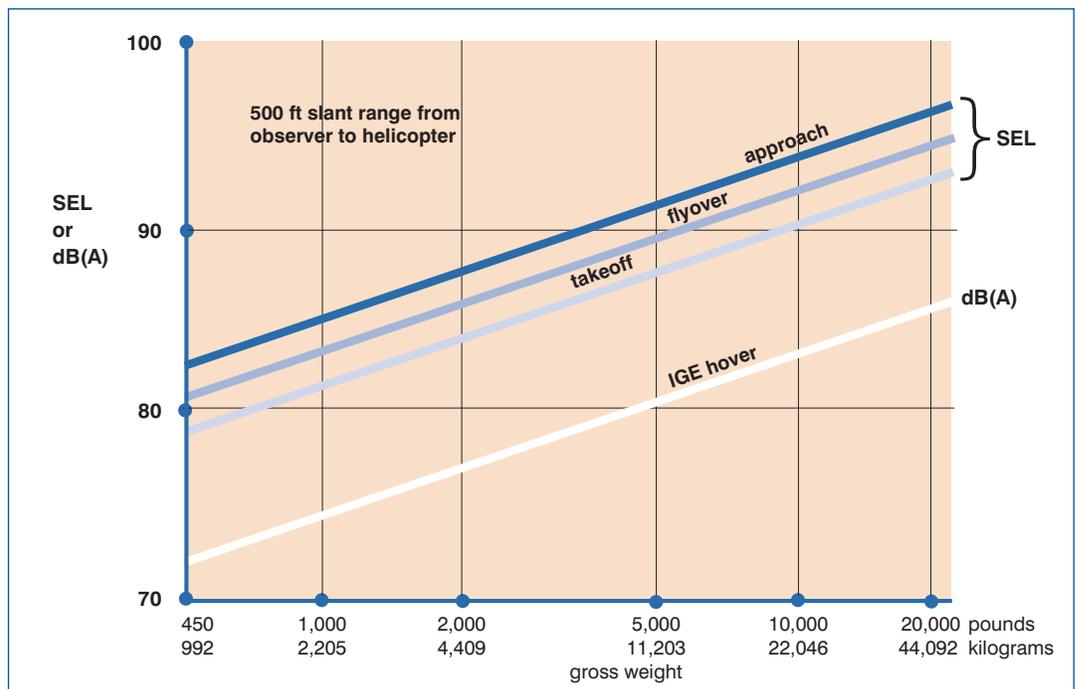
If the procedures given in this guide are followed, public acceptance will be improved and the rotorcraft segment of the aviation industry will be able to flourish and grow, without being restricted by the burden of new noise regulations and operational restrictions.

Sound Comparisons

The general relationship between sound level and helicopter weight is shown in Figure A1 reproduced from the HAI Helicopter Noise Prediction Method. Smaller helicopters are generally quieter than larger ones and sound levels tend to increase approximately three decibels per doubling of helicopter weight.

Figure A1

Relationship between Sound Level and Helicopter Weight



What do these sound levels mean? Table A1 provides sound levels for illustrative noise sources heard both outdoors and indoors. Human judgment of the relative loudness (relative to a reference level of 70 dB(A)) of different sound levels is also given.

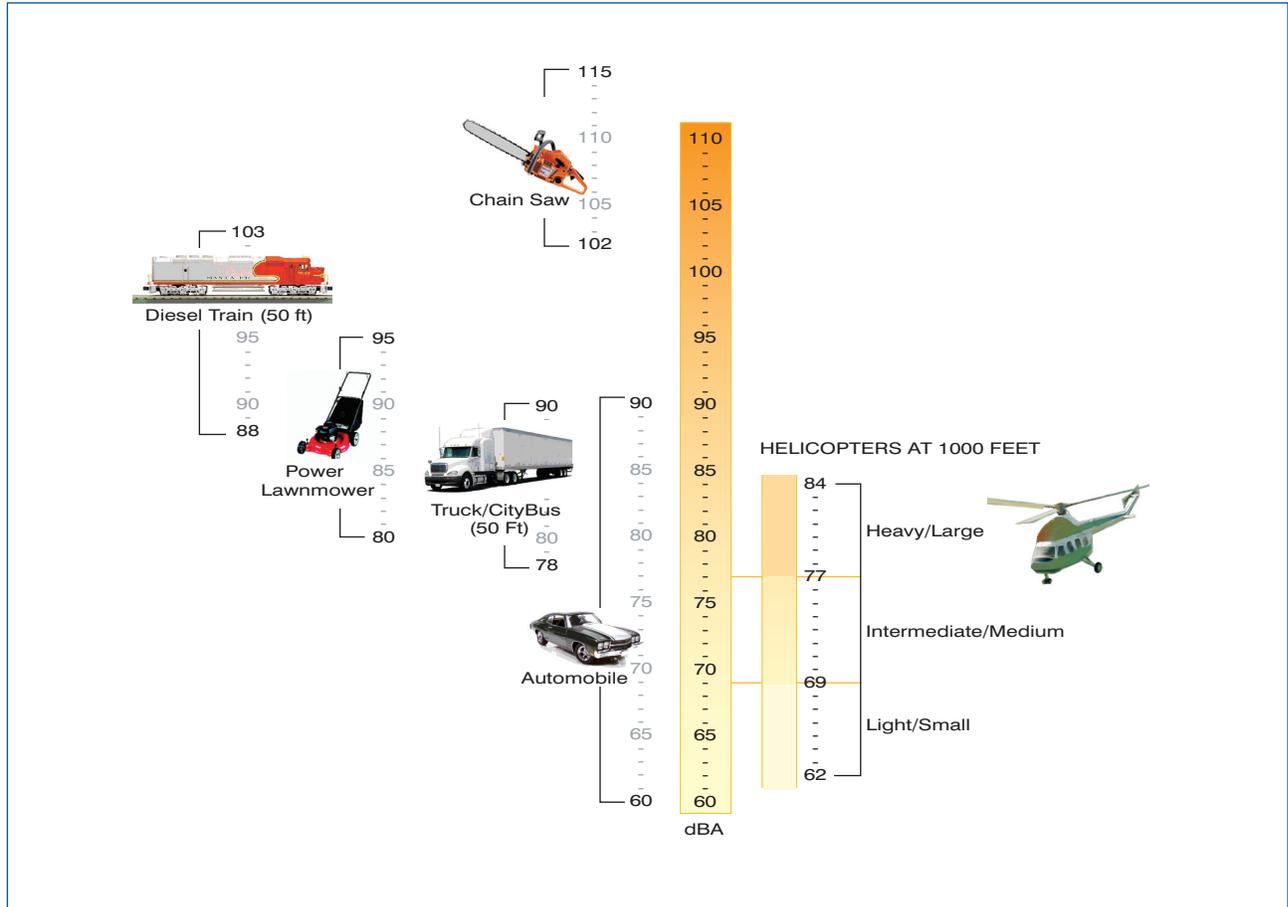
Table A1
Illustrative Noises

dB(A)	Overall Level	Community (Outdoors)	Home or Industry (Indoors)	Human Judgment of Loudness
130	uncomfortably loud	military jet takeoff from aircraft carrier at 50ft (130)		
120			Oxygen Torch (121)	120dB(A) 32 times as loud
110	very loud	turbofan aircraft takeoff at 200ft (118)	riveting machine (110) rock-and-roll band (108-114)	110 dB(A) 16 times as loud
100		Jet flyover at 1,000 ft (103)		100dB(A) 8 times as loud
90		Power mower (95)	newspaper press (97)	90dB(A) 4 times as loud
80	moderately loud	car wash at 20 ft (89) diesel truck at 40mph at 50ft (84) high urban ambient sound (80)	food blender (88) milling machine (85) garbage disposal (80)	80dB(A) twice as loud
70		car at 65mph at 25ft (77)	living room music (76) TV audio, vacuum cleaner (70)	70dB(A)[reference]
60		A/C unit at 100ft (60)	electric typewriter at 10ft (64) dishwasher (rinse) at 10ft (60) conversation (60)	60dB(A) half as loud
50	quiet	large transformer at 100ft (50)		50 dB(A) 1/4 as loud
40		bird calls (44) lower limit of urban ambient sound (40)		40dB(A) 1/8 as loud
10	just audible			
0	threshold of hearing			

Figure A2 provides some basis for comparing helicopter sound levels to other familiar sounds. Comparisons are made at representative distances from each sound source.

Figure A2

Comparison of Sounds



The sound level is, however, only one of the aspects to be considered since the character of the sound - or the impulsive character of the sound - can be equally important. Fortunately, the impulsive character of the sound, as well as the actual level, can be controlled by using noise abatement procedures.

FAA Advisory Circular AC 91.36D

Date: September 17, 2004 AC No: 91-36D

Subject: VISUAL FLIGHT RULES (VFR) FLIGHT NEAR NOISE-SENSITIVE AREAS Initiated by: ATO-R

1. **PURPOSE.** This Advisory Circular (AC) encourages pilots making VFR flights near noisesensitive areas to fly at altitudes higher than the minimum permitted by regulation and on flight paths that will reduce aircraft noise in such areas.
2. **EFFECTIVE DATE.** This advisory circular is effective on September 17, 2004.
3. **CANCELLATION.** Advisory Circular 91-36C, Visual Flight Rules (VFR) Flight Near Noise Sensitive Areas, dated October 19, 1984, is cancelled.
4. **AUTHORITY.** The FAA has authority to formulate policy regarding use of the navigable airspace (Title 49 United States Code, Section 40103).
5. **EXPLANATION OF CHANGES.** This AC has been updated to include a definition of “noisesensitive” area and add references to Public Law 100-91; the FAA Noise Policy for Management of Airspace Over Federally Managed Lands, dated November 1996; and the National Parks Air Tour Management Act of 2000, with other minor wording changes.
6. **BACKGROUND.**
 - a. Excessive aircraft noise can result in annoyance, inconvenience, or interference with the uses and enjoyment of property, and can adversely affect wildlife. It is particularly undesirable in areas where it interferes with normal activities associated with the area’s use, including residential, educational, health, and religious structures and sites, and parks, recreational areas (including areas with wilderness characteristics), wildlife refuges, and cultural and historical sites where a quiet setting is a generally recognized feature or attribute. Moreover, the FAA recognizes that there are locations in National Parks and other federally managed areas that have unique noise-sensitive values. The Noise Policy for Management of Airspace Over Federally Managed Areas, issued November 8, 1996, states that it is the policy of the FAA in its management of the navigable airspace over these locations to exercise leadership in achieving an appropriate balance between efficiency, technological practicability, and environmental concerns, while maintaining the highest level of safety.
 - b. The Federal Aviation Administration (FAA) receives complaints concerning low flying aircraft over noise sensitive areas such as National Parks, National Wildlife Refuges, Waterfowl Production Areas and Wilderness Areas. Congress addressed aircraft flights over Grand Canyon National Park in Public Law 100-91 and commercial air tour operations over other units of the National Park System (and tribal lands within or abutting such units) in the National Parks Air Tour Management Act of 2000.
 - c. Increased emphasis on improving the quality of the environment requires a continuing effort to provide relief and protection from low flying aircraft noise.
 - d. Potential noise impacts to noise-sensitive areas from low altitude aircraft flights can also be addressed through application of the voluntary practices set forth in this AC. Adherence to these practices is a practical indication of pilot concern for the environment, which will build support for aviation and alleviate the need for any additional statutory or regulatory actions.
7. **DEFINITION.** For the purposes of this AC, an area is “noise-sensitive” if noise interferes with normal activities associated with the area’s use. Examples of noise-sensitive areas include residential, educational, health, and religious structures and sites, and parks, recreational areas (including areas with wilderness characteristics), wildlife refuges, and cultural and historical sites where a quiet setting is a generally recognized feature or attribute.
8. **VOLUNTARY PRACTICES.**
 - a. Avoidance of noise-sensitive areas, if practical, is preferable to overflight at relatively low altitudes.
 - b. Pilots operating noise producing aircraft (fixed-wing, rotary-wing and hot air balloons) over noisesensitive areas should make every effort to fly not less than 2,000 feet above ground level (AGL), weather permitting. For the purpose of this AC, the ground level of noise-sensitive areas is defined to include the highest terrain within 2,000 feet AGL laterally of the route of flight, or the uppermost rim of a canyon or valley. The intent of the 2,000 feet AGL recommendation is to reduce potential interference with wildlife and complaints of noise disturbances caused by low flying aircraft over noise-sensitive areas.
 - c. Departure from or arrival to an airport, climb after take-off, and descent for landing should be made so as to avoid prolonged flight at low altitudes near noise-sensitive areas.
 - d. This advisory does not apply where it would conflict with Federal Aviation Regulations, air traffic control clearances or instructions, or where an altitude of less than 2,000 feet AGL is considered necessary by a pilot to operate safely.
9. **COOPERATIVE ACTIONS.** Aircraft operators, aviation associations, airport managers, and others are asked to assist in voluntary compliance with this AC by publicizing it and distributing information regarding known noise-sensitive areas.

Signed

Sabra W. Kaulia

The Portland Public Heliport Noise Abatement Program

In 1989, the city of Portland, Oregon and the Northwest Rotorcraft Association decided to build a heliport to provide direct air access to downtown Portland. During hearings to approve the facility, concern was expressed about the resulting noise increase in the area surrounding the heliport. In response to this concern, the following noise abatement program was put into effect:

Noise Abatement

Pilots are requested to utilize the following noise abatement procedures, whenever possible. Of course, it is the pilot's responsibility on each flight to determine the actual piloting techniques necessary to maintain safe flight operations.

1. *Flight Paths:* Maintain approach and departure paths over rivers and freeways. Avoid residential neighborhoods, the McCormick Pier Apartments, the convention center towers, and the piers for the Steel Bridge. Approach and depart over the Morrison, Broadway, and Grand Avenue bridges. [A map is provided with those features marked.]
2. *Steep Departure:* Depart at V_y (best rate of climb) when possible.
3. *Steep Approach:* Use steep approach angle when possible (PLASI is set for a 10° approach).
4. *Night Operations:* Avoid night approach from the north, as it passes near the McCormick Pier Apartments.
5. *Minimize Ground Operations:* Minimize the duration of warm-up or cool-down periods (typically two to three minutes). Do not idle at the heliport for prolonged periods.
6. *Avoid High Noise Regime:* Most helicopters have a high noise regime near a descent profile of 70 knots at 300 fpm. Pilots can avoid descending through this area by initiating the descent at a higher speed than normal.
7. *Gradual and Smooth Control Inputs:* Gradual and smooth control inputs result in reduced noise impact.
8. *Avoid Steep Turns:* Avoidance of steep turns result in reduced noise impact.
9. *Enroute Altitude:* Whenever possible, maintain 2,000 feet above ground level over residential neighborhoods and other noise-sensitive properties, as per FAA AC 91-36 "VFR Flight Near Noise-Sensitive Areas."
10. *Fly Neighborly:* Refer to the HAI Fly Neighborly Program for additional information on how to minimize helicopter noise impact.

Citizen concerns about helicopter noise emanating from the Portland Heliport should be brought to the attention of the Northwest Rotorcraft Association by calling 503-286-0927. All noise complaint calls will be logged. If the caller can identify the helicopter involved, follow-up calls will be made to the involved helicopter pilot and then back to the concerned citizen.

The Bureau of General Services maintains a Portland Heliport Noise Abatement Committee. When noise issues at the heliport cannot be easily resolved, the committee will be convened to assist in the resolution process, and the logs reviewed for pertinent information.

As concerns noise abatement of helicopter traffic in other parts of the city, it is noted that the Port of Portland has developed a plan of preferred helicopter flight routes for use in the greater Portland metropolitan area, especially as concerns helicopter traffic to and from Portland International Airport and Portland Hillsboro Airport. This program has been very successful and the heliport is still operating today.

The acronyms used in this Guide are defined below.

AGL Above Ground Level

BVI Blade-Vortex Interaction

dB Decibels, the basic unit for measuring the level of sounds.

dB(A) A-weighted sound level. A sound pressure level that has been weighted to approximate human hearing response to sound of different frequencies. Weighted sound pressure levels, such as the “A” weighting, are currently used for noise certification of light helicopters and small propeller-driven aircraft. In FAA Advisory Circular 36-3C, they are used as the basis for airport access restrictions that discriminate solely on the basis of noise level.

DNL Day-night sound level. A single-number measure of community noise exposure (expressed in the unit Ldn), introduced to help predict the effects on a population of the average long-term exposure to environmental noise. It is based on the equivalent sound level (Leq), but corrects for night-time noise intrusion. A ten-decibel correction is applied to noises heard between 10 P.M. and 7 A.M. to account for the increased annoyance of noises heard at night.

DNL uses the same energy equivalent concept as Leq. The specified time integration period is 24 hours. For assessing long-term exposure, the yearly average DNL is the specified metric in the FAA 14 CFR Part 150 noise compatibility planning process.

EPNL Effective perceived noise level. A measure of complex aircraft noise, expressed in decibels, that approximates human annoyance responses. It corrects for the duration of the noise event and the presence of audible pure tones and discrete frequencies such as the whine of a jet aircraft. The EPNL is used by the FAA as the noise certification metric for large transport and turbojet airplanes, as well as for helicopters.

fpm Feet per minute. A measure of speed used for the rate-of-climb or rate-of-descent of an aircraft.

KIAS Knots indicated airspeed. A measure of the speed of an aircraft.
[1 knot = 1.69 ft/sec = 101.3 ft/min = 1.15 mile/hour]

Leq Equivalent sound level expressed in decibels. The energy average noise level (usually A-weighted) integrated over some specified time. The purpose of Leq is to provide a single-number measure of noise level averaged over a specific period of time. When use for assessing community noise, Leq is normally defined over a 16 or 24 hour period.

mph Miles per hour. A measure of speed. [1 mph = 0.87 Knots]

PNL Perceived noise level. A rating of noisiness used in assessing aircraft noise, expressed in decibels. PNL is computed from sound pressure levels measured in octave or one-third octave frequency bands. An increase of ten decibels in PNL is equivalent to doubling the perceived noisiness. Currently, this measure is used by the FAA and foreign governmental agencies in the noise certification process for all turbojet-powered aircraft, and large propeller-driven transports.

R/C Rate of climb. The speed at which an aircraft is ascending.

R/D Rate of descent. The speed at which an aircraft is descending.

RPM Rotor revolutions per minute. The rotational speed at which an aircraft rotor is turning.

SEL Sound exposure level. A measure, expressed in decibels, of the effect of duration and magnitude for a single event. In typical aircraft noise model calculations, SEL is used in computing aircraft acoustical contribution to the equivalent sound level (Leq) and the day-night sound level (DNL).

Fly Neighborly Guide

Produced by the **Helicopter Association International**
Fly Neighborly Committee

Helicopter Association International
1635 Prince Street
Alexandria, VA 22314 USA

Phone: (703) 683-4646
Fax: (703) 683-4745
Web site: www.rotor.com
Email address: flyneighborly@rotor.com

BOROUGH OF HAINES HELICOPTER NOISE MEASUREMENT SURVEY

Mead & Hunt/BridgeNet International

September 2015

Project Tasks

- Monitor noise from March 9th through March 15th
- Analyze measurements using:
 - single event
 - cumulative metrics
- Prepare Noise Report to document measurement results
- Presentation to Borough

Study Location



Slide 3

Noise Monitoring Locations

- March 9 – 15, 2015
- Four sites chosen by the Borough
- Noise monitored 24-hours per day
 - Monitored noise levels from operations from SEABA Mile 26 base to heliski sites
 - Monitored ambient noise levels
- Duration of events
- Helicopter information (type, flight track, airport/SEABA base)
- Non-aircraft event information (type, activity)



Noise Analysis – Single Event

Single Event Noise Metrics

- Most closely models how the ear hears an individual event

Primary Single Event Noise Metrics Analyzed

- Maximum Noise Level (Lmax)
 - Maximum noise level of a single aircraft event
- Time Above Audible (TAA)
 - The amount of time helicopter event is audible

Noise Analysis – Cumulative Average

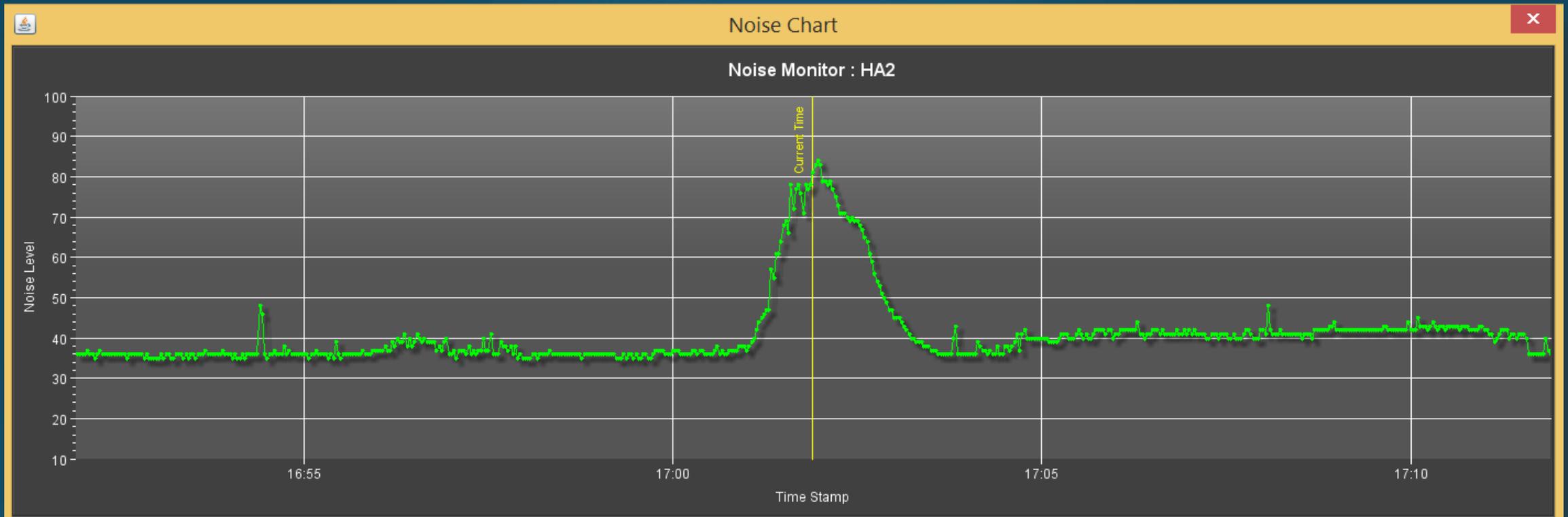
Cumulative Average Metrics

- An averaging of noise over a certain time period.
- Does not represent how the human ear hears a single event.
- Basis for Land Use criteria.

Primary Cumulative Average Metrics Analyzed

- Day Night Average Noise Level (DNL)
 - Averages noise from aircraft events over 24 hours.

Continuous Measurement of Noise

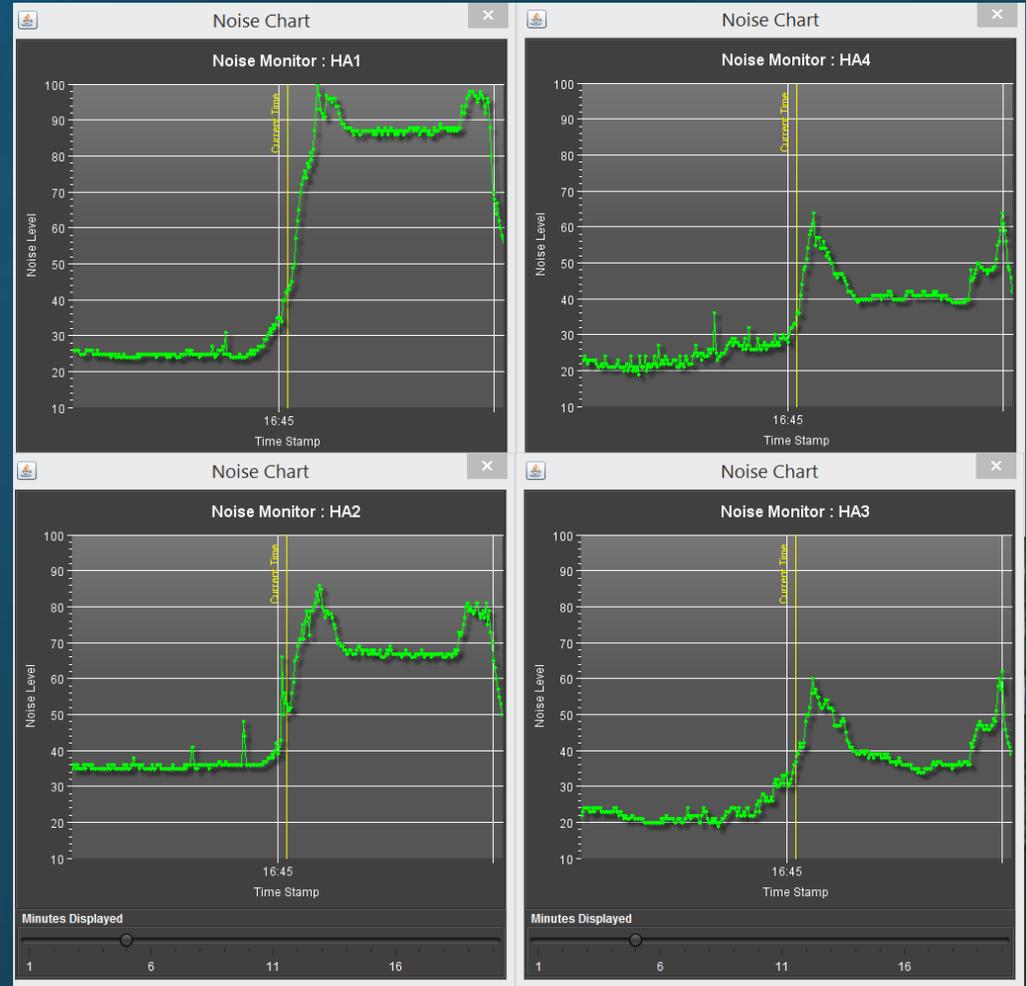
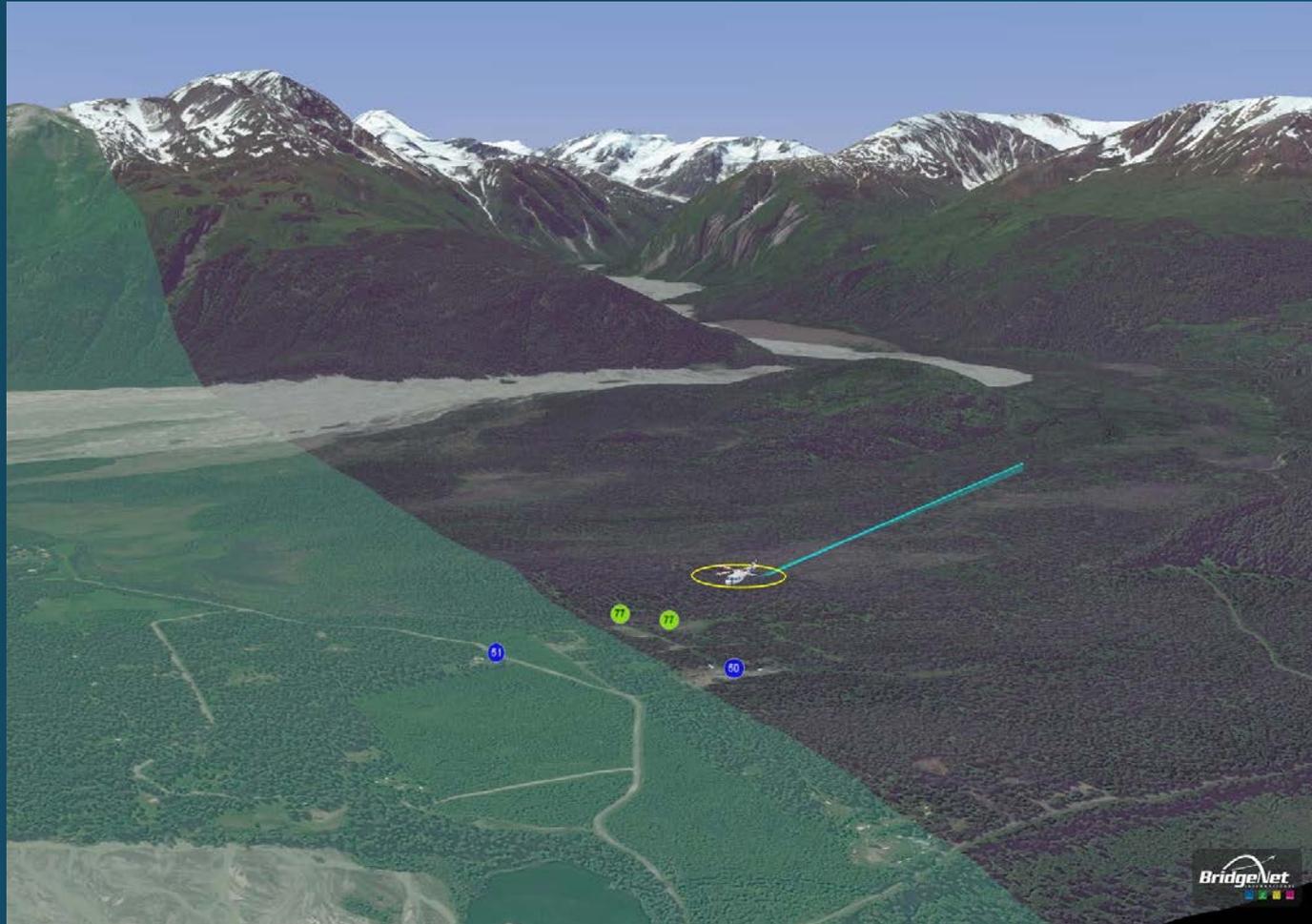


Aircraft Flight Information



Slide 8

Correlating Noise and Flight Data



Measured Aircraft Events

- Nine flight events between Mile 26 and the Heliski location.
- Number of events influenced by weather and flight demand.
- Additional flight events occurred outside of the scope of this project at Haines airport and the Mile 33 SEABA base.

Analysis Results – Ambient Noise

- Ambient Noise Levels
- Ambient Noise Levels are often very low

AMBIENT NOISE MEASUREMENT RESULTS
Borough of Haines Spring 2015 Helicopter Noise Survey

Site #	Name	Description	Statistical Noise Levels (dBA)				
			LMax	L10	L50	L90	LMin
1	HA1	Helipad	104	37	24	22	14
2	HA2	Home By Helipad	94	38	35	30	21
3	HA3	Roadway	77	32	20	18	16
4	HA4	Neighboring Estate	90	37	21	17	15

Analysis Results - Lmax

- Measured noise from each helicopter operation at the four monitors

MEASURED LMAX NOISE LEVELS OF IDENTIFIED HELICOPTER EVENTS

Borough of Haines Spring 2015 Helicopter Noise Survey

Period: March 9, 2015 to March 15, 2015

Event	Time	Operation	Maximum Noise Level (LMAX) dBA			
			HA1	HA2	HA3	HA4
1	3/9/2015 2:00 pm	Departure	100	84	73	64
2	3/9/2015 2:21 pm	Quick Turn	102	85	72	64
3	3/9/2015 4:45 pm	Quick Turn	100	87	63	65
4	3/9/2015 5:01 pm	Arrival	100	84	63	61
5	3/11/2015 8:12 am	Departure	101	86	69	68
6	3/14/2015 11:15 am	Arrival	100	85	65	63
7	3/14/2015 3:28 pm	Departure	100	82	62	66
8	3/14/2015 4:18 pm	Arrival	103	83	64	66
9	3/15/2015 8:21 am	Departure	104	85	68	71
Average			101	85	66	65

Analysis Results – Audible Duration Noise

- Time Above Ambient – number of minutes aircraft noise was above ambient levels

MEASURED TIME ABOVE AMBIENT NOISE MEASUREMENT RESULTS

Borough of Haines Spring 2015 Helicopter Noise Survey

Event	Time	Operation	Time Above Ambient (TAA) - Minutes			
			HA1	HA2	HA3	HA4
1	3/9/2015 2:00 pm	Departure	5	5	8	8
2	3/9/2015 2:21 pm	Quick Turn	11	10	12	12
3	3/9/2015 4:45 pm	Quick Turn	6	6	6	8
4	3/9/2015 5:01 pm	Arrival	3	3	3	2
5	3/11/2015 8:12 am	Departure	6	7	5	5
6	3/14/2015 11:15 am	Arrival	3	4	4	2
7	3/14/2015 3:28 pm	Departure	5	5	5	5
8	3/14/2015 4:18 pm	Arrival	3	3	4	3
9	3/15/2015 8:21 am	Departure	7	7	10	9
Average	(Minutes)		5	6	6	6

Analysis Results - DNL

- Average noise level at each monitoring site with aircraft & ambient noise.

AIRCRAFT DNL NOISE MEASUREMENT RESULTS
Borough of Haines Spring 2015 Helicopter Noise Survey

Site #	Name	Description	Aircraft DNL
1	HA1	Helipad	69
2	HA2	Home by Helipad	51
3	HA3	Roadway	30
4	HA4	Neighboring Estate	43*

Comments

- Citizens submitted comments on the draft report.
- Comments included concerns regarding:
 - Noise monitoring methodology
 - Data analysis
 - Helicopter altitudes
 - Small data sample of nine flights
 - Lack of location regulations for acceptable land uses re: 65 DNL
 - A-weighted used instead of C-weighted
 - Raw data not included in report
 - Average metrics not useful
 - Single event metrics more useful for decision making

Observations

- Loudest events at Site 1 closest to the helipad. Quietest events at Site 4 furthest from the helipad
- Helicopter events can be audible for long periods in an environment of low ambient
- “Quick Turn” operations are audible for extended periods
- As typical for Heliports, cumulative DNL noise levels are below the federal criteria
- 9 noise events during measurement period can be extrapolated to show higher activity

POTENTIAL DNL AND TAA LEVELS WITH VARIOUS LEVELS OF ACTIVITY

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Flights Events Per Day	Day Night Noise Level (DNL)				Daily Time Above Ambient (TAA), minutes			
	HA1	HA2	HA3	HA4	HA1	HA2	HA3	HA4
2	70	52	31	31	11	11	12	12
5	74	56	35	35	27	28	31	29
10	77	59	38	38	53	55	62	59
15	79	61	40	40	80	83	93	88
20	80	62	41	41	106	111	124	117

Krista Kielsmeier

From: Jan Hill
Sent: Wednesday, November 04, 2015 1:40 PM
To: Krista Kielsmeier
Subject: FW: term renewal

From: Donna Lambert
Sent: Wednesday, November 04, 2015 12:24 PM
To: Jan Hill
Subject: FW: term renewal

[Planning commission renewal](#)

From: Lee Heinmiller [<mailto:lee@alaskaindianarts.com>]
Sent: Tuesday, October 13, 2015 3:32 PM
To: Donna Lambert
Subject: Re: term renewal

Yes , I am interested in serving on the planning Commission for another term. I will send a letter to the Mayor. My contact info remains the same. I was able to keep my E-mail address and just change my server. Thanks, Lee

Sent from my iPhone

On Oct 13, 2015, at 1:11 PM, Donna Lambert <dlambert@haines.ak.us> wrote:

Hi Lee,

Your term on the Planning Commission will soon be expiring. Will you be seeking reappointment to your seat? Please let the clerk's office know if YES or NO. If yes, the mayor has requested that you submit your reasons for wanting to continue serving. Also if you could me current contact info for you so I can keep our files updated.

Thanks

Donna Lambert

Office Assistant
Haines Borough
907-766-2231 Ext 61