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13. SUPPLEMENTARY NOTES Report totals 2440 pages												
14. ABSTRACT Development and fielding of the F-35A represents one of the priority defense programs for the U.S. The F-35 program was initiated in the early 1990s to provide the premier strike fighter aircraft to the Air Force, Marine Corps, and Navy, as well as international partners for the next several decades. Currently, the Air Force is scheduled to acquire and field over 1,700 F-35As over the next several decades; this basing action is only a part of the Air Force's program to assure availability of combat-ready pilots and maintenance personnel in the most advanced fighter aircraft in the world. This Environmental Impact Statement focuses on the analysis of alternative locations for and the Records of Decision for the Air Force's initial operational wing locations.												
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16. SECURITY CLASSIFICATION OF: <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 33%; padding: 2px;">a. REPORT</td> <td style="width: 33%; padding: 2px;">b. ABSTRACT</td> <td style="width: 33%; padding: 2px;">c. THIS PAGE</td> </tr> <tr> <td style="text-align: center; padding: 2px;">Unclassified</td> <td style="text-align: center; padding: 2px;">SAR</td> <td style="text-align: center; padding: 2px;">SAR</td> </tr> </table>			a. REPORT	b. ABSTRACT	c. THIS PAGE	Unclassified	SAR	SAR	17. LIMITATION OF ABSTRACT SAR		18. NUMBER OF PAGES 	
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INSTRUCTIONS FOR COMPLETING SF 298

1. REPORT DATE. Full publication date, including day, month, if available. Must cite at least the year and be Year 2000 compliant, e.g. 30-06-1998; xx-06-1998; xx-xx-1998.

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5a. CONTRACT NUMBER. Enter all contract numbers as they appear in the report, e.g. F33615-86-C-5169.

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14. ABSTRACT. A brief (approximately 200 words) factual summary of the most significant information.

15. SUBJECT TERMS. Key words or phrases identifying major concepts in the report.

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17. LIMITATION OF ABSTRACT. This block must be completed to assign a distribution limitation to the abstract. Enter UU (Unclassified Unlimited) or SAR (Same as Report). An entry in this block is necessary if the abstract is to be limited.

Germanos, Nicholas M Civ USAF HQ ACC/A7NS

From: Laurie
Sent: Sunday, July 14, 2013 9:49 PM
To: Germanos, Nicholas M Civ USAF HQ ACC/A7NS
Subject: F35 Basing in Burlington, VT

Mr. Germanos,

I am opposed to the F35 basing in Burlington, VT and do not believe Vermont to be the right place to base these planes. I am concerned with the potential detrimental effects this plane will have upon the health of residents, property values, and quality of life for those of us living in the only area of affordable housing in South Burlington. I also would like to request an extension to the public comment period to offer the public 45 days starting from the date of the full revised DEIS release, based on the fact that over 100 pages of important information were not released until nearly three weeks after the release of the Revised DEIS.]

Thank you for your consideration.

Regards,

Laurie Sohrabi

Germanos, Nicholas M Civ USAF HQ ACC/A7NS

From: David Schein
Sent: Sunday, July 14, 2013 9:55 PM
To: Germanos, Nicholas M Civ USAF HQ ACC/A7NS
Subject: Please don't base the F-35s in Burlington

Already the noise of the F-16s in Burlington is intolerable. I work close to the airport and when these planes fly over all business stops for minutes, and everybody curses the Air National Guard. Basing the F-35s in the Burlington metro area will subject 10s of thousands of people to an increased level of noise pollution. There are much less densely populated areas that would welcome the F-35s. Many of people in Burlington, while being patriots, and all for defense, hate the idea of increased pollution. The airforce will face ceaseless demonstrations and bad PR if it chooses to base the planes in Burlington. Please consider a much less densely populated area as the site to base the F-35s.

--

David Schein

Germanos, Nicholas M Civ USAF HQ ACC/A7NS

From: Peter B. Schubart
Sent: Sunday, July 14, 2013 9:58 PM
To: Germanos, Nicholas M Civ USAF HQ ACC/A7NS
Cc: 'Peter B. Schubart'
Subject: Public Comment/ F-35 basing in South Burlington, VT/ OPPOSED

Dear Mr. Germanos,

I write to express my OPPOSITION to the basing of the F-35 in South Burlington, VT.

I oppose the basing of the F-35 in South Burlington because I believe:

It is dangerous to put an untested military plane in a densely populated area;

Chittenden County needs the affordable housing that will be most affected by the F-35, and rendered "unsuitable for residential use" by the noise contours created by the plane. This will unfairly impact the lower income residents of the homes in Winooski and in South Burlington, VT within the 65 dnl noise contour. A plane this loud does not belong in a densely populated residential area.]

Further, I am concerned about the integrity and transparency of this process. Vermont should have been knocked out of this evaluation in the first round. Somehow, it was represented that there was no "incompatible development" within the projected 65 dnl noise zone and higher risk crash areas, but most of Winooski, VT and large parts of South Burlington, VT are in these zones. Still, VTANG received a 10 (maximum score) in these two categories based on there being no development /housing within these zones when there are thousands of homes and businesses in these areas. I also believe that there may be a problem with the impacts being underestimated as older census data appears to have been used.]

Thank you.

Peter B. Schubart

Germanos, Nicholas M Civ USAF HQ ACC/A7NS

From: Greg Hostetler |
Sent: Sunday, July 14, 2013 10:01 PM
To: Germanos, Nicholas M Civ USAF HQ ACC/A7NS
Subject: F-35 basing in Burlington

Dear Mr. Germanos,

I am opposed to the F35 basing in Burlington, Vermont. As a resident of Winooski, I find the noise from the F16s to be unbearable at times and I cannot imagine anything louder. If we want our community to be an attractive place to live and work, we need to maintain the quality of life that we have. Bringing the F35 here is sure to lower our quality of life and property values. Please find another place to base it.

Sincerely,

Greg Hostetler

Germanos, Nicholas M Civ USAF HQ ACC/A7NS

From: Gary Roitmar
Sent: Sunday, July 14, 2013 10:01 PM
To: Germanos, Nicholas M Civ USAF HQ ACC/A7NS
Subject: Opposition to basing the F35 in Burlington, Vt.

Dear Mr. Germanos,

Since the Air Force has deemed our area in Winooski as being an undesirable place to live in and that we must advise potential buyers of this situation, it seems highly doubtful that as property owners, we will be unable to sell our homes. Further more, One of the most important reasons to oppose this basing is the effect it will have on children who live in the 65 and above db DNL zone.

We are not against the F-35's, it would be an honor to have them in Vermont but not in an area where our most vulnerable children and elderly people live... With respect to your position and our military, my wife and I oppose the F-35's coming to our area in Vermont...

Sincerely,

Gary and Sadie Khouri-Roitman

Germanos, Nicholas M Civ USAF HQ ACC/A7NS

From: debra.hazel
Sent: Sunday, July 14, 2013 10:03 PM
To: Germanos, Nicholas M Civ USAF HQ ACC/A7NS
Subject: respectfully opposed to the F35 beddown in BTV

Dear Sir,

While I support and appreciate the VTANG's presence and mission, I respectfully oppose the potential F35 beddown in BTV.

From the information (and misinformation) floating around this issue, I've done my best to determine fact from exaggeration on both sides. I choose to oppose the BTV beddown because the information I have gathered has raised several flags:

- * The F35 itself – over budget, production issues, safety issues]
- * The draft EIS report – incorrect information and questions raised that have gone] unanswered—resulting in a growing mistrust of the report findings.
- * The noise pollution – 4 times louder than the F16, could cause damage to my family, and] reduce my property value.

While I support our great nation's military, I believe I have a right to understand what's being asked of me for living in this area.

My neighborhood is on the edge of the noise impact map. Proponents tell me if I don't like it, I can move.

I love my neighbors and my larger community. My 12yo and 4yo children attend schools in the area. We have a wonderful neighborhood where folks know each other by name – we know and watch out for each others' kids and pets, several families get together every few weeks for ice cream night, we have an annual neighborhood tag sale followed by a potluck picnic, we borrow sugar and butter and tools, we pass down clothes and toys, we meet for coffee, we have neighborhood book clubs, walking and running groups, dinner moms, dads throwing footballs down the street to each other and their kids, basketball hoops lining the streets ready for a pickup game. This is not a typical neighborhood these days, most of my friends in other parts of VT and elsewhere often don't know who lives next door. I don't believe I could find this level of community and trust anywhere else. This is not a community that changes place often – most folks have lived here or plan to live here 20-40+ years. We have elderly we look out for, snowbirds, empty-nesters, school-age families, and young couples coming in as well. Lots of dogs... we seem to start with a dog, then a kid, then a couple kids – and before you know it, we've been here 20 years. That's me, and most of the folks around me, in different timeframes. I love it. It's invaluable.

Please consider the total environmental impact on the South Burlington, Vermont community should the Air Force decide to base F35s in this area. While I greatly appreciate the service of our nation's men and women, I respectfully oppose this location.

Thank you for your consideration.

Germanos, Nicholas M Civ USAF HQ ACC/A7NS

From: Steve Hulse
Sent: Sunday, July 14, 2013 10:05 PM
To: Germanos, Nicholas M Civ USAF HQ ACC/A7NS
Subject: Save our skies

I am opposed to the F35 basing in Burlington Vt because it will degrade and possibly destroy the quality of life of 8,000 people, it will pollute our environment and there are many unanswered questions about the base selection process.
Thank you for considering my request

Anne Marie Humbert

Germanos, Nicholas M Civ USAF HQ ACC/A7NS

From: Steve Hulse
Sent: Sunday, July 14, 2013 10:08 PM
To: Germanos, Nicholas M Civ USAF HQ ACC/A7NS
Subject: Extension

"I am writing to request a brief extension of the Public Comment period, based upon the fact that at least 100 pages of important information were not released until nearly 3 weeks after the Revised Draft Environmental Impact Statement was released. Given that this section included substantive questions that people were asking, and the important information given by the Air Force in response to those questions, we believe that it is only reasonable to offer people ample time to consider that information. Please extend the Public Comment period to offer the public 45 days starting from the date that the FULL Revised DEIS was released, rather than May 31st, the date on which the incomplete Revised DEIS was released. As you know, there is great controversy over this basing in our community. It is essential that Vermont citizens be given the most complete opportunity to read, understand, and respond to the information being released by the Air Force. It's crucial that the process by which this decision is made be free of further error."

Germanos, Nicholas M Civ USAF HQ ACC/A7NS

From: Cohen, Abina I.
Sent: Sunday, July 14, 2013 10:16 PM
To: Germanos, Nicholas M Civ USAF HQ ACC/A7NS
Subject: Stop F35

Hello Mr Germanos

Recently my grandmother moved into a beautiful house along the Winooski River. Every morning I stay here when the F16 flies overhead, I wake up frightened for my life with my heart racing. Burlington is a peaceful community and I feel blessed to have grown up here. The F35 will leave hundreds of citizens unable to sell their property for the proper value and in many cases unable to move out of a harmful environment. I very much hope that you will not base the F 35 here in Burlington when there are many other places where there are fewer people in the immediate area. Also this will not bring jobs to the community but completely destroy the rapidly growing community of Winooski.

Even the F16 drowns out phone calls, the radio, personal conversations. A plane four times louder will cause hearing loss cognitive impairments in children and a new nightmare for the immigrant population who have fled war torn countries and to whom the sound of fighter jets does not mean freedom. The newest model after the F35 the F22 has never had a mission primarily because the rest of the world has not kept up with our technological advances. This plane is unnecessary and is wasting money that could be used on more productive peaceful endeavors.

STOP THE F35!!!!!!

Sincerely,

Abina Isabella Cohen

Germanos, Nicholas M Civ USAF HQ ACC/A7NS

From:
Sent: Sunday, July 14, 2013 10:22 PM
To: Germanos, Nicholas M Civ USAF HQ ACC/A7NS
Subject: NO to basing the F-35 in Burlington, Vermont

For the record, I am writing to say that the F-35 should not be based in Burlington. The F-16s are so loud that a person cannot hear somebody right next to them when they take off. I cannot imagine an aircraft 4 times louder. These are residential neighborhoods that the aircraft will be flying over.

I need not list all the reasons; you know them all by now. Business concerns should not win out over people's concerns.

Sincerely,

Daniel Weiss
Burlington, Vermont

Germanos, Nicholas M Civ USAF HQ ACC/A7NS

From: Hal Cochran
Sent: Sunday, July 14, 2013 10:24 PM
To: Germanos, Nicholas M Civ USAF HQ ACC/A7NS
Subject: F-35 basing at BTV

Dear Mr. Germonos:

I oppose the basing of F-35 aircraft at Burlington (VT) International Airport for the same reason I oppose the present basing of F-16s: noise. In case the Air Force hasn't noticed, the airport is in the middle of a metropolitan area, the most populous in Vermont. The F-16s take off and land over densely populated urban areas. I live in Burlington, almost exactly one perpendicular mile from the takeoff path over Winooski. When the F-16s take off in that direction, the noise is so loud that conversation is impossible. In the long term, the stress this causes is harmful to our health. The F-35s would be worse. Hal Cochran,

Germanos, Nicholas M Civ USAF HQ ACC/A7NS

From: Steve Jones
Sent: Sunday, July 14, 2013 10:25 PM
To: Germanos, Nicholas M Civ USAF HQ ACC/A7NS
Subject: F-35 to BTV

I think you will find the majority of people living in the vicinity of the Burlington Airport are in support of basing the F-35 here. The people speaking against it are more for reducing the size of the military than anything to do with the impact of the F-35 in Vermont. Both my wife and I are all for basing the F-35 here. Thank you!

Steve and Elizabeth Jones;

Sent from Yahoo! Mail on Android

Germanos, Nicholas M Civ USAF HQ ACC/A7NS

From: Danielle J. DeMarse-Welsh
Sent: Sunday, July 14, 2013 10:26 PM
To: Germanos, Nicholas M Civ USAF HQ ACC/A7NS
Subject: I oppose F-35 in Burlington, VT

Hello,

I am writing you to you express my opposition to the basing of F-35 jets in Burlington, VT. Our airport is located in a densely populated area and thousands of families will be impacted by the increased noise of the F-35. Please listen to the people, not our politicians and those who stand to profit from the basing.

With respect and sincerity,
Danielle DeMarse-Welsh,

Germanos, Nicholas M Civ USAF HQ ACC/A7NS

From: Betty Miles
Sent: Sunday, July 14, 2013 10:34 PM
To: Germanos, Nicholas M Civ USAF HQ ACC/A7NS
Subject: F35 basing in Burlington VT

Dear Mr. Germanos:

I am opposed to the F35 basing in Burlington, Vermont. I am convinced it will degrade the quality of life of 8,00 people in the area, harm 500 Vermont children whose cognitive abilities will be affected, and lower the home values of 4,000 households.

Please save the health, home values and community of so many Vermonters by not selecting a base that the Air Force says is not environmentally preferred.

Thank you.

Elizabeth B. Miles

Germanos, Nicholas M Civ USAF HQ ACC/A7NS

From: Leonard F. Swift
Sent: Sunday, July 14, 2013 10:37 PM
To: Germanos, Nicholas M Civ USAF HQ ACC/A7NS
Subject: F35 Basing

> I am opposed to the F35 Basing in Vermont because:

- >
- > 1. It will harm 1,500 Vermont children: physically, emotionally and cognitively]
- > 2. It will lower the home values of 4,000 households]
- >
- > 3. It will degrade and possibly destroy the quality of life of 8,000 people]
- >
- > 4. It will risk the lives of thousands of people because of a greater probability of]
crashes from a warplane with no established safety record
- >
- > 5. It disproportionately negatively affects minorities and low-income people]
- >
- > 6. It will pollute our environment]
- >
- > 7. The AF says the F-35 will bring environmental harm to our communities
- >
- > 8. The AF says that Burlington is NOT the environmentally preferred base
- >
- > 9. Substantive errors were made in the scoring process]
- >
- > 10. Substantive errors were made in the Draft EIS]
- >
- > 11. There are many unanswered questions about the base selection process]

Thank you for considering this. Leonard F. Swift

>

Germanos, Nicholas M Civ USAF HQ ACC/A7NS

From: Colleen Armstrong
Sent: Sunday, July 14, 2013 10:38 PM
To: Germanos, Nicholas M Civ USAF HQ ACC/A7NS
Subject: Re: F-35's

Good evening,

I apologize for the previous, empty message!

I am writing in support of bringing the F-35 to the Vermont Air National Guard base in Burlington, Vermont.

I am aware of the "issues/concerns" around bringing the new planes to Burlington, but based upon the recent EIS, I feel that my concerns were addressed.

Also, on a personal note, I witnessed the attack on the WTC South Tower, ran from the collapse of that South WTC Tower, and was in Battery Park helping people onto boats when the North Tower collapsed. My mother - who was visiting me down in NYC that fateful day - and I both vividly remember the Green Mountain Boys flying overhead minutes after the collapse of the South Tower. Upon hearing the jets, people initially started to panic, but my Mom quickly proceeded to calm everyone down by explaining, "No, don't worry! The planes you hear are the GOOD GUYS! They are here to protect us!" (My Dad was a pilot in the Air Force, years ago, so she recognized the jet's distinct sound.) While we were all still scared, knowing that we were protected from above helped allay some of our worry.

I didn't learn until several years later that it was the Green Mountain Boys who had flown so quickly down to protect NYC, but upon learning that, I was even more proud of the work the men and women at VTANG do everyday to protect our country.

So again, I am in FULL support of bringing the F-35 to the VTANG base in Burlington, VT, so that they can continue to help protect our region and country. Additionally, I also support it for the economic benefit the base provides to our area because of the large number of service men and women employed by VTANG, but also all the local businesses who support the guard base.

Thank you for your consideration. Please let me know if I can be of any further assistance.

Sincerely,

Colleen C. Armstrong

Germanos, Nicholas M Civ USAF HQ ACC/A7NS

From: Betty Miles
Sent: Sunday, July 14, 2013 10:44 PM
To: Germanos, Nicholas M Civ USAF HQ ACC/A7NS
Subject: F35 Air Guard Base

Dear Mr.Germanos:

I have just learned that in fact the USAF will not close the Burlington Air Guard Base if the F35s are not based there.

It's so important for Vermonters to hear and understand this fact before a decision is made. There is serious controversy in our community over the possible basing of F35s. Please extend the Public Comment period to 45 days starting from the date that the Full Revised DEIS was released, to give citizens the best chance to read, understand and respond to this more complete information.]

Thank you.

Elizabeth B.Miles

Germanos, Nicholas M Civ USAF HQ ACC/A7NS

From: Don Jamison
Sent: Sunday, July 14, 2013 10:47 PM
To: Germanos, Nicholas M Civ USAF HQ ACC/A7NS
Subject: Opposition to basing F-35s in Burlington, Vermont

Dear Mr. Germanos,

This is to register my opposition to basing F-35 aircraft in Burlington, Vermont. The base is simply too close to a metropolitan area. The noise these planes create is reputed to be much greater than that of the F-16, and even that older airplane is just barely tolerable - especially in the immediate neighborhood of the airport. Please find a place farther from civilians to host the F-35s.

Regards,

Donald Jamison

Germanos, Nicholas M Civ USAF HQ ACC/A7NS

From: Judy Brook
Sent: Sunday, July 14, 2013 10:47 PM
To: Germanos, Nicholas M Civ USAF HQ ACC/A7NS
Subject: F-35s in Burlington, VT

Dear Sir,

I am against basing the F-35s in the Burlington/South Burlington area. I moved here 25 years ago to get away from the noise from Newark International Airport. I lived under a flight path. My children and I heard one plane every 30 seconds. It negatively affected our quality of life. We moved to Vermont for the peace and quiet. Please do not base the larger jets here. They do not belong in a residential neighborhood.

Yours,
Judy Brook

Germanos, Nicholas M Civ USAF HQ ACC/A7NS

From: Sharon Zukowski
Sent: Sunday, July 14, 2013 10:48 PM
To: Germanos, Nicholas M Civ USAF HQ ACC/A7NS

A wealth of information on your site, but not easy way to give a public comment , what to say, but not where to say it. Be aware that for many people this is not our only public participation. There is world hunger, overdevelopment, government corruption, poverty, storm water, deforestation..... Don't make it so that people who don't have time to make a big contribution, can't easily make a public comment. I have spent 30 mintues looking for how to do that and now I am done. Just a suggestion. The first thing on your website should be a link for people to make their public comments. Some of us don't have the time to weed through all of that information. I get the passion, but your website is overwhelming for the average person to swim through.

Germanos, Nicholas M Civ USAF HQ ACC/A7NS

From: Jim Olinger
Sent: Sunday, July 14, 2013 10:48 PM
To: Germanos, Nicholas M Civ USAF HQ ACC/A7NS
Subject: F35s in Vermont

Sir,

I strongly feel it is wrong for the F35s to be stationed in Burlington. The area is too populated, the environmental issues too detrimental and there is no tactical advantage to this site. The plane is not designed to be useful in the type of conflicts that might arise in today's world, and does not justify the money that is being spent on it. The F35s should not be stationed in Vermont and the planes program should be discontinued.

Thank You,
Jim Olinger

Germanos, Nicholas M Civ USAF HQ ACC/A7NS

From: Sharon Zukowski
Sent: Sunday, July 14, 2013 10:58 PM
To: Germanos, Nicholas M Civ USAF HQ ACC/A7NS
Subject: Opposition to the F35s

My daughter lives in Winooski in the crash zone. She complains that she gets woken up by the jets going over her apartment. She worries about being in the crash zone and worries about the health effects of the noise from the jets. I also worry for my daughter's health and her safety and oppose the F35s. Furthermore,

I request a request a brief extension of the Public Comment period, based upon the fact that at least 100 pages of important information were not released until nearly 3 weeks after the Revised Draft Environmental Impact Statement was released. Given that this section included substantive questions that people were asking, and the important information given by the Air Force in response to those questions, we believe that it is only reasonable to offer people ample time to consider that information. Please extend the Public Comment period to offer the public 45 days starting from the date that the FULL Revised DEIS was released, rather than May 31st, the date on which the incomplete Revised DEIS was released. As you know, there is great controversy over this basing in our community. It is essential that Vermont citizens be given the most complete opportunity to read, understand, and respond to the information being released by the Air Force. It's crucial that the process by which this decision is made be free of further error.]

Sharon Zukowski
Essex, Vermont

Germanos, Nicholas M Civ USAF HQ ACC/A7NS

From: Kelly Dougherty
Sent: Sunday, July 14, 2013 11:07 PM
To: Germanos, Nicholas M Civ USAF HQ ACC/A7NS
Subject: oppose F-35 in Vermont

Mr. Germanos,

I would like to formally register my opposition to basing the F-35 in Vermont.

I live in South Burlington, VT, and work in Winooski, VT - both are communities that are directly affected currently by the F-16s, and potentially by the F-35.

Vermont is simply not the best choice for this plan. Current noise levels are unbearable with the F-16s - and the flight path is directly over many residential communities and schools in a densely populated area. In addition to noise concerns, there is no "buffer zone" that would provide added protection for potential accidents.

Many of us live in Vermont specifically because of its quiet beauty and safe environment. The F-35 is simply not compatible with the Vermont way of life.

I strongly urge you to reconsider basing the F-35 in Vermont. We do not want it here!

Respectfully,

Kelly Dougherty

Germanos, Nicholas M Civ USAF HQ ACC/A7NS

From: adrienne goulette
Sent: Sunday, July 14, 2013 11:14 PM
To: Germanos, Nicholas M Civ USAF HQ ACC/A7NS
Subject: Opposition to the F35

Dear Mr. Germanos,

I am opposed to the basing of the F35 fighter jet plane in South Burlington, Vermont. Basing the F35 in South Burlington will disproportionately affect minorities and low-income people that live in the surrounding communities, especially Winooski. Winooski touts themselves as being a designated Refugee Resettlement community, and home to many diverse newcomers to our country. Winooski is the most racially diverse community in Vermont. That being said, basing the F35 will only cause more spurts of PTSD, stress, anxiety, and health problems for these citizens. I myself have experienced numerous times waking up in a confused state with a racing heart-beat because a F16 was flying overhead to land at odd hours of the morning and night. The F35 will also impact the Community College of Vermont and how classes are conducted. A decline in property values is also another huge reason why the F35 shouldn't be based in Burlington, VT. The F35 is also too much of a risk to our community because it serves a greater probability of crashes from a warplane with no established safety record. Lastly, the basing of the F35 for Burlington, Vermont was fudged. There is evidence that Vermont was not the preferred state for basing the F35. Please do not consider Burlington for the basing of this plane.

Thank You,
Adrienne Goulette

Germanos, Nicholas M Civ USAF HQ ACC/A7NS

From: Carl Severance
Sent: Sunday, July 14, 2013 11:17 PM
To: Germanos, Nicholas M Civ USAF HQ ACC/A7NS
Subject: Oppose F-35 Basing in Burlington, Vermont

Dear Mr. Germanos,

I am a life-long Vermonter and a resident of Winooski, Vermont. I have lived here for the past 15 years. I have worked in Winooski for the past 12 years. I would like to voice my opposition to having the F-35 aircraft based at the Burlington International Airport.

I am most concerned about property values for myself and my neighbors who live within the 65 db DNL contour. Our homes are our biggest investments and we can't afford to lose equity in them. As you know, the Federal Aviation Administration has identified land use within this noise level as "not compatible" for residential use. Increased noise from the F-35 is likely to cause increased health and safety risks that would be detrimental to Winooski. Our small city recently completed a wonderful downtown redevelopment project that has helped toward creating a truly vibrant community. To me, the F-35 represents a step in the wrong direction.

Thanks for your time,

Carl Severance

Germanos, Nicholas M Civ USAF HQ ACC/A7NS

From: adrienne goulette
Sent: Sunday, July 14, 2013 11:17 PM
To: Germanos, Nicholas M Civ USAF HQ ACC/A7NS
Subject: request a delay in the public comment period timeline

"I am writing to request a brief extension of the Public Comment period, based upon the fact that at least 100 pages of important information were not released until nearly 3 weeks after the Revised Draft Environmental Impact Statement was released. Given that this section included substantive questions that people were asking, and the important information given by the Air Force in response to those questions, we believe that it is only reasonable to offer people ample time to consider that information. Please extend the Public Comment period to offer the public 45 days starting from the date that the FULL Revised DEIS was released, rather than May 31st, the date on which the incomplete Revised DEIS was released. As you know, there is great controversy over this basing in our community. It is essential that Vermont citizens be given the most complete opportunity to read, understand, and respond to the information being released by the Air Force. It's crucial that the process by which this decision is made be free of further error."

Thank You,
Adrienne Goulette

Germanos, Nicholas M Civ USAF HQ ACC/A7NS

From: Anne MacLeod
Sent: Monday, July 15, 2013 12:51 PM
To: Germanos, Nicholas M Civ USAF HQ ACC/A7NS
Subject: Opposed to Basing F-35s in Burlington, Vermont
Attachments: Germanos_7-14-13.docx

Nick,

You were kind enough to speak to me more than once, roughly a year ago. I later took a backseat in the opposition for personal reasons but... I'm baaaack! What an extraordinary bunch of people has been working on this all along. My letter in opposition to the basing is attached and I am mailing a hard copy, too. We are definitely taking the opposition to our Congressmen; the march held on Saturday was remarkable. (It drew at least 270 people, not the '100' our local paper described. I am an event planner and can count 100 people easily. It was far, far more people than I could count from where I was, but one of our number - a highly regarded lawyer - counted and I believe him. I could not see the back of the march from where I was, with at least 50 people in front of me. He is one of those people who totally understands that there is no power in exaggeration.

Many thanks,

Anne

Anne MacLeod

July 14, 2013

Mr. Nicholas Germanos

Project Manager, F-35A Operational Basing

HQ ACC/A7PS

129 Andrews Street, Suite 332

Langley AFB, VA 23665-2769

Dear Mr. Germanos and United States Air Force,

I vehemently oppose the basing of F-35 fighter jets at Burlington, Vermont's airport/Air National Guard base. I have read the details of the US Air Force's environmental impact statements and am deeply dismayed, like so many others, that in light of the severe negative environmental impacts readily described by the Air Force, this area is even being considered. Burlington must be withdrawn from consideration.

Of particular concern to me are 1) the negative noise impact on young children, who cannot be expected to comprehend much less rationalize the terrifying roar of fighter jets, and upon war-traumatized refugees and New Americans 2) the unacceptable crash risk and 3) the economic threat to the property owners and therefore the towns that lie within the new noise contours. I am personally outraged that our greatest military minds consider it acceptable to build a fighter jet that is even louder than the F-16, and expect tax payers not only to fund it but to tolerate its ear-splitting noise. This stands in direct opposition to the sworn purpose of our military: to protect our lives and our way of life.

I would write considerably more but my fellow opponent Katie Kirby has summarized the situation far more cogently than I possibly can. I entirely concur with her summation, which will be reaching you separately. Of all of her points, I would emphasize only that this is an incredibly intelligent and persistent group of opponents. This opposition is still growing and it is not going away. Quite the opposite. I am one of many who are fully prepared to join in any lawsuits necessary to the extent of my financial capacity, should the decision go against us.

Please note that our community has witnessed some remarkable manipulation of 'information' by proponents of the basing, including the loudly proclaimed lie that the air base will close down without the F-35s. This behavior should call into question the validity of many if not most of the 'pro' comments. How many individuals are

responding based on a serious distortion of the facts? In contrast, the opposition has in all of its activities paid scrupulous attention to the facts, having no desire to mislead the public -- and no need, given that the USAF information clearly lays out the negative impacts for all to see. The opposition participants have held themselves and each other to an extremely high standard. I am happy to report that they -- we -- show no sign of stopping. If Burlington is not withdrawn from consideration, the Air Force is likely to have a very large mess on its hands, for a very long time.

Sincerely,

Anne MacLeod

I am a former elementary school teacher and former producer/writer of educational television programming for Children's Television Workshop, formerly Sesame Workshop, in New York City. I also lived abroad for many years before returning home to Vermont, where I work for a local nonprofit. I bought my 1900 era home in Winooski in 2007; despite my relatively successful career, I could not afford to buy in other neighborhoods near Burlington and I work some unusual and intensive hours downtown. Here is a photo of the mature perennial garden I work hard to maintain. (The photo makes it look larger than it is, but it is very nice.) I am proud that my tax dollars help support schools attended by a diverse population of refugee children living in Winooski. Our little city already bears a burden in support of this country. As it is, sometimes the F-16s fly so low over my home as they come in to land that I can make out the pilots' heads in the cockpits. We cannot and will not bear more.



Germanos, Nicholas M Civ USAF HQ ACC/A7NS

From: michele palardy
Sent: Monday, July 15, 2013 12:52 PM
To: Germanos, Nicholas M Civ USAF HQ ACC/A7NS
Subject: No F-35 Rally & March Videos in Burlington, Vermont

Dear Mr. Germanos,

My name is Michele Palardy and I am strongly opposed to the basing of the F-35A at the Burlington International Airport. I was at the No F-35 Rally & March on Saturday July 13th, 2013. I have made 3 short youtube videos of the event and I would like to make these my comments to the basing of the F-35A in Vermont.

Here are the links below:

Part 1

<http://www.youtube.com/watch?v=W-2A36x8lfs>

Part 2

<http://www.youtube.com/watch?v=bsbbUCGRT8w>

Part 3

http://www.youtube.com/watch?v=DiGOhyN_VHA

Could you please confirm that you received and watched these videos at your earliest convenience? Thank you very much, Michele Palardy.

Germanos, Nicholas M Civ USAF HQ ACC/A7NS

From: jean sienkewicz
Sent: Monday, July 15, 2013 12:54 PM
To: Germanos, Nicholas M Civ USAF HQ ACC/A7NS
Subject: opposition to F35 basing

Dear sir,

My name is Jean Sienkewicz. I am a resident of Winooski VT and I am **strongly opposed** to the F35 basing in Burlington VT because of the damaging impact it will have on Winooski as a municipality, as well as my and my family's health and well-being.

Specifically I am concerned about the densely populated area surrounding Burlington and South Burlington where the airport is located; the potentiality for a crash is significantly higher than other planes (such as the F-16's, which currently fly overhead). I am also especially concerned about the excessive noise that the F35's will generate. This is again as compared to the F-16's, which already stop conversations mid-sentence for the duration of their passing and cause residents (including myself on many an occasion) to cover their ears, and the F35's are expected to generate a noise level "incompatible with residential use" as reported in the revised DEIS report the Air Force has issued. This report does not quantify **how** the 65dB DNL will impact the health (particularly of children within Winooski), the disabled (of which my partner is one) or elderly, nor property values (we are new home-owners in this city as well).

I have no problem supporting the Air National Guard of Vermont. I feel they have had an amazing record of service for our State. However, I don't feel that the benefits offered to the ANG by bringing the F35's to VT will outweigh the detrimental effect it will have on our community! The biggest frustration I have with this issue is that Vermont is being given serious consideration despite the fact that there are several potential sites far better suited to house the F35's.

I appreciate the ability to offer input into this matter and your consideration.

Sincerely Jean Sienkewicz

Germanos, Nicholas M Civ USAF HQ ACC/A7NS

From: Don DeMercurio
Sent: Monday, July 15, 2013 12:58 PM
To: Germanos, Nicholas M Civ USAF HQ ACC/A7NS
Subject: F-35 Burlington

July 15, 2013

Transmitted via email to: Nicholas Germanos nicholas.germanos@langley.af.mil
<<mailto:nicholas.germanos@langley.af.mil>>

Mr. Nicholas Germanos
HQ ACC/A7PS
129 Andrews St., Suite 332
Langley AFB, VA 23665-2769

Dear Sir:

As a resident owner in Winooski, Vermont I have been following the unfolding of information and rhetoric regarding the move to bring the F-35's to the Burlington airport. I feel strongly that the information being used to justify this move has been mis-represented and without consideration for the very real health concerns and quality of life issues and property values for our residents in Winooski.

Winooski town residents have overwhelmingly spoken out in opposition to this plan as has our town council and I add my name and voice to those who ask that this plane not be brought to our area.

Sincerely,

Donald J DeMercurio

Germanos, Nicholas M Civ USAF HQ ACC/A7NS

From: Merriam, Laura A
Sent: Monday, July 15, 2013 1:04 PM
To: Germanos, Nicholas M Civ USAF HQ ACC/A7NS
Subject: F-35 basing in Burlington, VT - in favor

I am writing to express my support for basing of the F-35 fighter plane in Burlington, Vermont. I have no idea if the F-35 is the right investment for our military, but if our government and the military decide that it is, I would be proud to have it based at our National Guard facility in Burlington. There is no one that I would rather have guarding our nation's borders, than the men & women from our community that serve in the National Guard. Thank you for the opportunity to weigh in on this matter.
Laura Merriam

Germanos, Nicholas M Civ USAF HQ ACC/A7NS

From: Peter Cook
Sent: Monday, July 15, 2013 1:08 PM
To: Germanos, Nicholas M Civ USAF HQ ACC/A7NS
Subject: Opposition to Basing of F35 at Burlington International Airport

Dear Mr. Germanos:

I write to strongly oppose the proposal to have the F35 bedded down at Burlington International Airport. I write as a recent homeowner in Burlington who lives not far from the proposed flight path for the F35 in Winooski. I also write as the Senior Minister of First Congregational Church, United Church of Christ, in Burlington. As pastor of this church, I feel I have a duty to lift my voice if I think there are proposals or developments which may pose significant economic, environmental and health struggles for people in my church and our community as a whole.

I have tried to have an open mind by listening to both sides. It is important to me that I listen to all the arguments and facts. After reading and listening for awhile now, I have concluded that the proposed benefits of basing the F35 at the Burlington airport have not been sufficiently substantiated by its proponents and is, therefore, not worthy of my support.

Proponents claim that the sound which emanates from the F35 will be approximately the same as the F16. They also claim that the sound can be mitigated. And yet the Revised Environmental Impact Study shows that the noise cannot be mitigated and will be four times louder than the F16. I am concerned about this impact of increased noise on many levels:

1. Studies show that aircraft noise has an adverse health effect on children. While current levels have some affect on our children already, the prospect that we would support a proposal to increase noise fourfold while affecting an even wider expanse of our population is not right. We have a moral obligation as American citizens to protect the most vulnerable in our country.]

2. 4,000 additional homes will be rendered unfit for residential use causing their values to decline. Moreover, many of these homes will be impossible to resell at a fair price because they are designated as unfit for residential use. Indeed, I worry about the value of my own recently purchased home. It is also very unclear whether those homes in the direct flight path and crash zone would be eligible for compensation and, moreover, whether that compensation would be truly sufficient to cover the loss of home value and real cost of relocation. If compensation were forthcoming, however, it would not be offered to homeowners who are affected but who narrowly miss living in the residential zone for homeowners that may be eligible for compensation. Far too many of the people in the affected area already have a precarious financial situation and can scarcely afford more financial risk.]

3. At his time in our nation's history, we are just crawling out of the worst recession since the Great Depression. Proponents argue that the prospect of increased commercial development supports the F35 basing. However, such economic benefit comes at the expense of far more people being placed in a precarious economic position because of drops in their home values. This can also lead to foreclosure because many homes are rendered unfit for the residential use. While a few businesses may benefit, many more businesses would be adversely affected including the residential real estate, home mortgage and tourism industries.

Proponents claim that the F35 is a better aircraft than the F16. It is my understanding that the F16 is, in fact, a better plane for military operations and is vastly cheaper than the F35. It is also my understanding that the Air Force has identified many design flaws in the F35 which cannot be resolved which is why they have decided to retrofit the entire fleet of F16s. Given the design flaws of the F35, I am concerned about the safety of basing the F35 in this densely populated area given the higher propensity of this air craft to crash than the F16.

I am one who has respect for what our military does in this country and more specifically the Vermont Air National Guard. But supporting the military and Guard does not absolve us from asking critical questions about the best use of tax payer resources to mount a strong defense in the 21st century. We also have the duty to ask whether proposed weapons systems will have other adverse effects on military personnel. As one who pastors to military families, I am concerned about cut backs on benefits and jobs for our military personnel to pay for a weapons system which is ineffective and unreasonably expensive like the F35. One claim made is that the Guard will go out of business if we don't get the F35. Since it seems clear the F16 will continue to be used indefinitely, there is no prospect the Guard will go out of business. The Guard's future also might be even more secure if it considers adopting additional missions to mount a defense including, for instance, programs to prevent cyber warfare which poses to us a greater threat and cannot be addressed with fighter planes of any kind.

Thank you for your consideration. My prayers are with you and your colleagues as you deliberate on this important matter and trust you will arrive at a decision which will protect our community from harm.

Sincerely,

Peter Cook

Senior Minister

Germanos, Nicholas M Civ USAF HQ ACC/A7NS

From: Joyce Stanley
Sent: Monday, July 15, 2013 1:10 PM
To: Germanos, Nicholas M Civ USAF HQ ACC/A7NS
Subject: Comments of the Revised Draft Environmental Impact Statement (DEIS) for the F-35A Operational Basing at Mountain Home Air Force Base - Elmore, Owyhee, and Twin Falls Counties, Idaho - ER 13-0373 - (Ref: 01EIFW00-2012-CPA-0058)
Attachments: Experimental Evidence for the Effects of Chronic Anthropogenic Noise on Abundance of Greater Sage-Grouse at Leks.pdf; Revised DEIS for the F-35A Operational Basing at Mountain Home Air Force Base - ER 13-0373.doc

Joyce A. Stanley, MPA

Regional Environmental Protection Specialist

US Department of the Interior

Office of Environmental Policy & Compliance - Region 4

Contributed Paper

Experimental Evidence for the Effects of Chronic Anthropogenic Noise on Abundance of Greater Sage-Grouse at Leks

JESSICA L. BLICKLEY,^{*,†} DIANE BLACKWOOD,^{*,‡} AND GAIL L. PATRICELLI^{*}^{*}Department of Evolution and Ecology and Graduate Group in Ecology, 2320 Storer Hall, One Shields Avenue, University of California, Davis, CA 95616, U.S.A.[‡]Florida Fish and Wildlife Conservation Commission, Fish and Wildlife Research Institute, St. Petersburg, FL, U.S.A.

Abstract: Increasing evidence suggests that chronic noise from human activities negatively affects wild animals, but most studies have failed to separate the effects of chronic noise from confounding factors, such as habitat fragmentation. We played back recorded continuous and intermittent anthropogenic sounds associated with natural gas drilling and roads at leks of Greater Sage-Grouse (*Centrocercus urophasianus*). For 3 breeding seasons, we monitored sage grouse abundance at leks with and without noise. Peak male attendance (i.e., abundance) at leks experimentally treated with noise from natural gas drilling and roads decreased 29% and 73%, respectively, relative to paired controls. Decreases in abundance at leks treated with noise occurred in the first year of the study and continued throughout the experiment. Noise playback did not have a cumulative effect over time on peak male attendance. There was limited evidence for an effect of noise playback on peak female attendance at leks or male attendance the year after the experiment ended. Our results suggest that sage-grouse avoid leks with anthropogenic noise and that intermittent noise has a greater effect on attendance than continuous noise. Our results highlight the threat of anthropogenic noise to population viability for this and other sensitive species.

Keywords: chronic noise, energy development, *Centrocercus urophasianus*, roads

Evidencia Experimental de los Efectos de Ruido Antropogénico Crónico sobre la Abundancia de *Centrocercus urophasianus* en Leks

Resumen: El incremento de evidencias sugiere que el ruido crónico de actividades humanas afecta negativamente a los animales silvestres, pero la mayoría de los estudios no separan los efectos del ruido crónico de los factores de confusión, como la fragmentación del hábitat. Reprodujimos sonidos antropogénicos intermitentes y continuos asociados con la perforación de pozos de gas natural y caminos en leks de *Centrocercus urophasianus*. Durante 3 épocas reproductivas, monitoreamos la abundancia de *C. urophasianus* en leks con y sin ruido. La abundancia máxima de machos (i.e., abundancia) en leks tratados con ruido de la perforación de pozos de gas natural y caminos decreció 29% y 73% respectivamente en relación con los controles pareados. La disminución en abundancia en leks tratados con ruido ocurrió en el primer año del estudio y continuó a lo largo del experimento. La reproducción de ruido no tuvo efecto acumulativo en el tiempo sobre la abundancia máxima de machos. Hubo evidencia limitada para un efecto de la reproducción de ruido sobre la abundancia máxima de hembras en los leks o sobre la asistencia de machos el año después de que concluyó el experimento. Nuestros resultados sugieren que *C. urophasianus* evita leks con ruido antropogénico y que el ruido intermitente tiene un mayor efecto sobre la asistencia que el ruido continuo. Nuestros

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resultados resaltan amenaza del ruido antropogénico para la viabilidad poblacional de esta y otras especies sensibles.

Palabras Clave: *Centrocercus urophasianus*, desarrollo energético, ruido crónico, caminos

Introduction

Noise associated with human activity is widespread and expanding rapidly in aquatic and terrestrial environments, even across areas that are otherwise relatively unaffected by humans, but there is still much to learn about its effects on animals (Barber et al. 2009). Effects of noise on behavior of some marine organisms are well-documented (Richardson 1995). In terrestrial systems, the effects of noise have been studied less, but include behavioral change, physiological stress, and the masking of communication signals and predator sounds (Slabbekoorn & Ripmeester 2008; Barber et al. 2009). These effects of noise on individual animals may lead to population decreases if survival and reproduction of individuals in noisy habitats are lower than survival and reproduction of individuals in similar but quiet habitats (Patricelli & Blickley 2006; Warren et al. 2006; Slabbekoorn & Ripmeester 2008). Population declines may also result if animals avoid noisy areas, which may cause a decrease in the area available for foraging and reproduction.

There is evidence of variation among species in their sensitivity to noise. Noise sensitivity may also differ with the type of noise, which varies in amplitude, frequency, temporal pattern, and duration (Barber et al. 2009). Duration may be particularly critical; most anthropogenic noise is chronic and the effects of chronic noise may differ substantially from those of short-term noise in both severity and response type. For example, brief noise exposure may cause elevated heart rate and a startle response, whereas chronic noise may induce physiological stress and alter social interactions. Therefore, when assessing habitat quality for a given species, it is critical to understand the potential effects of the full spectrum of anthropogenic noise present in the species' range.

The effects of noise on wild animals are difficult to study because noise is typically accompanied by other environmental changes. Infrastructure that produces noise may be associated with fragmentation of land cover, visual disturbance, discharge of chemicals, or increased human activity. Each of these factors may affect the physiology, behavior, and spatial distribution of animals, which increases the difficulty of isolating the effects of the noise.

Controlled studies of noise effects on wild animals in terrestrial systems thus far have focused largely on birds. Recent studies have compared avian species richness, occupancy, and nesting success near natural gas wells oper-

ating with and without noise-producing compressors. In these studies, spatial variation in noise was used to control for confounding visual changes due to infrastructure (Habib et al. 2007; Bayne et al. 2008; Francis et al. 2009). Results of these studies show that continuous noise affects density and occupancy of a range of bird species and leads to decreases or increases in abundance of some species and has no effect on other species (Bayne et al. 2008; Francis et al. 2009; Francis et al. 2011). Results of these studies also show that noise affects demographic processes, such as reproduction, by reducing the pairing or nesting success of individuals (Habib et al. 2007; Francis et al. 2009).

Although these studies in areas near natural gas wells controlled for the effects of most types of disturbance besides noise, they could not address the effect of noise on naïve individuals in areas without natural gas wells and compressors. Furthermore, there have been no controlled experiments that address the effects of chronic but intermittent noise, such as traffic, which may be more difficult for species to habituate. Road noise may have large negative effects because it is widespread (affecting an estimated 20% of the United States) (Forman 2000) and observational studies indicate that noise may contribute to decreases in abundance of many species near roads (e.g., Forman & Deblinger 2000).

Noise playback experiments offer a way to isolate noise effects on populations from effects of other disturbances and to compare directly the effects of noise from different sources. Playback experiments have been used to study short-term behavioral responses to noise, such as effects of noise on calling rate of amphibians (Sun & Narins 2005; Lengagne 2008), heart rate of ungulates (Weisenberger et al. 1996), diving and foraging behavior of cetaceans (Tyack et al. 2011), and song structure of birds (Leonard & Horn 2008), but have not been used to study effects of chronic noise on wild animals because producing long-term noise over extensive areas is challenging. We conducted a playback experiment intended to isolate and quantify the effects of chronic noise on wild animals. We focused on the effects of noise from natural gas drilling on Greater Sage-Grouse (*Centrocercus urophasianus*).

Greater Sage-Grouse occur in the western United States and Canada and have long been a focus of sexual selection studies (Wiley 1973; Gibson 1989; Gibson 1996). Greater Sage-Grouse populations are decreasing in density and number across the species' range, largely due to extensive habitat loss (Connelly et al. 2004; Garton et al. 2010). The species is listed as endangered under Canada's

Species at Risk Act and is a candidate species for listing under the U.S. Endangered Species Act. Deep natural gas and coal-bed methane development have been expanded rapidly across the species' range since 2000 and substantial evidence suggests that these processes may contribute to observed decreases in the number of Greater Sage-Grouse (Holloran 2005; Walker et al. 2007; Holloran et al. 2010). Many factors associated with deep natural gas and coal-bed methane development are thought to lead to these decreases, including habitat loss, increased occurrence of West Nile Virus, and altered fire regimes due to the expansion of nonnative invasive species (Nangle et al. 2004; Walker et al. 2007; Copeland et al. 2009).

The noise created by energy development may also affect sage grouse by disrupting behavior, causing physiological stress, or masking biologically important sounds. During the breeding season (February–May), male sage grouse gather on communal breeding grounds called leks. Male attendance (number of male birds on the lek) at sage grouse leks downwind of deep natural gas development decreases up to 50% per year compared with attendance at other leks, which suggests noise or aerial spread of chemical pollution as factors contributing to these decreases (Holloran 2005).

We sought to test the hypothesis that lek attendance by male and female sage grouse is negatively affected by both chronic intermittent and continuous noise from energy development. To do so, we conducted a noise playback experiment in a population that is relatively unaffected by human activity. Over 3 breeding seasons (late February to early May), we played noise recorded from natural gas drilling rigs and traffic on gas-field access roads at sage grouse leks and compared attendance patterns on these leks to those on nearby control leks.

We conducted our experiment at leks because lekking sage grouse are highly concentrated in a predictable area, which makes them good subjects for a playback experiment. More importantly, sage grouse may be particularly responsive to noise during the breeding season, when energetic demands and predation risk are high (Vehrencamp et al. 1989; Boyko et al. 2004). Additionally, noise may mask sexual communication on the lek. Lekking males produce a complex visual and acoustic display (Supporting Information) and females use the acoustic component of the display to find lekking males and select a mate (Gibson 1989; Gibson 1996; Patricelli & Krakauer 2010). Furthermore, lek attendance is commonly used as a metric of relative abundance of sage grouse at the local and population level (Connelly et al. 2003; Holloran 2005; Walker et al. 2007). We used counts of lek attendance (lek counts) to assess local abundance relative to noise versus control treatments.

Methods

Study Site and Lek Monitoring

Our study area included 16 leks (Table 1 & Supporting Information) on public land in Fremont County, Wyoming, U.S.A. (42° 50', 108° 29'). Dominant vegetation in this region is big sagebrush (*Artemisia tridentata wyomingensis*) with a grass and forb understory. The primary land use is cattle ranching, and there are low levels of recreation and natural gas development.

We paired leks on the basis of similarity in previous male attendance and geographic location (Table 2 & Supporting Information). Within a pair, one lek was

Table 1. Pairing, treatment type, location, and baseline attendance for leks used in noise playback experiment.

Lek	Pair	Pair noise type	Noise or control	Years of playback	Baseline attendance*
Gustin	A	drilling	control	3	26
Preacher Reservoir	A	drilling	noise	3	49
North Sand Gulch	B	road	control	3	32
Lander Valley	B	road	noise	3	67
East Twin Creek	C	drilling	control	3	44
Coal Mine Gulch	C	drilling	noise	3	83
East Carr Springs	D	road	control	3	67
Carr Springs	D	road	noise	3	92
Powerline	E	drilling	control	2	49
Conant Creek North	E	drilling	noise	2	44
Monument	F	road	control	2	53
Government Slide Draw	F	road	noise	2	55
Nebo	G	drilling	control	2	18
Arrowhead West	G	drilling	noise	2	24
Onion Flats I	H	road	control	2	41
Ballenger Draw	H	road	noise	2	38

* Baseline attendance is the average peak male attendance value (annual maximum number of males observed averaged across years) for that lek from 2002 to 2005.

Table 2. Mixed-effect candidate models used to assess change in peak attendance of male Greater Sage-Grouse at leks from pre-experiment baseline attendance during the natural gas drilling noise playback (2006–2008) and after the experiment (2009).

Model (year) ^a	K ^b	ΔAIC_c ^c	w _i ^d
Male experiment (2006–2008)			
treatment×type+season ^e	9	0	0.64
treatment×type ^e	7	1.8	0.26
treatment+experiment year	6	6.1	0.03
treatment+season	7	6.8	0.02
treatment	5	7.3	0.02
treatment×experiment year	7	8.0	0.01
treatment×type+treatment×season+experiment year	12	8.6	<0.01
treatment×type+treatment×season	11	9.9	<0.01
treatment×type+treatment×season+treatment×experiment year	13	10.0	<0.01
treatment+type	6	10.4	<0.01
treatment×season	9	16.2	<0.01
null, random effects only	4	57.0	<0.01
Male after experiment (2009)			
null, random effects only ^e	3	0.0	0.84
treatment	4	3.3	0.16

^aAll models contain pair as a random effect, and experiment (2006–2008) models also include year as a random effect. Covariates: treatment, lek treatment (noise or control) assigned to individual leks within a pair; type, pair noise treatment type (road or drilling assigned to pair); season, time of year (early [late February to 1 week prior to peak female attendance for that lek; female peak ranged from 15 March to 6 April], mid [1 week before and after female peak], and late [starting 1 week after female peak]); experiment year, years of experimental noise exposure.

^bNumber of parameters in the model.

^cDifference in AIC_c (Akaike's information criterion for small sample size) values from the model with lowest AIC_c .

^dAkaike weight.

^eModel with substantial support ($\Delta AIC_c < 2$).

randomly assigned to receive experimental noise treatment and the other lek was designated a control. We randomly assigned the experimental leks to receive playback of either drilling or road noise. In 2006, we counted attendance at 8 leks (2 treated with drilling noise, 2 treated with road noise, and 4 control). In both 2007 and 2008, we included an additional 8 leks for a total of 16 leks (4 treated with drilling noise, 4 treated with road noise, and 8 controls).

Throughout the breeding season, we counted males and females on leks with a spotting scope from a nearby point selected to maximize our visibility of the lek. We visited paired leks sequentially on the same days between 05:00 and 09:00, alternating the order in which each member of the pair was visited. We visited lek pairs every day during the breeding season in 2006 and, after expanding our sample size in 2007, every 2–4 days in 2007 and 2008. Peak estimates of male attendance from >4 visits are a highly repeatable measure of abundance at individual leks (Garton et al. 2010), so the lower frequency of visits in 2007 and 2008 was unlikely to have a substantial effect on estimates of peak male attendance. At a minimum, we conducted 2 counts per visit at 10- to 15-min intervals. The annual peak attendance was the highest daily attendance value at each lek for the season for males or females. For males we also calculated the peak attendance in 3 nonoverlapping date ranges: early (late February to 1 week prior to peak female attendance for that lek; female peak ranged from 15 March to

6 April), mid (1 week before and after female peak), and late (starting 1 week after female peak).

Noise Introduction

We recorded noise used for playback near natural gas drilling sites and gas-field access roads in a region of extensive deep natural gas development in Sublette County, Wyoming (Pinedale Anticline Gas Field and Jonah Gas Field). We recorded drilling noise in 2006 within 50 m of the source on a digital recorder (model PMD670, 44.1 kHz/16 bit; Marantz, Mahwah, New Jersey) with a shotgun microphone (model K6 with an ME60 capsule; Sennheiser, Old Lyme, Connecticut). We recorded road noise in 2005 with a handheld computer (iPAQ h5550 Pocket PC, 44.1 kHz/16 bit; Hewlett Packard, Palo Alto, California) and omnidirectional microphone (model K6 with an ME62 capsule; Sennheiser). Drilling noise is relatively continuous and road noise is intermittent (Supporting Information). Both types of noise are predominantly low frequency (<2 kHz).

We played noise on experimental leks from 2 to 4 rock-shaped outdoor speakers (300 W Outdoor Rock Speakers; TTC Corporation, City of Industry, California) hooked to a car amplifier (Xtant1.1; Xtant Technologies, Phoenix, Arizona) and an MP3 player (Sansa m240; SanDisk, Milpitas, California). The playback system was powered with 12 V batteries that we changed every 1–3 days when no birds were present. We placed the speakers

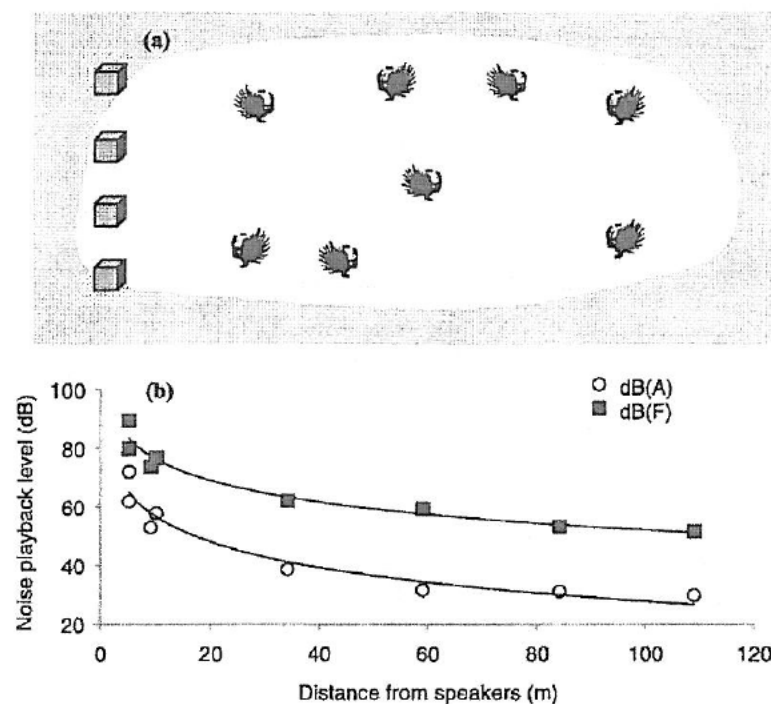


Figure 1. (a) Placement of speakers (on noise-treated leks) or dummy speakers (on control leks) (boxes) at Greater Sage-Grouse leks. (b) Mean maximum noise level (unweighted decibels, dB[F], and A-weighted decibels, dB[A], measured in L_{max} [highest root-mean-square sound pressure level within the measurement period]) at Greater Sage-Grouse leks measured on transects at 25-m intervals from the line of speakers on a typical lek treated with road noise. Playback levels of natural gas drilling noise (measured in L_{eq}) followed the same pattern. Ambient levels of noise at control leks ranged from 30 to 35 dB(A).

in a straight line across one end of the lek (Fig. 1a). In 2006 we placed 3 speakers at leks treated with drilling noise and 2 speakers at leks treated with road noise. In 2007 and 2008, we increased the number of speakers, placing 4 at each noise-treated lek to increase the area in which noise was present on the lek. At control leks, we placed dummy speakers of similar size and color to playback speakers (68-L plastic tubs). Within each lek pair, dummy and real speakers were placed in similar configurations. To control for playback-related disturbance, the leks in each pair were visited an equal number of times during the morning for counts of birds and in the afternoon for battery changes.

We played drilling noise and road noise on leks at 70 dB(F) sound pressure level (unweighted decibels) measured 16 m directly in front of the speakers (Fig. 1 & Supporting Information). This is similar to noise levels measured approximately 400 m from drilling rigs and main access roads in Pinedale (J. L. Blickley and G. L. Patricelli, unpublished data). Four hundred meters (0.25 miles) is the minimum surface disturbance buffer around leks at this location (BLM 2008). We calibrated and measured noise playback levels with a hand-held meter that provides sound-pressure levels (System 824; Larson-Davis, Depew, New York) when wind was <9.65 k/h. On drilling-noise-treated leks, where noise was continuous, we calibrated the noise playback level by measuring the average sound level (L_{eq} [equivalent continuous sound

level]) over 30 s. On leks treated with road noise, where the amplitude of the noise varied during playback to simulate the passing of vehicles, we calibrated the playback level by measuring the maximum sound level (L_{max} [highest root-mean-square sound pressure level within the measurement period]).

For leks treated with drilling noise, recordings from 3 drilling sites were spliced into a 13-min mp3 file that played on continuous repeat. On leks treated with road noise, we randomly interspersed mp3 recordings of 56 semitrailers and 61 light trucks with 170 thirty-second silent files to simulate average levels of traffic on an access road (Holloran 2005). Noise playback on experimental leks continued throughout April in 2006, from mid February or early March through late April in 2007, and from late February through late April in 2008. We played back noise on leks 24 hours/day because noise from deep natural gas drilling and vehicular traffic is present at all times. This experimental protocol was reviewed and approved by the Animal Care and Use Committee at University of California, Davis (protocol 16435).

To measure noise levels across experimental leks, we measured the average amplitude (15 s L_{eq}) of white-noise played at 1–5 points along transects that extended across the lek at 25-m intervals roughly parallel to the line of speakers. We calibrated white-noise measurements by measuring the noise level of both the white noise and either a representative clip of drilling noise or a semitrailer

10 m directly in front of each speaker. To minimize disturbance, we took propagation measurements during the day. Daytime ambient noise levels are typically 5–10 dBA higher than those in the early morning (J. L. Blickley and G. L. Patricelli, unpublished data) and are likely higher than those heard by birds at a lek.

After the experiment, we counted individuals on all leks 2–6 times from 1 March through 30 April 2009. In 2009 we continued to play noise on 2 experimental leks as part of a related experiment, so we did not include these lek pairs in our analysis of postexperiment male attendance at a lek.

Response Variables and Baseline Attendance Levels

Sage grouse leks are highly variable in size and, even within pairs, our leks varied up to 50% in size. To facilitate comparison of changes in attendance on leks of different sizes, we calculated the attendance relative to attendance levels before treatment (i.e., baseline attendance levels). We obtained male baseline abundance from the Wyoming Game and Fish Department. We used the standard lek-count protocol (Connelly et al. 2003) to count birds at leks approximately 3 times/breeding season. Due to the small number of counts in pre-experiment years, we calculated male baseline attendance by averaging the annual peak male attendance at each individual lek over 4 years (2002–2005). We assessed changes in early-, mid-, and late-season peak male attendance from this 4-year baseline attendance. Female attendance was highly variable throughout the season with a short (1–3 day) peak in attendance at each lek. Due to the limited number of annual counts, female counts from 2002 to 2005 were not reliable estimates of peak female attendance and could not be used as baseline attendance levels. Because we introduced noise to experimental leks after the peak in female attendance in 2006, we used maximum female counts from 2006 as a baseline for each of the 8 leks monitored that year. We assessed changes in annual peak female attendance from this 1-year baseline attendance. The 8 leks added to the experiment in 2007 were not included in statistical analyses of female attendance due to the lack of a baseline.

Statistical Analyses

We used an information-theoretic approach to evaluate the support for alternative candidate models (Table 2). All candidate models were linear mixed-effect models that assessed the relation between covariates and the proportional difference in annual and within-season peak attendance and baseline attendance (both males and female) (Tables 2 & 3). We ranked models on the basis of differences in Akaike's information criterion for small sample sizes (ΔAIC_c) (Burnham & Anderson 2002). Akaike weights (w_i) were computed for each model on the basis of ΔAIC_c scores. We calculated model-averaged variable

Table 3. Mixed-effect candidate models used to assess change in peak annual attendance of female Greater Sage-Grouse at leks from pre-experiment baseline attendance in 2006 during noise playback.

Model ^a	K ^b	ΔAIC_c ^c	w_i ^d
Null, random effects only ^e	4	0	0.71
Treatment ^f	5	1.9	0.27
Treatment + experiment year	6	8	0.01
Treatment × experiment year	7	14	< 0.001

^aAll models contained pair and year as random effects. Due to the small sample size (4 pairs), pair type variable (road versus drilling) was not included in the model set. Covariates: treatment, lek treatment (noise or control assigned to individual leks within a pair); experiment year, years of experimental noise exposure.

^bNumber of parameters in the model.

^cDifference in AIC_c (Akaike's information criterion for small sample size) values from the most strongly supported (lowest AIC_c) model.

^dAkaike weight.

^eModel with substantial support ($\Delta AIC_c < 2$).

coefficients, unconditional 95% CI, and variable importance (weight across models) for variables contained in models that were strongly supported ($\Delta AIC_c < 2$). All statistical analyses were performed in R (version 2.12.1) (R Development Team 2010).

The detection probability for males and females is likely to vary across a season and among leks (Walsh et al. 2004). We sought to minimize sources of error and maximize detection by conducting frequent counts from locations with a clear view of the lek and by implementing a paired treatment design (each noise lek is compared with a similar control lek, monitored by the same observer on the same days). To ensure that detection probability did not differ among noise and control leks, we corrected our data for detection probability. First, we used detection error rates, estimated as difference between the maximum count and the count immediately before or after the maximum count within a day (for both males and females), and then we applied the bounded-count method (for males only; Walsh et al. 2004). With the multiple-count estimator, estimates of detection between noise and control leks did not differ (males: $t = 1.02$, $df = 6$, $p = 0.35$; females: $t = 0.21$, $df = 3$, $p = 0.84$). We analyzed both corrected and uncorrected counts and found that neither correction qualitatively changed our results; therefore, results are presented for uncorrected counts.

Results

Male Attendance

Peak male attendance at both types of noise leks decreased more than attendance at paired control leks, but the decreases varied by noise type. In the most strongly supported models of the candidate set ($w_i = 0.90$, all

Table 4. Model-averaged parameter direction and effect sizes and variable importance for all variables present in strongly supported models ($\Delta AIC_c < 2$ in Table 2) of changes in peak attendance of male greater sage-grouse at leks from baseline attendance during experimental noise playback.

Variable	Percent effect size (SE)	Variable importance*
Intercept	31 (22)	1.0
Treatment, noise	-29 (7)	0.91
Type, road	33 (22)	0.91
Treatment, noise*type, road	-40 (10)	0.91
Season, mid	18 (6)	0.66
Season, late	23 (6)	

*Variable importance is the summed weight of all models containing that variable.

other models $\Delta AIC_c > 6.1$) (Table 2), there was an interaction of the effects of experimental treatment (control versus noise) and noise type (drilling versus road) on annual peak male attendance. At leks treated with road noise, decreases in annual peak male attendance were greater (73%), relative to paired controls, than at drilling noise leks (29%). As indicated by the effect size for the main effect of pair type, attendance at control leks paired with road noise leks was 33% greater relative to the baseline than control leks paired with drilling noise leks (Table 4). However, changes in attendance were compared within a pair to control for such differences. Male attendance increased over the course of a season, with 18% and 23% increases in peak male attendance in mid and late season from the early-season peaks, but seasonal increases were similar across noise and control leks (Table 4 & Fig. 2b).

There was no evidence that the effect of noise on attendance changed as years of exposure to noise increased. The models with substantial support did not contain a main effect of years of exposure or an interaction of years of exposure and treatment type (control versus noise) (Table 2). In spite of decreases in attendance throughout the experiment, peak male attendance exceeded baseline attendance on all leks in 2006, 13 leks in 2007, and 11 leks in 2008 (Table 4 & Fig. 2c). There was an increase in sage grouse abundance regionally in 2006 (Fig. 3).

After the experiment (2009), attendance at leks we experimentally exposed to drilling and road noise was lower relative to paired controls (Table 2). The model that included the treatment variable showed an effect size of -30% (across road and drilling noise leks) but had only moderate support ($\Delta AIC_c = 3.3$) relative to the null model.

Female Attendance

Peak female attendance at leks treated with noise in 2007 and 2008 decreased from the 2006 baseline, relative to control leks (Table 3). The most strongly sup-

ported model in the set was the null model; however, the model that included noise treatment was highly supported ($\Delta AIC_c < 2$). The effect size of noise treatment on female attendance was -48% (10% SE), which is similar to the effect of noise on male attendance averaged across both noise types (51%).

Discussion

Results of previous studies show abundance of Greater Sage-Grouse decreases when natural gas and coal-bed methane fields are developed (Holloran 2005; Walker et al. 2007; Doherty et al. 2008). Our results suggest that chronic noise may contribute to these decreases. Peak male attendance relative to the baseline was lower on noise leks than paired control leks, and the decrease was larger at road noise leks (73% decrease in abundance compared with paired controls) than drilling noise leks (29%; Fig. 3). These decreases were immediate and sustained. The effects of noise occurred in the first year of the study and were observed throughout the experiment, although patterns of male attendance within a season were similar at noise and control leks. Differences in male attendance between noise and control leks in the year after the experiment were not supported in the top models, which suggests attendance rebounded after noise ceased. However, the sample size for this analysis was small, and the effect size (30% average decreases in male attendance for both noise types) suggests a residual effect of noise.

There are 2 mechanisms by which noise may reduce male attendance. First, males on noise leks may have had higher mortality than males on control leks. Noise playback was not loud enough to cause direct injury to individuals, but mortality could be increased indirectly by noise playback if the sounds of predators (coyotes [*Canis latrans*] or Golden Eagles [*Aquila chrysaetos*]) were masked by noise. However, on-lek predation events were rare. We observed ≤ 1 predation event per lek per season during the experiment (observations of sage-grouse carcasses or feathers at a lek [J. L. Blickley, personal observation]). The cumulative effect of rare predation events would lead to a gradual decrease in attendance, rather than the rapid and sustained decrease we observed. Furthermore, experimental noise was likely too localized to substantially affect off-lek predation because noise levels decreased exponentially as distance to the speakers increased (Fig. 1b). To date, increased predation risk of adults due to anthropogenic noise has not been demonstrated in any species, but some species increase vigilance when exposed to noise, leaving less time for feeding, displaying, and other important behaviors (Quinn et al. 2006; Rabin et al. 2006). Noise may also affect off-lek mortality indirectly. For example, noise-stressed males may be more susceptible to disease due to a suppressed

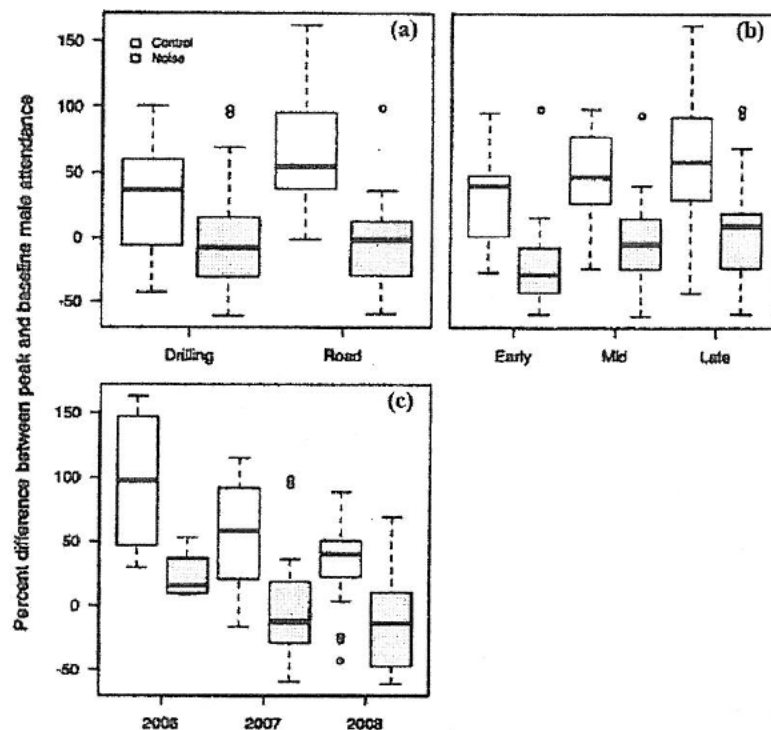


Figure 2. Percent difference between baseline attendance (i.e., abundance before experiments) of male Greater Sage-Grouse and (a) peak male attendance on control leks and leks treated with noise from natural gas drilling and road noise, (b) peak male attendance in the early (late February to 1 week prior to peak female attendance for that lek), mid (1 week before and after female peak [female peak ranged from 15 March to 6 April]), and late (starting 1 week after female peak) breeding season; on control leks and leks treated with noise, and (c) peak male attendance at control leks and leks treated with noise in experimental years 2006, 2007, and 2008 in Fremont County, Wyoming (U.S.A.) (horizontal lines, median value; box ends, upper and lower quartiles, whiskers, maximum and minimum values). Data are observed values, not model output.

immune response (Jankowski et al. 2010). Although long-term stress from noise is unlikely to be the primary cause of the rapid decreases in attendance we observed here, it may have been a contributing factor over the course of the experiment. Furthermore, in areas of dense industrial development, where noise is widespread, noise effects on mortality may be more likely.

Alternatively, noise may lower male attendance through displacement, which would occur if adult or juvenile males avoid leks with anthropogenic noise. Such behavioral shifts are consistent with the rapid decreases in attendance we observed. Adult male sage grouse typically exhibit high lek fidelity (Schroeder & Robb 2003) and visit leks regularly throughout the season, whereas juvenile males visit multiple leks and their attendance peaks late in the season (Kaiser 2006). If juveniles or adults avoid noise by visiting noisy leks less frequently

or moving to quieter leks, overall attendance on noisy leks could be reduced. We could not reliably differentiate between juveniles and adults, so we do not know the relative proportion of adults and juveniles observed. Consistent with displacement due to noise avoidance, radio-collared juvenile males avoid leks near deep natural gas developments in Pinedale, Wyoming, which has resulted in decreases in attendance at leks in close proximity to development and increased attendance at nearby leks with less human activity (Kaiser 2006; Holloran et al. 2010). Reduced recruitment of juvenile males is unlikely to be the only driver of the patterns we observed because we did not observe larger decreases in lek attendance on noise-treated leks later in the season, when juvenile attendance peaks. Rather, we found immediate decreases in attendance early in the season when playback began (Fig. 2b), at which time there are few juveniles on the lek. This

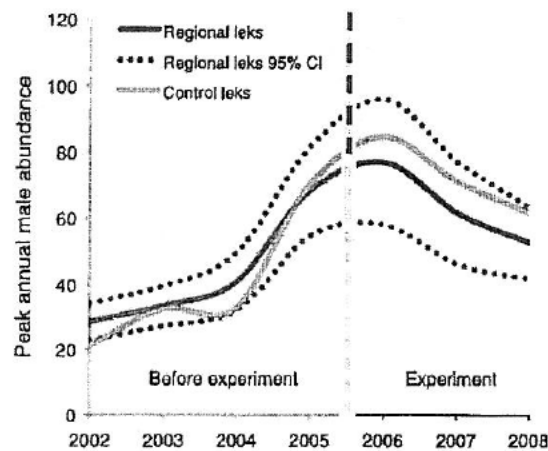


Figure 3. Maximum abundance of male Greater Sage-Grouse from 2002 to 2008 at control leks ($n = 8$) (no anthropogenic sound played) and other leks in the region that were not part of the experiment (regional leks) ($n = 38$).

is consistent with both adult and juvenile noise avoidance. We did not find evidence for a cumulative negative effect of noise on lek attendance, although cumulative effects may have been masked by regional population declines after 2006, a year of unusually high abundance (Fig. 3).

Female attendance at leks treated with noise was lower than that on control leks; however, the null model and the model that included noise treatment were both highly supported, providing only moderate support for the effects of noise on attendance. For this model, the overall estimated effect of noise on female attendance (-48%) was similar to that of the effect of noise on male attendance. Due to the high variability of female daily maximum attendance throughout the season and small sample size for this analysis (female attendance data available for only 4 of the 8 lek pairs), our statistical power to detect differences in female attendance was limited and effect sizes may not be representative of actual noise effects.

Our results suggest that males and possibly females avoid leks exposed to anthropogenic noise. A potential cause of avoidance is the masking of communication. Masked communication is hypothesized to cause decreases in abundance of some animal species in urban and other noisy areas. For example, bird species with low-frequency vocalizations are more likely to have low abundance or be absent from natural gas developments, roads, and urban areas than species with high-frequency vocalizations, which suggests that masking is the mechanism associated with differences in abundance (Rheindt 2003; Francis et al. 2009; Hu & Cardoso 2010). Sage-grouse may

be particularly vulnerable to masked communication because their low-frequency vocalizations are likely to be masked by most sources of anthropogenic noise, including the noises we played in our experiment (Supporting Information). This may be particularly important for females if they cannot use acoustic cues to find leks or assess displaying males in noisy areas.

Alternatively, individuals may avoid noisy sites if noise is annoying or stressful, particularly if this noise is associated with danger (Wright et al. 2007). Intermittent road noise was associated with lower relative lek attendance than continuous drilling noise, in spite of the overall higher mean noise levels and greater masking potential at leks treated with drilling noise (Supporting Information). Due to the presence of roads in our study area, sage grouse may have associated road noise with potentially dangerous vehicular traffic and thus avoided traffic-noise leks more than drilling-noise leks. Alternatively, the pattern of decrease may indicate that an irregular noise is more disturbing to sage grouse than a relatively continuous noise. Regardless, our results suggest that average noise level alone is not a good predictor of the effects of noise (Slabbekoorn & Ripmeester 2008) and that species can respond differently to different types of noise.

Our results cannot be used to estimate the quantitative contribution of noise alone to observed decreases in Greater Sage-Grouse abundance at energy development sites because our experimental design may have led us to underestimate or overestimate the magnitude of these effects. Decreases in abundance due to noise could be overestimated in our study if adults and juveniles are displaced from noise leks and move to nearby control leks, which would have increased the difference in abundance between paired leks. Similar displacement occurs in areas of energy development, but over a much larger extent than is likely to have occurred in response to localized playbacks in our experiment (Holloran et al. 2010).

In contrast, we could have underestimated noise effects if there were synergistic effects of noise and other disturbances associated with energy development. For example, birds with increased stress levels due to poor forage quality may have lower tolerance for noise-induced stress, or vice versa. Noise in our experiment was localized to the immediate lek area and only played during the breeding season, so we cannot quantify the effects of noise on wintering, nesting, or foraging birds. Noise at energy development sites is less seasonal and more widespread than noise introduced in this study and may thus affect birds at all life stages and have a potentially greater effect on lek attendance. Leks do not represent discrete populations; therefore, local decreases in lek attendance do not necessarily reflect population-level decreases in abundance. However, at large energy development sites, similar displacement of Greater Sage-Grouse away from the ubiquitous noise may result in population-level declines due to spatially exten-

sive changes in land use or increases in dispersal-related and density-dependent sources of mortality (Aldridge & Boyce 2007). Enforcement and refinement of existing seasonal restrictions on human activity could potentially reduce these effects.

We focused on the effect of noise associated with deep natural gas and coal-bed methane development on sage grouse, but our results may increase broader understanding of the effects of noise on animals. Both intermittent and constant noise from energy development affected sage grouse. Other noise sources with similar frequency range and temporal pattern, such as wind turbines, oil-drilling rigs, and mines, may have comparable effects. Similar effects may also be associated with highways, off-road vehicles, and urbanization so that the potential for noise to have an effect is large.

We believe that noise should be investigated as one potential cause of population declines in other lekking North American grouse species that are exposed to similar anthropogenic development. Populations of many bird (van der Zande et al. 1980; Rheindt 2003; Ingelfinger & Anderson 2004) and mammal (Forman & Deblinger 2000; Sawyer et al. 2009) species have been shown to decrease in abundance in response to road, urban, and energy development, and noise produced by these activities may contribute to these decreases. Our results also demonstrate that wild animals may respond differently to chronic intermittent and continuous noise, a comparison that should be expanded to other species. Additionally, we think these results highlight that experimental noise playbacks may be useful in assessing the response of wild animals to chronic noise (Blickley & Patricelli 2010).

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Supporting Information

Spectrograms and power spectrums of drilling noise, road noise and male sage-grouse vocal display (Appendix S1), map of experimental and control leks (Appendix S2), and noise playback levels on experimental leks (Appendix S3) are available online. The authors are solely responsible for the content and functionality of these materials. Queries (other than absence of the material) should be directed to the corresponding author.

Literature Cited

- Aldridge, C., and M. Boyce. 2007. Linking occurrence and fitness to persistence: habitat-based approach for endangered greater sage-grouse. *Ecological Applications* 17:508–526.
- Barber, J. R., K. R. Crooks, and K. M. Fristrup. 2009. The costs of chronic noise exposure for terrestrial organisms. *Trends in Ecology & Evolution* 25:180–189.
- Bayne, E., L. Habib, and S. Boutin. 2008. Impacts of chronic anthropogenic noise from energy-sector activity on abundance of songbirds in the boreal forest. *Conservation Biology* 22:1186–1193.
- Blickley, J. L., and G. L. Patricelli. 2010. Impacts of anthropogenic noise on wildlife: research priorities for the development of standards and mitigation. *Journal of International Wildlife Law & Policy* 13:274–292.
- BLM (Bureau of Land Management). 2008. Pinedale Anticline Project area. Supplemental environmental impact statement record of decision. Appendix A. BLM, Pinedale, Wyoming.
- Boyko, A. R., R. M. Gibson, and J. R. Lucas. 2004. How predation risk affects the temporal dynamics of avian leks: greater sage grouse versus golden eagles. *The American Naturalist* 163:154–165.
- Burnham, K. P., and D. R. Anderson. 2002. Model selection and multimodel inference: a practical information-theoretic approach. Springer-Verlag, New York.
- Connelly, J. W., K. P. Reese, and M. A. Schroeder. 2003. Monitoring of greater sage-grouse habitats and populations. College of Natural Resources Experiment Station, University of Idaho, Moscow.
- Connelly, J. W., S. T. Knick, M. A. Schroeder, and S. J. Stiver. 2004. Conservation assessment of greater sage-grouse and sagebrush habitats. Western Association of Fish and Wildlife Agencies, Cheyenne, Wyoming.
- Copeland, H. E., K. E. Doherty, D. E. Naugle, A. Pocerwicz, and J. M. Kiesecker. 2009. Mapping oil and gas development potential in the US intermountain west and estimating impacts to species. *Public Library of Science One* 4:e7400. DOI: 10.1371.
- Doherty, K., D. Naugle, B. Walker, and J. Graham. 2008. Greater sage-grouse winter habitat selection and energy development. *Journal of Wildlife Management* 72:187–195.
- Forman, R. T. T. 2000. Estimate of the area affected ecologically by the road system in the United States. *Conservation Biology* 14:31–35.
- Forman, R. T. T., and R. D. Deblinger. 2000. The ecological road effect zone of a Massachusetts (U. S. A.) suburban highway. *Conservation Biology* 14:36–46.
- Francis, C. D., C. P. Ortega, and A. Cruz. 2009. Noise pollution changes avian communities and species interactions. *Current Biology* 19:415–419.
- Francis, C., C. Ortega, and A. Cruz. 2011. Vocal frequency change reflects different responses to anthropogenic noise in two subspecies of tyrant flycatchers. *Proceedings of the Royal Society B: Biological Sciences* 278:2025–2031.
- Garton, E. O., J. W. Connelly, J. S. Home, C. A. Hagen, A. Moser, and M. A. Schroeder. 2010. Greater sage-grouse population dynamics and probability of persistence. Pages 293–382. *Studies in avian biology*. University of California Press, Berkeley.
- Gibson, R. M. 1989. Field playback of male display attracts females in lek breeding sage grouse. *Behavioral Ecology and Sociobiology* 24:439–443.
- Gibson, R. M. 1996. Female choice in sage grouse: the roles of attraction and active comparison. *Behavioral Ecology and Sociobiology* 39:55–59.
- Habib, L., E. M. Bayne, and S. Boutin. 2007. Chronic industrial noise affects pairing success and age structure of ovenbirds *Seiurus aurocapilla*. *Journal of Applied Ecology* 44:176–184.
- Holloran, M. J. 2005. Greater sage-grouse (*Centrocercus urophasianus*) population response to natural gas field development in western

- Wyoming. Department of Zoology and Physiology, University of Wyoming, Laramie.
- Holloran, M., R. Kaiser, and W. Hubert. 2010. Yearling greater sage-grouse response to energy development in Wyoming. *Journal of Wildlife Management* 74:65–72.
- Hu, Y., and G. C. Cardoso. 2010. Which birds adjust the frequency of vocalizations in urban noise? *Animal Behaviour* 79:863–867.
- Ingelfinger, F., and S. Anderson. 2004. Passerine response to roads associated with natural gas extraction in a sagebrush steppe habitat. *Western North American Naturalist* 64:385–395.
- Jankowski, M. D., J. C. Franson, E. Möstl, W. P. Porter, and E. K. Hofmeister. 2010. Testing independent and interactive effects of corticosterone and synergized resmethrin on the immune response to West Nile virus in chickens. *Toxicology* 269:81–88.
- Kaiser, R. 2006. Recruitment by greater sage-grouse in association with natural gas development in western Wyoming. Department of Zoology and Physiology, University of Wyoming, Laramie.
- Lengagne, T. 2008. Traffic noise affects communication behaviour in a breeding anuran, *Hyla arborea*. *Biological Conservation* 141:2023–2031.
- Leonard, M., and A. Horn. 2008. Does ambient noise affect growth and begging call structure in nestling birds? *Behavioral Ecology* 19:502–507.
- Naugle, D. E., et al. 2004. West Nile virus: pending crisis for greater sage-grouse. *Ecology Letters* 7:704–713.
- Patricelli, G., and J. Blickley. 2006. Avian communication in urban noise: causes and consequences of vocal adjustment. *The Auk* 123:639–649.
- Patricelli, G., and A. Krakauer. 2010. Tactical allocation of effort among multiple signals in sage grouse: an experiment with a robotic female. *Behavioral Ecology* 21:97–106.
- Quinn, L., J. Whittingham, J. Butler, and W. Cresswell. 2006. Noise, predation risk compensation and vigilance in the chaffinch *Fringilla coelebs*. *Journal of Avian Biology* 37:601–608.
- Rabin, L. A., R. G. Coss, and D. H. Owings. 2006. The effects of wind turbines on antipredator behavior in California ground squirrels (*Spermophilus beecheyi*). *Biological Conservation* 131:410–420.
- Rheindt, F. E. 2003. The impact of roads on birds: does song frequency play a role in determining susceptibility to noise pollution? *Journal of Ornithology* 144:295–306.
- Richardson, W. J. 1995. Marine mammals and noise. Academic Press, San Diego, California.
- Sawyer, H., M. Kauffman, and R. Nielson. 2009. Influence of well pad activity on winter habitat selection patterns of mule deer. *Journal of Wildlife Management* 73:1052–1061.
- Schroeder, M., and L. Robb. 2003. Fidelity of greater sage-grouse *Centrocercus urophasianus* to breeding areas in a fragmented landscape. *Wildlife Biology* 9:291–299.
- Slabbekoorn, H., and E. A. P. Ripmeester. 2008. Birdsong and anthropogenic noise: implications and applications for conservation. *Molecular Ecology* 17:72–83.
- Sun, J. W. C., and P. M. Narins. 2005. Anthropogenic sounds differentially affect amphibian call rate. *Biological Conservation* 121:419–427.
- Tyack, P. L., et al. 2011. Beaked whales respond to simulated and actual navy sonar. *Public Library of Science One* 6:e17009. DOI: 10.1371.
- van der Zande, A. N., W. J. ter Keurs, and W. J. van der Weijden. 1980. The impact of roads on the densities of four bird species in an open field habitat—evidence of a long-distance effect. *Biological Conservation* 18:299–321.
- Vehrencamp, S., J. Bradbury, and R. Gibson. 1989. The energetic cost of display in male sage grouse. *Animal Behaviour* 38:885–896.
- Walker, B. L., D. E. Naugle, and K. E. Doherty. 2007. Greater sage-grouse population response to energy development and habitat loss. *Journal of Wildlife Management* 71:2644–2654.
- Walsh, D. P., G. C. White, T. E. Remington, and D. C. Bowden. 2004. Evaluation of the lek-count index for greater sage-grouse. *Wildlife Society Bulletin* 32:56–68.
- Warren, P. S., M. Katti, M. Ermann, and A. Brazel. 2006. Urban bioacoustics: it's not just noise. *Animal Behaviour* 71:491–502.
- Weisenberger, M. E., P. R. Krausman, M. C. Wallace, D. W. D. Young, and O. E. Maughan. 1996. Effects of simulated jet aircraft noise on heart rate and behavior of desert ungulates. *The Journal of Wildlife Management* 60:52–61.
- Wiley, R. H. 1973. Territoriality and non-random mating in sage grouse (*Centrocercus urophasianus*). *Animal Behaviour Monographs* 6:85–169.
- Wright, A., et al. 2007. Anthropogenic noise as a stressor in animals: a multidisciplinary perspective. *International Journal of Comparative Psychology* 20:250–273.





United States Department of the Interior

OFFICE OF THE SECRETARY

Office of Environmental Policy and Compliance

Richard B. Russell Federal Building

75 Spring Street, S.W.

Atlanta, Georgia 30303



ER 13/0373

9043.1

July 15, 2013

Mr. Nicholas Germanos
HQ ACC/A7PS
129 Andrews Street, Suite 332
Langley AFB, VA 23665-2769

Re: Comments of the Revised Draft Environmental Impact Statement (DEIS) for the F-35A Operational Basing at Mountain Home Air Force Base – Elmore, Owyhee, and Twin Falls Counties, Idaho – 01EIFW00-2012-CPA-0058

Dear Mr. Germanos:

The United States Department of the Interior (Department) has reviewed the revised DEIS for the F-35A Operational Basing at Mountain Home Air Force Base at Elmore, Owyhee, and Twin Falls Counties, Idaho. The revised DEIS analyzes six proposed sites located in five states, one of which includes the Mountain Home Air Force Base (MHAFB) located in Elmore County, Idaho, with air space extending into Owyhee and Twin Falls Counties, Idaho. The comments below deal exclusively with proposal for basing and beddown of F-35A aircraft at the MHAFB and associated airspace located within the State of Idaho.

We thank the Air Force for considering our original comments provided on the DEIS which we provided in our June 4, 2012 letter; we continue to stand by our original comments. However, since submission of our comments on the original DEIS, be aware that the status of *Lepidium papilliferum* (slickspot peppergrass) has changed. On August 8, 2012, the United States District Court for the District of Idaho ordered that the final rule listing slickspot peppergrass as a threatened species under the Endangered Species Act (Act) of 1973, as amended, be vacated and remanded for further consideration consistent with the court's decision. At this time, the Department is still awaiting legal advice on the interpretation of this decision. Until we receive further legal guidance, the Department is considering slickspot peppergrass to be a species proposed for listing as endangered under the Act. The Department continues to encourage proactive conservation of this endemic southern Idaho plant as our agency addresses the court's decision regarding slickspot peppergrass.

We applaud the Air Force for providing more extensive analyses on the effects of noise on wildlife, including the greater sage-grouse (*Centrocercus urophasianus*, in the revised DEIS. However, we continue to encourage conservation efforts for the greater sage-grouse as proactive conservation may preclude the need to list this species under the Act. In our June 2012 comments, we encouraged the Air Force to consider recent research from Dr. Gail Patricelli's lab at the University of California Davis regarding greater sage-grouse responses to noise as a basis for use of conservation measures to minimize potential Project-related noise effects to this candidate species. We have enclosed a copy of a recent peer-reviewed article on the effects of intermittent noise on greater sage-grouse lek attendance co-authored by Dr. Patricelli for your consideration (Blickley et al. 2012, entire).

Thank you for your interest in threatened and endangered species conservation. If you have questions or need additional information, please contact Barbara Chaney on (208) 378-5259 I can be reached at (404) 331-4524 or via email at joyce_stanley@ios.doi.gov.

Sincerely,

A handwritten signature in black ink, appearing to read "J. Stanley", with a stylized, flowing script.

Joyce Stanley, MPA
Regional Environmental Protection Specialist

Attachment(s)

cc: Jerry Ziewitz – FWS
Gary Lecain - USGS
Anita Barnett – NPS
OEPC – WASH

References Cited

Blickley, J. L., D. Blackwood, and G. L. Patricelli. 2012. Experimental Evidence for the Effects of Chronic Anthropogenic Noise on Abundance of Greater Sage-Crouse at Leks. *Conservation Biology*. 26(3). Pp. 461-471.

Germanos, Nicholas M Civ USAF HQ ACC/A7NS

From: Greg N Weaver
Sent: Monday, July 15, 2013 1:12 PM
To: Germanos, Nicholas M Civ USAF HQ ACC/A7NS
Subject: Oppose F-35's in Burlington, Vermont

I oppose basing the F-35's in Burlington, Vermont. The F-35 is too large and noisy to be based so close to Vermont's largest city and surrounding towns. Not only will the noise effect us and our property values, the danger of lost lives, should there ever be an accident, is to high of a price to pay.

Respectfully submitted,

Greg N. Weaver

Sent from my iPhone

Germanos, Nicholas M Civ USAF HQ ACC/A7NS

From: John Freidin
Sent: Monday, July 15, 2013 1:13 PM
To: Germanos, Nicholas M Civ USAF HQ ACC/A7NS
Subject: Vermont and F35

Dear Sir:

I strongly oppose the basing of F35 aircraft in Vermont.

Their presence will place unacceptable burdens on thousands of families who live near the airport. Some will be forced to sell their homes and try to purchase new housing in an area where housing costs far outstrip families' ability to pay. Others will have to remain in housing that will be less pleasant and will probably depreciate in value as a result. Many of these families are poor and already under more stress than is good for any healthy society. The USAF ought not make their lives more challenging.

The USAF has not adhered to impartial and truthful processes. By its own admission, it has misstated facts about the F35 and the opinions of Vermonters. It rejected the findings of its own quantitative assessment of potential bases and stated that it would instead use qualitative criteria. Yet we have not been told what those qualitative criteria are. Why did it go through a quantitative process, if it did not intend to base its decision on the outcome of that process? Making decisions in this manner undermines confidence in our government and the USAF. That too damages a healthy society.

Thus far the F35 has proven to be a problematic weapon, costing far more than budgeted. The USAF should be held accountable for these failures.

Having recently tried to make a phone call while parked near the airport when F16s were taking off, I could neither hear the party I was calling nor could he hear what I was saying. Such excessive noise should not be allowed to continue to affect the quality of life and the health of citizens in this quiet state.

Residents of the two states that scored higher than Vermont on the Air Force's quantitative assessment have not expressed opposition to the F35. Here opposition is vigorous and widespread. Why not base the F35 where it is wanted? Please do not impose it on a state that has other priorities.

Thank you for reading my email.
John Freidin

John S. Freidin

Germanos, Nicholas M Civ USAF HQ ACC/A7NS

From: Carol Altobelli
Sent: Monday, July 15, 2013 1:18 PM
To: Germanos, Nicholas M Civ USAF HQ ACC/A7NS
Subject: F35

Dear Mr. Nick Germanos,

I am opposed to the F35s coming to Vermont. I feel very strongly that it is a grave mistake.

I live in Winooski and I don't want to risk loosing value in my home which I have worked very hard for.

I believe in the military and support VTANG but Patriotic loyalty on this issue should not put me or my family in a situation where we must face the risk of the value in our home being reduced or potential hearing loss, or even just the disturbance of these F35 jets flying over our homes.

The F16s are bad enough. Please don't add insult to injury make us endure anything even remotely louder.

Thank you.

Penny Libercent.

Germanos, Nicholas M Civ USAF HQ ACC/A7NS

From: lcurry
Sent: Monday, July 15, 2013 11:57 AM
To: Germanos, Nicholas M Civ USAF HQ ACC/A7NS
Subject: Basing F-35's in Burlington, VT

Dear Mr. Germanos,

This message is to register my opposition to any plan to base F-35 stealth fighter planes in Chittenden County, VT.

As I understand it from the Wall Street Journal's article of June 28, 2013, the program has been a bit of an albatross around the Pentagon's budget, but Lockheed Martin is driving the production schedule due to sales projections and commitments. As we know, the military industrial complex is literally one of our economy's largest engines and the US government is hard pressed to limit production without hurting our economy. However, I understand that F-35 production represents roughly 30% of the reductions needed in the DOD's budget under mandatory spending reductions that recently went into effect. If it is announced that Chittenden County is not an appropriate place to base the planes, this could assist the DOD in its considerations of delaying production. Instead, our little local economy is being held hostage to the forces of international military sales. Meanwhile, the F-16 is not obsolete and is providing the defense we need. The reason for switching to F-35's appears to be simply that Lockheed Martin needs to fulfill its sales orders.

It makes horrible economic sense for our region to base the F-35's here. Already we have seen the devastating effects on the residential neighborhood surrounding the regional airport of noise from the F-16's and even civilian airplane traffic currently based here. Additional and louder air pollution will further crush this residential market. Of course, conspiracy theories abound and many residents believe that developers are literally waiting in the wings of the F-35 to purchase condemned properties from the airport and redevelop the area to commercial uses. How tragic it would be if their predictions come true - the ultimate collusion between the military branch of government and the profit motives of private enterprise at the expense of regular working families who need economically priced housing in a tight and expensive housing market. VT's unemployment rate is one of the lowest in the nation, so the promise of any retail sector and service jobs is unattractive compared to the damage the noise will have on the local economy's residential market.

Finally, I understand that the recent Environmental Impact Statement from 2010 indicates that the number of households that will be affected by the F-35 noise has doubled to 7,000 from the original figure of 3,500 people and will affect 2,900 households. The strongest impact, according to medical professionals, will be on children who go to school nearby at the Chamberlain School down the road from the airport. There is evidence of damaging medical, neurological and psychological effects on children because of the noise. It is truly sad, but not surprising, that our military branch would sacrifice the health and well being for its financial shenanigans with defense contractors like Lockheed Martin. If you are in a position of having any influence over this possibility, I urge you to consider the humanitarian arguments against thrusting this disruptive and damaging pollution on our kids in South Burlington.

Thank you for considering these comments.
Liz Curry

cc: Senator Patrick Leahy

Germanos, Nicholas M Civ USAF HQ ACC/A7NS

From: Paula Schramm
Sent: Monday, July 15, 2013 12:03 PM
To: Germanos, Nicholas M Civ USAF HQ ACC/A7NS
Subject: Opposed to basing F-35 in Burlington

Dear Nicholas Germanos,

I am writing to express my strong opposition to basing the F-35 in Burlington. After reading the latest environmental report I am alarmed at how many more homes and people in the surrounding residential areas will be affected by unacceptable noise levels from the F-35's. This will adversely affect a preponderance of lower-income and working class families who have fewer options and less ability to relocate. The lowered property values will compound their difficulties. This affects elementary schools and hospitals as well. The harmful effects on our young children are very concerning. Siting the F-35 in such a populated and residential place is a very poor choice.

I would also like to request a brief extension of the Public Comment period based on the fact that at least 100 pages of important information were NOT released until nearly 3 weeks after the Revised Draft Environmental Impact Statement was released. Given that this section included substantive questions that people were asking, and the important information given by the Air Force in response to those questions, I feel that it is only reasonable to offer people ample time to consider that information. I only heard about some of this information 2 days ago .

Please extend the Public Comment period to offer the public 45 days (starting from the date that the FULL Revised DEIS was released, rather than May 31st, the date on which the INCOMPLETE Revised DEIS was released.)

There is great controversy over this basing in our community, and it is essential that Vermonters be given the most complete opportunity to read, understand and respond to the important information being released lately by the Air Force. It's crucial that the process by which this decision is made be free of further error.

Sincerely,
Paula Schramm

Germanos, Nicholas M Civ USAF HQ ACC/A7NS

From: jennifer koch
Sent: Monday, July 15, 2013 12:12 PM
To: Germanos, Nicholas M Civ USAF HQ ACC/A7NS
Subject: F-35 and Historic Preservation

Dear Mr. Germanos,

We are homeowners of a historic building in the Mill District of Burlington, Vt which is in the in the Flight Zone of the proposed F-35. We both live in and run two businesses from our property a custom frame shop and a bed and breakfast.

The DEIS refers generically to historic district properties in Burlington and Winooski but does not identify what they consist of, or where they are located, or what the impacts on them would be. In fact, properties listed on the National Register of Historic Places will fall within the highest noise zone of the F-35A, subjected daily to Lmax values of 115 dB, violating the public health standards of the World Health Organization and the National Institutes of Occupational Safety and Health. They will be subject to DNL noise levels of 65 dB or higher, rendering them unsuitable for residential use - even though most of them are historic residential properties. An EIS that fails to identify these historic residential properties, fails to determine whether they are residential or not, fails to assess the impacts of 65 DNL or louder noise on their continued viability as historic residential properties, and fails to consider alternatives to the project that would avoid these impacts, makes a mockery of both NEPA and the National Historic Preservation Act.

THEREFORE, we request referral to the Advisory Council on Historic Preservation.

Thank you,
Jennifer Koch and Gregg Blasdel

Germanos, Nicholas M Civ USAF HQ ACC/A7NS

From: Christopher Lamothe
Sent: Monday, July 15, 2013 12:31 PM
To: Germanos, Nicholas M Civ USAF HQ ACC/A7NS
Subject: Support F-35

Sir,

I support the basing of the F-35 at BTV.

Sincerely,

Chris LaMothe

Germanos, Nicholas M Civ USAF HQ ACC/A7NS

From: Amy Barcomb
Sent: Monday, July 15, 2013 12:33 PM
To: Germanos, Nicholas M Civ USAF HQ ACC/A7NS
Subject: Vermont F-35 basing

Dear Mr. Germanos,

I am writing to register my opposition to basing the F-35s in South Burlington, Vermont. I live in Winooski, which is located about three miles from the airport.

My main concern is the impact on property values and by extension the tax base of Winooski. It seems to me there are several questions about the reliability of the data in the DEIS and the revised DEIS, but both of them state that large portions of Winooski would be considered unsuitable for residential purposes.

I also have concerns about the safety of basing a new plane in such a densely populated area. There is no strategic advantage to basing these planes in Vermont. I fully support the Air National Guard and hope that when the F-16s are phased out that a mission can be found for them more compatible for a National Guard base situated at a commercial airport in a densely populated area.

Respectfully,
Amy Barcomb

Germanos, Nicholas M Civ USAF HQ ACC/A7NS

From:
Sent: Monday, July 15, 2013 12:38 PM
To: Germanos, Nicholas M Civ USAF HQ ACC/A7NS
Subject: F35 Basing - Burlington, VT - extension requested

To: Nicholas Germanos

Dear Mr. Germanos -

Thank you for the opportunity to have my opinion known in relation to the proposed bedding down of the F35A Stealth Bomber at Burlington International Airport in Burlington, VT.

As my previous e-mails and letters have stated, I AM STRONGLY AND DECIDEDLY AGAINST THIS PROPOSAL. The Air Force study associated with this decision has been shown to be based on faulty information. These errors have been many, and are significant in how they affect the final recommendations of the report. The impacts to the local area have only begun to be re-evaluated.

With this background in mind, please note the request below, as it is very important:

I am writing to request a brief extension of the Public Comment period, based upon the fact that at least 100 pages of important information were not released until nearly 3 weeks after the Revised Draft Environmental Impact Statement was released. Given that this section included substantive questions that people were asking, and the important information given by the Air Force in response to those questions, we believe that it is only reasonable to offer people ample time to consider that information. Please extend the Public Comment period to offer the public 45 days starting from the date that the FULL Revised DEIS was released, rather than May 31st, the date on which the incomplete Revised DEIS was released. As you know, there is great controversy over this basing in our community. It is essential that Vermont citizens be given the most complete opportunity to read, understand, and respond to the information being released by the Air Force. It's crucial that the process by which this decision is made be free of further error.

Thank you for your kind attention to this matter.

Best Regards,
Jake Yanulavich

Germanos, Nicholas M Civ USAF HQ ACC/A7NS

From: Bruce Post
Sent: Monday, July 15, 2013 11:19 AM
To: Germanos, Nicholas M Civ USAF HQ ACC/A7NS
Subject: F35 decision

Dear Mr. Germanos:

My name is Bruce Post from Essex, Vermont, and I want to add my perspective - from a long career in the U.S. Congress and at the highest level of Vermont state government - regarding the basing decision for the F-35. Succinctly, I am opposed to basing this plane at the Burlington International Airport. (Please see my attached Op Ed from yesterday's Burlington Free Press.)

First, I know you are doing your job, and I appreciate your service. My father worked for many years as a civilian employee of the DOD. It is not always an easy position in which to be.

Now, let me briefly outline my background, which enables me to have a rather unique perspective on this proposal:

I worked for fifteen years as a congressional staff member, serving several members of the Vermont congressional delegation including U.S. Senator Robert T. Stafford, U.S. Congressman and U.S. Senator James M. Jeffords, and U.S. Congressman Richard W. Mallery. I was Chief of Staff for U.S. Congressman John B. Anderson, a 1980 presidential candidate, on the research and speechwriting staff for U.S. Senator Hubert Humphrey's 1972 presidential campaign and also State Director for U.S. Senator Mark Andrews of North Dakota. Finally, I was Director of the Office of Planning and Research for Vermont Governor Richard A. Snelling. I recently was a Selectman in Essex, Vermont, about eight miles from the Burlington Airport.

I would like to highlight three particular experiences that inform my opposition:

1. As a Professional Staff Member for the U.S. Senate Subcommittee on Education, Arts and Humanities, I personally was responsible for the federal Impact Aid law, which, among other things, provided considerable federal assistance to communities that hosted U.S. military bases. I know, from interacting with many citizens in those communities, that a U.S. military installation cuts both ways: it provides benefits and imposes burdens, hence impact aid. In the case of the F35, the burden/impact it would impose on the residences and people of the nearby neighborhoods and communities so outweighs any subjective economic benefit as to make its basing here indefensible. Simply put, basing the F35 here would be unconscionable: limited gain for a few, significant pain for the many;

2. As former Governor Snelling's Director of Planning and Research, I had to develop a perspective as to the merits and demerits of various state plans. I consulted individual citizens on both sides of an issue. I had to make recommendations that did not please one group or another. I had to weigh my analysis on the grounds of efficacy, economics, and fairness. If I were advising the Governor today, I would recommend his opposition to basing the F35 in Burlington because of the asymmetrical impact on the local population. The fact that the plane might be supported in other parts of Vermont would have had no effect on my professional assessment because of the unacceptable harmful effects on the local population; and

3. As State Director for North Dakota's U.S. Senator Mark Andrews, I often met with representatives of the two SAC bases - Grand Forks and Minot - and the two ICBM missile wings based there. I had respect for many of the Air Force personnel I met, and some of them would

privately tell me of the frustration they felt when political interference higher up overrode their professional assessments of a particular proposal. I also know that the Grand Forks Air Force Base is roughly 14 miles from Grand Forks, surrounded overwhelmingly by empty prairie, and that Minot Air Force Base is roughly 12 miles from downtown Minot, again located amid sparsely-settled prairie. To me, it is manifestly counterintuitive that the F35 should be based in a community that has the highest population density in Vermont on the doorstep of the Burlington International Airport.

I have taken enough of your time, but I thought my career in national and Vermont politics might add a different flavor to this discussion.

Thank you -

Bruce S. Post

Germanos, Nicholas M Civ USAF HQ ACC/A7NS

From: [REDACTED]
Sent: Monday, July 15, 2013 11:23 AM
To: Germanos, Nicholas M Civ USAF HQ ACC/A7NS
Subject: F-35 in VT

Sir, I wish to express my support of assigning the F-35 in VT. I saw that some people against this used speakers to create noise at the decibel level expected from the aircraft. This demonstration showed nothing as the aircraft won't be sitting on the street but will be thousands of feet away and moving. Property value will only be affected if the base does not maintain a flying mission. Just like Portsmouth NH and Plattsburg NY.

The 158th FW is filled with dedicated talented Airmen that keep this country safe. Their performance record is unmatched. The general public does not seem to know what an asset they are to our country.

Please support the F-35 coming to VT.

Sean Galvin

Germanos, Nicholas M Civ USAF HQ ACC/A7NS

From:
Sent: Monday, July 15, 2013 11:26 AM
To: Germanos, Nicholas M Civ USAF HQ ACC/A7NS
Subject: F35 burlington

I am opposed to the basing of the F35 in Burlington Vermont.

Thanks
Peter Garritano

Germanos, Nicholas M Civ USAF HQ ACC/A7NS

From: sabin gratz
Sent: Monday, July 15, 2013 11:30 AM
To: Germanos, Nicholas M Civ USAF HQ ACC/A7NS
Subject: f-35's in Burlington Vermont

Dear Mr. Germanos,

I am writing you today with deep opposition to the f35 program being based in based in South Burlington Vermont. There are so many reason's in my opinion that this is a very bad idea but the biggest is the major impact the noise will cause to Vermont's largest cities and most populated surrounding towns. I am a resident of Winooski, which would probably take the brunt of the impact of this decision since we are directly under the flight path. We, the citizens of this city have been working hard to create a town center and rich community over the past 7 years. Our city is flourishing here, and attracts thousands of visitors to our town which is rich with restaurants, bars, and places of activity. This is a huge revenue stream for us, and a major attraction for anyone in the surrounding areas. I just cannot fathom why anyone would think that basing these extremely loud aircrafts over one of our states richest assets is a good idea. The f16's that currently fly over are a huge negative to the area and make it almost impossible to be outside when they are flying over. I am almost certain that all the work we have put into our homes and communities here will be negatively affected if this decision if it is to go through. Please re-consider basing these planes in South Burlington. It just seems like just basic human common sense that aircraft of this type would have to be based out of a much less populated area. So please consider putting these planes somewhere else.

Thanks for you time,
Sabin Gratz

Germanos, Nicholas M Civ USAF HQ ACC/A7NS

From: Sabrina Abair
Sent: Monday, July 15, 2013 11:49 AM
To: Germanos, Nicholas M Civ USAF HQ ACC/A7NS
Subject: In support of basing F 35 Burlington Vermont

Dear Sir,

I am writing this email to voice my support of basing the F 35 in Burlington Vermont. This aircraft is a much needed upgrade for the 158th fighter wing. And will ensure many aircraft maintenance jobs remain in and around the surrounding community. If the aircraft is not based in Vermont the financial impacts will be negatively throughout the state. Many Vermonters are employed by the air guard and live locally, and rely on the income and benefits the military provides for their family.

Thank You,
Sabrina Abair

Sent from my iPhone

Germanos, Nicholas M Civ USAF HQ ACC/A7NS

From: jhendley
Sent: Monday, July 15, 2013 11:49 AM
To: Germanos, Nicholas M Civ USAF HQ ACC/A7NS
Subject: opposing basing of F-35's in Vermont and everywhere else

Dear Mr. Germanos,

I am writing to encourage the Air Force not to base the F-35's in Vermont or anywhere else until noise issues are resolved. Regular loud noise hurts all creatures, disrupting wildlife as well as human beings and adding to hearing damage. The F-35 needs more work on it.

Thank you for "listening".

Sincerely,

Jane Hendley

Germanos, Nicholas M Civ USAF HQ ACC/A7NS

From: Amber deLaurentis
Sent: Monday, July 15, 2013 11:57 AM
To: Germanos, Nicholas M Civ USAF HQ ACC/A7NS
Subject: F-35 opposition - Essex Junction

Hello Nicholas,

I am opposed to the F-35 basing in Burlington, Vermont. I teach piano and voice out of my home in Essex Junction, VT. The noise of planes flying overhead is not only distracting, but disabling. Any time a plane flies near the house while teaching, any playing or talking has to come to an abrupt halt because of the deafening sounds of the F-16's. I can't imagine having to tolerate anything louder. Not only do students -- and myself -- have to endure the sound of the jets, but it takes a few minutes to regain concentration. This greatly affects the quality of music lessons.

Please don't allow the beautiful skies of Vermont to be contaminated with F-35's. We deserve better.

Sincerely,

Amber deLaurentis Cleary

Germanos, Nicholas M Civ USAF HQ ACC/A7NS

From: Lee Burch
Sent: Monday, July 15, 2013 12:19 AM
To: Germanos, Nicholas M Civ USAF HQ ACC/A7NS
Cc: Council of Environmental Policy
Subject: PLEASE Extend Comment Period of F-35s in Burlington

Dear Mr. Germanos,

I have already written you a snail mail letter opposing the F-35s at the Burlington International Airport (which you should probably receive tomorrow, on Monday), but I am emailing you tonight to ask you to please extend the comment period because of the 100 pages that had some very important new information that came three weeks late, after the 5/31/13 RDEIS. The supporters of the F-35 are making heavy use in the media that the Air Guard will close if there is no F-35 basing and that there is no health impact. I believe that many people need more time to sort out all the facts.

I would appreciate it very much if you would extend the comment period.
Thank you so much,
Lee Burch

Germanos, Nicholas M Civ USAF HQ ACC/A7NS

From: Lee Burch
Sent: Monday, July 15, 2013 12:36 AM
To: Germanos, Nicholas M Civ USAF HQ ACC/A7NS
Cc: Council of Environmental Quality
Subject: PLEASE Extend Comment Period of F-35s in Burlington

Dear Mr. Germanos,

Forgive me if you have now received this email twice, but I cc'd the incorrect address of the Council of Environmental Quality and since my email was returned, I wasn't sure you received a copy either. I have already written you a snail mail letter (which you should probably receive tomorrow, on Monday) opposing the the F-35s at the Burlington International Airport, but I am emailing you tonight to ask you to please extend the comment period because of the 100 pages that had some very important new information and that came three weeks late, after the 5/31/13 RDEIS. The supporters of the F-35 are making heavy use in the media that the Air Guard will close if there is no F-35 basing and that there are no health impacts. I believe that many people need more time to sort out all the facts.

I would appreciate it very much if you would extend the comment period.

Thank you so much,
Lee Burch
Burlington, Vermont

Germanos, Nicholas M Civ USAF HQ ACC/A7NS

From: Kirby, Katherine E
Sent: Monday, July 15, 2013 12:20 AM
To: Germanos, Nicholas M Civ USAF HQ ACC/A7NS
Subject: Letter of Opposition - F-35, Burlington
Attachments: Public Comment 2 -F-35 Basing - Kirby.doc

Dear Mr. Germanos,

Please accept the attached document, which is my Public Comment letter, in strong opposition to the proposed deployment of F-35 aircraft to Burlington, Vermont. I have pasted the text below, in case you have any trouble opening the attachment, and I will be mailing in a hard copy today, postmarked July 15th.

Thank you.

Sincerely,

Katherine E. Kirby, Ph.D.

July 14th, 2013

Mr. Nicholas Germanos
Project Manager, F-35A Operational Basing HQ ACC/A7PS

129 Andrews Street, Suite 332

Langley AFB, VA 23665-2769



Mr. Nicholas Germanos

July 14th, 2013

Project Manager, F-35A Operational Basing
HQ ACC/A7PS
129 Andrews Street, Suite 332
Langley AFB, VA 23665-2769

Dear Mr. Germanos and the US Air Force,

I am writing to you in *very strong opposition* to the proposal to deploy the new F-35A aircraft to Burlington, Vermont. Given that none of the other basing options are located in residential neighborhoods, I find it *outrageous* that the Air Force would choose to locate these planes in the most densely-populated area of our entire state.

I am a professor of Philosophy, and I have specialized in Theoretical and Applied Ethics for my entire educational training and career. Respectfully, I find this basing proposition to be a *radically unethical, unjust imposition upon citizens*. Even in the crudest utilitarian analysis of cost vs. benefit, I cannot see how this basing would be justified. As “benefit”, there is honor for our Air Guard, little to no benefit to our local economy, and whatever *unexplained* mission capabilities are apparently overriding the *incredible cost* to our neighborhoods and community members.

Those costs are tremendous. When we seek to determine the greatest good for the greatest number of people, human DIGNITY must be weighed more heavily than anything else. This basing, I believe, will result in a violation of the DIGNITY of 7,700 people. That should halt this basing. While that might sound exaggerated, in Ethics, dignity is all about the human being's inherent worth or value. The people who will be affected have worked their whole lives to secure a small piece of what is supposed to be the promise of the American dream – a modest home, a safe environment for their children, and a reasonable quality of life. Do we not deserve to enjoy what we have long-labored to create? The lives that we have built for ourselves are worth *protecting*, while this basing threatens them. It *runs counter to the very mission of the military to protect the well-being of American citizens*. Indeed, this basing reduces the impacted population to casualties of war – to beings who can be sacrificed for the sake of military might.

Please understand that, if this basing were taking place miles and miles away from our residential areas, I would likely not be objecting. I understand that the F-35 program will move forward. *But I believe that it belongs in a remote location.*

In what follows, I wish to explain the many aspects of this basing proposition that I believe violate the rights and dignity of Vermont citizens. Many people tell us that our comments and feedback will have no effect on this decision. But, as I discuss with my Global Studies students, democracy depends on both citizen participation and the willingness of our leaders to listen to us, and to serve our best interests, rather than their own. I hope the Air Force will choose to *serve the interests of citizens*.

My opposition to the F-35A deployment in Vermont is fourfold:

(1) POPULATION AND OUR HOMES:

The Air Force is asking Vermonters to allow the military to locate these aircraft directly in THE MOST POPULATED AREA OF OUR ENTIRE STATE. These planes will be literally 5 minutes outside of our greatest city! As the Rev.DEIS states, up to 7,700 people will live with noise that registers above 65dB DNL, in homes that will be designated by the FAA, HUD, and other federal agencies as “not compatible with residential use.” This is 3,000 more people than are currently affected in this way. Our own calculations suggest that this is STILL an underestimate of the population within this zone. **I ask the Air Force to re-examine these numbers.** The Rev.DEIS clearly indicates that the F-35 is 3-4 times louder than the F-16, but the F-16 is already almost unbearable. The Air Guard, in fact, denies that the planes are any louder than the F-16, contrary to the Rev.DEIS.

There is no discussion of compensation for what will be lost in terms of the value of our homes, even though in our modest neighborhoods, these homes are our lifesavings and our retirement. I don't understand how this is anything but an *unreasonable seizure of our property, and a radically unjust violation of our rights*. The Rev.DEIS dismisses studies (in the Appendices) that suggest that homes will lose value, even though careful analysis of real estate studies – and even just common-sense – tells us that homes that are “not compatible with residential use” will not sell for the same prices as homes that are not so designated. We have found dozens of real estate studies that conclude that property values decrease when noise reaches such levels and homes are designated “not compatible with residential use.” These studies have been reviewed, and confirmed as reliable, by economists and statisticians in our local area. *How can the Air Force, in good conscience, deny that our homes will be less valuable once the noise level is 3-4 times what it is now?* Who would buy such a home? I will ABSOLUTELY move from this neighborhood if the F-35's are deployed here.

(2) WINOOSKI – OUR TOWN & OUR DIVERSITY & OUR STRUGGLES

I live in Winooski, where approximately $\frac{3}{4}$ of the homes lay within the predicted 65 + dB DNL level. This will destroy our city. We are already the lowest-income community in the Burlington area, but what this means in Vermont is that we are the only city near Burlington where young families, young professionals, new Americans, retirees, etc. can afford to purchase a home. Please understand that there are not very many cities or towns directly around Burlington. Winooski and South Burlington are closest. The only other towns or cities close by are Essex, Shelburne, and Williston. After that, all towns are at least 25 minutes by car. *It is not okay to render $\frac{3}{4}$ of the houses in 1 of the 5 cities/towns directly surrounding Burlington “not compatible with residential life.”*

The Rev. DEIS says (as did the previous DEIS) that low-income and minority populations are disproportionately negatively affected by this basing. This is a vulnerable community, where many people already struggle to make ends meet. This basing would not be favored by our Congressional delegation, Air Guard, or local business elites, if it were going to affect Shelburne or Essex – where they live – the way it is affecting Winooski. The wealthy citizens in those towns would be outraged, as we are outraged. Again, as an Ethicist, I see this as *a radical environmental injustice*, where

the disempowered will have no choice but to live with the negative effects of this basing. These folks cannot move, because they rely on affordable housing, bus-lines, and stores and schools within walking distance. Those with the means to move away will do so. And the City of Winooski will suffer greatly.

Another aspect of the devastating effect on Winooski is that our city has invested, in only the last decade, millions of dollars into a development strategy for our awesome downtown. We have *really* superb restaurants with outdoor seating, a gorgeous boardwalk and park area along the historic Winooski River (named this by the Abenaki native community), and brand new luxury waterfront condos and townhouses. ***ALL OF THE DOWNTOWN area falls within the "not compatible with residential use" zone.***

Finally, Winooski is ***THE MOST DIVERSE CITY IN THE WHOLE STATE OF VERMONT.*** We are proud of our diversity, and we have welcomed new Americans from countries all over the world, from Sudan to the Democratic Republic of Congo to Nepal to Bosnia, etc. Over 20 languages are spoken in Winooski. Many of these new Americans came here through our outstanding Refugee Resettlement Program. They are arriving in our neighborhoods from war-torn countries, and they find the present F-16's a real challenge to life with. We have more people of color in our 1-square-mile City than any other town or City in Vermont. Again, because this basing places $\frac{3}{4}$ of Winooski in the "not compatible with residential use" zone, this is ***an environmental injustice***, this time because it ***impacts racial minorities*** to a far-greater degree than others.]

(3) HEALTH, SAFETY, AND OUR CHILDREN:

The Rev.DEIS states that scientific research demonstrates that noise at the level that will be produced by the F-35s in our area has been shown to cause cognitive and developmental impairment or delay in children. ***THIS FACT, ALONE, SHOULD STOP THIS BASING.*** There are at least 1,000-1,500 children living and going to school in the noise zone. And yet, there has been no discussion of soundproofing our schools to protect our children. In fact, proponents of the basing (including our Air Guard, Senator Leahy, and Senator Sanders) actively DENY that there is any harm done by exposure to excessive noise (at this level). ***How can the Air Force deploy a plane to a basing location where 1,500 children will be harmed? This is reprehensible.***

Further, The Rev.DEIS fails to acknowledge other health effects (for children and adults) that are well-documented in scientific research. For example, there is no mention or citation of the ***World Health Organization's 2011 Report, entitled, "The Burden of Disease from Environmental Noise."*** How is it that such a document is not considered in an Environmental Impact Study where the greatest environmental impact comes from noise? ***I request that the Air Force include studies such as this one, and other research conducted in most recent decade.*** Of course, the housing designation ("not compatible with residential use") is motivated by the attempt to prevent harm to people living in areas exposed to noise. These health concerns, according to scientific analysis that is much more RECENT than studies used in the Rev.DEIS, include high blood pressure, increased risk of heart attack, hypertension, hearing loss, and many other effects. Even if the Air Force is not convinced that harm will be done, the ***mere possibility*** that 7,700 people would suffer health effects from the basing should prevent deployment to]

Burlington, given that NONE of the other 5 locations have this kind of impact, and many have DECREASED NEGATIVE NOISE IMPACT ON RESIDENTIAL HOUSEHOLDS?

In addition, it is known that military aircraft, in their first years of operational basing are far more likely to CRASH than those same aircraft in later years of operational basing. ***It is absolutely unreasonable that Burlington AGS would use Commercial crash zones instead of Military crash zones, when operating military aircraft. Please explain why they are not required to use Military crash zones when they are flying military aircraft on military drills.*** Again, this aircraft should be deployed to a location where residents do not have to live, work, and go to school in the crash zone, at least until the F-35 has a more extensive flight history.

Finally, and significantly, if the F-35 fleet is located in *only a few places* in the country, doesn't that make us *a TARGET for attack*? If a country (China?), or even a terrorist organization, were to launch an attack on the United States, would they not try to cripple our air defense? ***Is the Air Force turning Burlington into a target for attack?***

(4) DECEPTION IN THE PROCESS:

Burlington AGS was awarded points on the initial scoring sheet that we did not deserve. That Scoring Sheet indicated that there were ZERO homes in the crash zone and the noise zone. In reality, there are THOUSANDS of homes in those zones. Numerous FOIA requests have been essentially rejected. Vermonters do not trust that this basing decision has not been infected by political game-playing and deal-making. This suspicion is not likely to fade. ***I urge the Air Force to remove Burlington AGS from consideration in this first round of basing. People are not going to stop questioning the legitimacy of this basing decision. There has been too much deception and lack of transparency so far.***

As the Revised DEIS clearly says, **Burlington AGS is NOT the environmentally-preferred alternative.** I understand that there are other considerations that are overriding the environmental concerns, but I think it is *shameful* that *environmental JUSTICE* warrants only 10 points in the overall assessment of the appropriateness of a basing location. ***The ends do NOT justify the means, when the "means" requires harm to individuals, the destruction of a community, and the injustice of targeting low-income and minority groups. Please deploy the F-35 in a place where citizens are not harmed.***

Thank you for the opportunity to express my views

Sincerely,

Katherine E. Kirby, Ph.D.



Germanos, Nicholas M Civ USAF HQ ACC/A7NS

From: Terryl N. Kinder
Sent: Monday, July 15, 2013 2:44 AM
To: Germanos, Nicholas M Civ USAF HQ ACC/A7NS
Subject: F-35s

Dear Sir,

I am opposed to the F35 basing in VT, where I own a home in which I live for six months of the year. I bought in Winooski because of its peaceful location on the river, and I definitely do NOT want to hear fighter jets, day and night!

Yours,
Dr Terryl N. Kinder

Pr. Terryl N. Kinder

Germanos, Nicholas M Civ USAF HQ ACC/A7NS

From: Sally MacLeod
Sent: Monday, July 15, 2013 3:54 AM
To: Germanos, Nicholas M Civ USAF HQ ACC/A7NS
Subject: F-35A's in Burlington. Vt

Dear Sir,

I am completely opposed to the basing of F-35A's in Burlington, Vt. The impact to the environment will be extreme and the area is far too residential to suffer noise levels of this kind.

Sincerely,

Sally Reichert

Germanos, Nicholas M Civ USAF HQ ACC/A7NS

From: Jason
Sent: Monday, July 15, 2013 6:11 AM
To: Germanos, Nicholas M Civ USAF HQ ACC/A7NS
Subject: No f35

This project is NOT for Burlington!!

Germanos, Nicholas M Civ USAF HQ ACC/A7NS

From: Pamela Polston
Sent: Monday, July 15, 2013 6:19 AM
To: Germanos, Nicholas M Civ USAF HQ ACC/A7NS
Subject: Letter in opposition to basing F35 at BTV

Dear Mr. Germanos--

I am opposed to the F35 Basing in Vermont because:

1. It will harm 1,500 Vermont children: physically, emotionally and cognitively
2. It will lower the home values of 4,000 households
3. It will degrade and possibly destroy the quality of life of 8,000 people
4. It will risk the lives of thousands of people because of a greater probability of crashes from a warplane with no established safety record
5. It disproportionately negatively affects minorities and low-income people
6. It will pollute our environment
7. The AF says the F-35 will bring environmental harm to our communities
8. The AF says that Burlington is NOT the environmentally preferred base
9. Substantive errors were made in the scoring process
10. Substantive errors were made in the Draft EIS
11. There are many unanswered questions about the base selection process

Please count my voice among the thousands who oppose basing the F35 in Burlington, VT. There is NOTHING good or appropriate about it.

thank you,
Pamela Polston

Germanos, Nicholas M Civ USAF HQ ACC/A7NS

From: Pamela Polston
Sent: Monday, July 15, 2013 8:22 AM
To: Germanos, Nicholas M Civ USAF HQ ACC/A7NS
Subject: Extend public comment period on F35

Dear Mr. Germanos--

"I am writing to request a brief extension of the Public Comment period, based upon the fact that at least 100 pages of important information were not released until nearly 3 weeks after the Revised Draft Environmental Impact Statement was released. Given that this section included substantive questions that people were asking, and the important information given by the Air Force in response to those questions, we believe that it is only reasonable to offer people ample time to consider that information. Please extend the Public Comment period to offer the public 45 days starting from the date that the FULL Revised DEIS was released, rather than May 31st, the date on which the incomplete Revised DEIS was released. As you know, there is great controversy over this basing in our community. It is essential that Vermont citizens be given the most complete opportunity to read, understand, and respond to the information being released by the Air Force. It's crucial that the process by which this decision is made be free of further error."

Thank you for your consideration.
pamela Polston

Germanos, Nicholas M Civ USAF HQ ACC/A7NS

From: Victoria Fraser
Sent: Monday, July 15, 2013 6:51 AM
To: Germanos, Nicholas M Civ USAF HQ ACC/A7NS
Subject: Please Extend Comment Period in Burlington, Vermont

Dear Sir,

I am writing to request that you extend the comment period in Burlington, Vermont regarding the F-35 planes to allow for digestion and communication of new information. This is such an important and contentious issue in this area that an extended time to continue to discuss the situation is needed.

Sincerely,

Victoria Fraser

Germanos, Nicholas M Civ USAF HQ ACC/A7NS

From: Ronald Bowley
Sent: Monday, July 15, 2013 6:53 AM
To: Germanos, Nicholas M Civ USAF HQ ACC/A7NS
Subject: F35 in vermont...

I fully support basing the F-35 aircraft in Vermont, and hope you will select our state for a future airbase.

Sincerely,

Ronald R Bowley
Colchester, VT

Germanos, Nicholas M Civ USAF HQ ACC/A7NS

From: ryan dumont
Sent: Monday, July 15, 2013 7:20 AM
To: Germanos, Nicholas M Civ USAF HQ ACC/A7NS
Subject: F35'S basing in Burlington, VT

Hello, my name is Ryan Dumont. I am a lifelong resident of the north country in NY, my family and I currently reside on the former Plattsburgh Air Force Base. Our local news station WPTZ channel 5 covers both northern NY and VT news. After seeing how many people who oppose you stationing the F35 Fighter Jet in Burlington, VT, I have been very curious as to why the Air Force isn't or hasn't given any thought to stationing the F35'S here on the former PAFB. I'm sure that the Air Force is well aware that we have one of the largest runways in the country here at the former PAFB, and it's a shame to see it sitting here not being used to it's fullest potential, or should I say being used for what it was designed for. The residents in Plattsburgh, NY as well as many other towns in the area were always a strong supporter of PAFB when it was in operation, and I'm sure that we'd welcome you guys back here with open arms. I know that I'm just one person, and my email probably won't do any good, but I really do wish that the Air Force would give some serious thought or consideration to stationing the F35 Fighter Jet, or any other Squadrons back here at the former PAFB. In my personal opinion this base never should've closed, due to the sheer size and strategic location of the base. I'd like to thank you for taking the time to read my email.

Respectfully Submitted,
Ryan Dumont

Sent from Windows Mail

Germanos, Nicholas M Civ USAF HQ ACC/A7NS

From: kathie kretzer
Sent: Monday, July 15, 2013 7:23 AM
To: Germanos, Nicholas M Civ USAF HQ ACC/A7NS
Subject: F35As in Burlington Vermont

I am strongly opposed to basing the F-35As in Burlington Vermont. The noise levels are a significant concern to my children, grandchildren, and me. There is such a population concentration in the Burlington area that it will impact many more people than if they are situated elsewhere in Vermont. This level of noise is unacceptable in our community and creates animosity overall toward the military.

Kathie Kretzer

Germanos, Nicholas M Civ USAF HQ ACC/A7NS

From: ken kretzer
Sent: Monday, July 15, 2013 7:26 AM
To: Germanos, Nicholas M Civ USAF HQ ACC/A7NS
Subject: F35A's in Burlington Vermont

I am strongly opposed to basing the F-35As in Burlington Vermont. This is a very poor choice of location for this activity. The noise levels are a significant concern to my children, grandchildren, and me. There is such a population concentration in the Burlington area that it will impact many more people than if they are situated elsewhere in Vermont. This level of noise is unacceptable in our community and creates animosity overall toward the military.
Ken Kretzer

Germanos, Nicholas M Civ USAF HQ ACC/A7NS

From: Courtney Rose
Sent: Monday, July 15, 2013 7:33 AM
To: Germanos, Nicholas M Civ USAF HQ ACC/A7NS
Cc: mattgthompson
Subject: AGAINST welcoming F-35 to Vermont

Dear Mr. Germanos,

I do not believe that the F-35 planes should be housed in the S. Burlington/VT area. South Burlington is classified as an urban area and is not appropriate as a location for the F-35's.

The noise pollution will harm people's health and property values.

Able residents will leave the area due to noise AND it will affect low-income residents who do not have the option to move away.

I do not believe that the process that ranked Burlington as a possible location was a transparent process.

I believe the Air Force has the responsibility to explain why Burlington was even under consideration as a location compared to the many sights that would have less of an impact on the local population.

I oppose the F-35 program.

Courtney Rose

Germanos, Nicholas M Civ USAF HQ ACC/A7NS

From: Karko Ringer, Anne
Sent: Monday, July 15, 2013 7:40 AM
To: Germanos, Nicholas M Civ USAF HQ ACC/A7NS
Subject: Extension on Vermont F-35 Public Comment Period

Importance: High

Dear Mr. Germanos,

"I am writing to request a brief extension of the Public Comment period, based upon the fact that at least 100 pages of important information were not released until nearly 3 weeks after the Revised Draft Environmental Impact Statement was released. Given that this section included substantive questions that people were asking, and the important information given by the Air Force in response to those questions, we believe that it is only reasonable to offer people ample time to consider that information. Please extend the Public Comment period to offer the public 45 days starting from the date that the FULL Revised DEIS was released, rather than May 31st, the date on which the incomplete Revised DEIS was released. As you know, there is great controversy over this basing in our community. It is essential that Vermont citizens be given the most complete opportunity to read, understand, and respond to the information being released by the Air Force. It's crucial that the process by which this decision is made be free of further error."

Anne Karko Ringer

Germanos, Nicholas M Civ USAF HQ ACC/A7NS

From: Linus Leavens
Sent: Monday, July 15, 2013 7:56 AM
To: Germanos, Nicholas M Civ USAF HQ ACC/A7NS
Subject: Against F-35 basing in So Burlington until there is more information on Low Frequency Noise & Home Values

The EIS process is to allow people affected by new jets that are 2 to 4 times as loud as the old jets to ask questions & express their concerns.
Inadequate information concerning low frequency noise & an unwillingness to take responsibility for the financial impact of USAF actions on home values is what drives me to oppose the F-35.

Linus Leavens

Germanos, Nicholas M Civ USAF HQ ACC/A7NS

From: Kevin Hatin
Sent: Monday, July 15, 2013 8:11 AM
To: Germanos, Nicholas M Civ USAF HQ ACC/A7NS
Subject: We want F 35's!

Please don't be dismayed by the vocal minority. As a lifelong Vermonter, we have been fortunate to have the Guard here with the F 35. The few minutes of noise is not and has not bothered the majority of us. Come to Vermont!

Kevin Hatin

Germanos, Nicholas M Civ USAF HQ ACC/A7NS

From: Megan Brook
Sent: Monday, July 15, 2013 8:14 AM
To: Germanos, Nicholas M Civ USAF HQ ACC/A7NS
Subject: Oppose F-35 in Burlington VT

Dear Mr. Germanos,

Thank you for taking the time to read my message and the many others you have received. Please know I strongly oppose the basing of the F-35 in Burlington VT. I have 2 young children and I don't want them exposed to the environmental pollutants, noise, terror, or redirected funds that will be the result of the F-35 joining our community. I have yet to have anyone explain the purpose of this plane and how it is going to keep our community, state, country or world safer. It seems like the military is using more drone and other methods and this seems very old fashioned. Finally, this is a very populated area and there is no room for mistake. With any new advancement there will be accidents and we can't afford one here. Please reconsider the F-35 program as well as the basing in Burlington Vermont.

Respectfully. Meg

--

Meg Brook

Germanos, Nicholas M Civ USAF HQ ACC/A7NS

From: Martha Dallas
Sent: Monday, July 15, 2013 8:22 AM
To: Germanos, Nicholas M Civ USAF HQ ACC/A7NS

Dear Mr. Germanos,

As a resident of Burlington, VT, I am writing to urge you to choose an alternate location as a base for the F35 fighter jets. The Greater Burlington area is a vibrant community with a growing population, Burlington being the largest city in this state. Many factors concern me about basing these planes in an urban area, most especially their anticipated noise during takeoff and landing. This will reduce home values in the high noise zone, but more importantly there is an elementary school located in the high noise zone. Young children, growing and learning in their early years of development, will be negatively affected by these high decibels. These children, some of whom may be future air force pilots, have the right to a quiet environment for peaceful, calm learning, play, and exploration.

Please reject Vermont as the base location for the F35s and choose a more appropriate location for these aircraft.

Thank you for your consideration.

Sincerely,

Martha Dallas

Germanos, Nicholas M Civ USAF HQ ACC/A7NS

From: cynthia hendel
Sent: Monday, July 15, 2013 8:25 AM
To: Germanos, Nicholas M Civ USAF HQ ACC/A7NS
Subject: I Oppose the F-35 basing in Burlington, VT

Dear Mr. Germanos,

I oppose the basing of the F35 in Burlington, VT.

I stand with the children, families, veterans, nurses, physicians, teachers, professors, business owners, renters, home owners, lawyers, artists, local politicians, former military personnel, social justice workers and defenders of human rights who have voiced crucial concerns on this issue.

There are many reasons I oppose the F-35 basing in Burlington, among them the following:

1. It's noise will harm 1,500 Vermont children: physically, cognitively, emotionally as testified by medical practitioners.]
2. The increased noise level (four times louder than the F16) will threaten the quality of life and health of 8,000 people living in the fly zone as testified by medical practitioners.]
3. It risks the safety of thousands of people living and working within the crash zone of a warplane with no established safety record and a history of functional deficiencies.]
4. It unjustly preys upon the homes of minorities and people of low income who have few resources to resist the basing.]
5. It's manufacture and operation is a national boondoggle even in question by the military.
6. The AF itself says the F-35 will bring environmental harm to entire communities.
7. The AF itself notes that Burlington is NOT the environmentally preferred base.
8. Substantive errors were made in the scoring process for base selection.]
9. Substantive errors were made in the Draft EIS.]
10. There are many unanswered questions about the national political dealings involved in the base selection process.

For the reasons above and more, I adamantly OPPOSE the F35 basing in Burlington, VT.

Sincerely,

Cynthia Hendel

Germanos, Nicholas M Civ USAF HQ ACC/A7NS

From: cynthia hendel
Sent: Monday, July 15, 2013 8:25 AM
To: Germanos, Nicholas M Civ USAF HQ ACC/A7NS
Subject: Extend the Public Comment period on the F35 Basing

Dear Mr. Germanos,

I request that you extend the Public Comment period on the F35 basing in Burlington, VT.

At least 100 pages of important information were not released until nearly 3 weeks after the Revised Draft Environmental Impact Statement was released.

I urge you to extend the Public Comment period in order to offer 45 days starting from the date that the FULL Revised DEIS was released.

Sincerely,

Cynthia Hendel

Germanos, Nicholas M Civ USAF HQ ACC/A7NS

From: Lida Winfield
Sent: Monday, July 15, 2013 8:36 AM
To: Germanos, Nicholas M Civ USAF HQ ACC/A7NS
Subject: extension of the public comment period

Dear Mr. Germanos,

I am writing to request a brief extension of the Public Comment period, based upon the fact that at least 100 pages of important information were not released until nearly 3 weeks after the Revised Draft Environmental Impact Statement was released. Given that this section included substantive questions that people were asking, and the important information given by the Air Force in response to those questions, we believe that it is only reasonable to offer people ample time to consider that information. Please extend the Public Comment period to offer the public 45 days starting from the date that the FULL Revised DEIS was released, rather than May 31st, the date on which the incomplete Revised DEIS was released. As you know, there is great controversy over this basing in our community. It is essential that Vermont citizens be given the most complete opportunity to read, understand, and respond to the information being released by the Air Force. It's crucial that the process by which this decision is made be free of further error.

Thank you
Lida Winfield

Lida Winfield
Performing Artist

Germanos, Nicholas M Civ USAF HQ ACC/A7NS

From: Lida Winfield
Sent: Monday, July 15, 2013 8:40 AM
To: Germanos, Nicholas M Civ USAF HQ ACC/A7NS
Subject: I am apposed to the F35 based in Burlington, VT

Dear Mr. Germonos,

I am apposed to the F35 based in Burlington, VT.

1. It will harm 1,500 Vermont children: physically, emotionally and cognitively
2. It will lower the home values of 4,000 households
3. It will degrade and possibly destroy the quality of life of 8,000 people
4. It will risk the lives of thousands of people because of a greater probability of crashes from a warplane with no established safety record
5. It disproportionately negatively affects minorities and low-income people
6. It will pollute our environment
7. The AF says the F-35 will bring environmental harm to our communities
8. The AF says that Burlington is NOT the environmentally preferred base
9. Substantive errors were made in the scoring process
10. Substantive errors were made in the Draft EIS 11. There are many unanswered questions about the base selection process

Thank you,
Lida Winfield

Germanos, Nicholas M Civ USAF HQ ACC/A7NS

From: John
Sent: Monday, July 15, 2013 8:48 AM
To: Germanos, Nicholas M Civ USAF HQ ACC/A7NS
Subject: F-35s in VT

We live in South Burlington, not in the flight path of the planes and miles from the airport. We have two young kids. We have lived here for 22 years. We are opposed to the basing of the F-35s in VT. This is a very populated area and the F-35 simply makes no sense to have here. We are opposed.

Thanks,
J. Thomas

Germanos, Nicholas M Civ USAF HQ ACC/A7NS

From: Elizabeth A. Allen
Sent: Monday, July 15, 2013 8:50 AM
To: Germanos, Nicholas M Civ USAF HQ ACC/A7NS
Subject: Do not base F-35s in Vermont.

Dear Mr. Germanos,

As a born and bred Vermonter and Winooski resident, I strongly object to the proposed basing of F-35s.

Quality of life will decrease in Chittenden County if the planes arrive. The revised DEIS does not accurately consider the full disruptive effect of F-35 noise, which will hit public schools in Burlington, South Burlington and Winooski. Furthermore, the revised DEIS omits key details, such as the Winooski location of CCV, which would also suffer from F-35 noise. Additionally, the potential crash zone encompasses some of the most densely populated areas in the state, putting us at risk.]

Through rallies, online discussions and comments to you, the majority of Vermonters have made their voices heard. We don't want the F-35s based here. Unfortunately, the F-35s are a pet project of some extremely powerful lawmakers who are attempting to steamroll grassroots concerns for their own personal gain.

Please listen to the people, rather than those in power, and resist the incursion of the F-35s.

--Elizabeth A. Allen

--

Elizabeth A. Allen

Germanos, Nicholas M Civ USAF HQ ACC/A7NS

From: Janet Kane
Sent: Monday, July 15, 2013 9:08 AM
To: Germanos, Nicholas M Civ USAF HQ ACC/A7NS
Subject: Oppose F-35s bed-down in BTV

Dear Mr. Germanos,

I am a resident of Winooski, VT and I am opposed to the F-35 bed down at Burlington International Airport. Many of my reasons are personal because I live right under the flight path so I am directly affected. I've outlined some of my objections below:

1. Noise. No question about it, the F-35s will make my life much worse. I landscape around the city and already hate the F-16s that seem to fly on a whim rather than a set schedule. My basset hound howls and must be put inside. I can't be working when the F-16s fly. It will only be much worse if F-35s come to town.
2. Loss of property values. I have been restoring a, large bungalow to its original grandeur. \$\$\$\$\$\$ has gone into the restoration. I have over 10k in landscaping alone, not to mention the labor, which I do mostly myself. It is an arduous process. The result of my many days/years of toil? A lovely, gracious home that gets passer-bys to comment and take photographs of the front gardens. Not wealthy, I am depending on the sale of my home to help with my retirement (I'm 60 years old). There is no question that the property value will decrease as the house is located in the, "not suitable for residential use" zone. Who is going to buy my home?
3. Decrease in quality of life. I have spent over 20 years as a volunteer beautifying the city by developing gardens on city property and planting street trees. Winooski is interesting, vibrant and dynamic, with a large ethnically diverse population. The F-35s will drive out anyone who can get out, leaving poor immigrants who have nothing more to lose and idiots who proclaim that they love jet noise. The F-35s will ruin Winooski.
4. The F-35s don't belong in a densely populated area. They could easily be based in a more remote location that wouldn't endanger a wide swath of residences with potential crashes.
5. The whole premise of basing the F-35s at BTV smacks of political cronyism, using scare tactics (the air guard base will close without F-35s) to motivate the general, unthinking public, and implying that opponents are unpatriotic. For shame.

Sincerely,

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Janet Kane, P.E.

Germanos, Nicholas M Civ USAF HQ ACC/A7NS

From: Jean Cannon
Sent: Monday, July 15, 2013 9:09 AM
To: Germanos, Nicholas M Civ USAF HQ ACC/A7NS
Subject: F35 in So. Burlington

Dear Mr. Germanos,

I am opposed to basing the F35 in South Burlington, Vermont. I have an art studio very near that airport and am already disturbed by the noise from the F16 planes. In addition, I teach at Community College of Vermont in Winooski. If I am speaking to my class and the planes go over, I have to stop and wait. This happens more than once during a single class. I understand that the F35s will be even louder.

Additionally, I am opposed to the F35s on general purposes. The United States does not need more war planes. We currently have the strongest military in the world. The F16s work just fine. The F35 is riddled with problems and is costing a fortune to build. That money should be used for other things, such as Veterans benefits. I believe the production of the F35 should stop now.

Sincerely,

Jean Cannon

Germanos, Nicholas M Civ USAF HQ ACC/A7NS

From: Anne Linton
Sent: Monday, July 15, 2013 9:16 AM
To: Germanos, Nicholas M Civ USAF HQ ACC/A7NS
Subject: F-35 Public Comment period - Vermont

Dear Mr. Germanos,

I am writing to request a brief extension of the Public Comment period, based upon the fact that at least 100 pages of important information were not released until nearly 3 weeks after the Revised Draft Environmental Impact Statement was released. Given that this section included substantive questions that people were asking, and the important information given by the Air Force in response to those questions, we believe that it is only reasonable to offer people ample time to consider that information.

Please extend the Public Comment period to offer the public 45 days starting from the date that the FULL Revised DEIS was released, rather than May 31st, the date on which the incomplete Revised DEIS was released. As you know, there is great controversy over this basing in our community. It is essential that Vermont citizens be given the most complete opportunity to read, understand, and respond to the information being released by the Air Force. It's crucial that the process by which this decision is made be free of further error.

Thank you for your consideration of this request.

Sincerely,
Anne Elston

Germanos, Nicholas M Civ USAF HQ ACC/A7NS

From: Margaret Limoge
Sent: Monday, July 15, 2013 9:18 AM
To: Germanos, Nicholas M Civ USAF HQ ACC/A7NS
Subject: no on f-35's!

To whom it may concern,

I am a resident of Winooski. I have lived here for ten years and have watched how this city has grown and improved over time. Many of us live here because it is a more affordable option than the surrounding cities and towns. I think it is shameful that our 'leaders' have overlooked many obvious problems regarding housing the f-35's in Burlington for financial and political gain. We are not a suitable place for the f-35's to be housed. There are plenty of places without the number of people and homes that will be affected. I am STRONGLY opposed to the f-35's and hope the voices of the less privileged will be heard for once.

Sincerely,
Margaret Limoge

Germanos, Nicholas M Civ USAF HQ ACC/A7NS

From: betty
Sent: Monday, July 15, 2013 9:24 AM
To: Germanos, Nicholas M Civ USAF HQ ACC/A7NS
Subject: In Favor of the F35's coming to Burlington, VT

Sir, I want to voice my SUPPORT for the basing of the F35's in Burlington, Vermont.

I believe when studying the reasonings behind basing the planes here, that we are in fact the best choice. I live in Winooski, VT in the direct flight path of planes landing and taking off. When I hear the F16's take off, I look to the skies and say thank you!

I honestly believe that the negative comments made against the F35's stem from anti-military groups. I am proud of our military and know that VTANG as an important member of our community and would do the F35's proud!

Thank you,

Elizabeth Hier