Bud Baeslack

From: Albee, William [walbee@wylelabs.com]
Sent: Tuesday, November 30, 2004 10:41 AM
To: Doug Hammon; Bud Baeslack; Wes Butch
Cc: Jason Whitten; Morrow Clint
Subject: RE: 5 DNL change maps

Doug

Your observations are accurate, but you should also add a discussion on runway utilization. We have the jets on runway 9L and 27R split 50/50 in the base case. In the preferred alternative, we have them split 53.6% on 27R; 26.4% on 9L; 13.4 % on 27L and 6.6% on 9R. If we model a single jet departure, you get a footprint with the heart shape in the rear from the departure back blast and the finger in the front under the departure path. Now envision 25 identical operations and then 50. That single foot print gets bigger and bigger with additional operations. Now envision some operations by the same aircraft type in the opposite direction on the same runway. In the base case with a 50/50 split on jets on 9L and 27R, you get the departure finger on both ends. When you distribute the jets ops on the new runway with 53.6 percent heading West and 26.4% heading East, the departure finger to the East is buried under back blast noise of the higher number of West departures. This appears to affect the DNL 65 contour more than higher or lower contours.

Let me know if you need more explanation.

BILL

From: Doug Hammon [mailto:dhammon@osuairport.org]
Sent: Monday, November 29, 2004 9:00 PM
To: Bud Baeslack; Wes Butch
Cc: Jason Whitten; Morrow Clint; Albee, William
Subject: Re: 5 DNL change maps

Dean Baeslack - I have looked closer at some of the contours which were produced from the model run, and may be able to add more to address your question.

When looking at the 65 DNL contours under all scenarios, all have a convex protrusion to the east. Granted, the existing condition is much greater than the rest, this is mainly due to the factors we projected for the future (including the decrease in Stage 2, and the runway utilization). When the north runway extension is shown, this protrusion is just a small nub. It is very difficult to see from the 5 DNL change map, but if you look back through the report, you will see that the overall shape of the 65 DNL does not change, it is merely pulled in much closer to the runway.

The ones that do change the most are the 70 DNL and the 75 DNL. These in fact do change from concave on both ends of the south runway for existing conditions to convex on the north runway for all future build conditions. Once again, I would have to believe that this is due to the combination of a reduction in stage 2, and the better distribution of traffic on the two runways. Please remember that currently, the jets only use one runway. In the future, they will have the two to choose from, so not all the noise is concentrated in one area.

Bill, let me know if this is too simplistic of an explination.

Thanks,

Doug

> ----- Original Message -----
> **From:** Albee, William
> **To:** Wes Butch

Cc: Bud Baeslack ; Douglas Hammon ; Jason Whitten ; Morrow Clint
Sent: Monday, November 29, 2004 5:09 PM
Subject: RE: 5 DNL change maps

To all

Here is my effort to explain the differences in the two comparisons. I will start with the new comparison we made of the 08 no-build to the 08 preferred alternative. The fleet mix and the number of operations are identical for both scenarios. There are several changes that are reflected in the comparison. This shows the combined results of shifting jet operations from the south to the north runway, prop operations from the north to the south runway (where they follow the prop flight track, not the current jet flight track) and the closure of one of the crosswind runways, which greatly increases the traffic on the other crosswind runway. What you see is the net result of all these changes combined. When you look at the comparison of the existing 03 base case to the 08 preferred alternative, you are also adding changes in fleet mix and number of operations over the 5 year period. Since some of these changes tend to offset each other at any given location, this a very complicated comparison and in my opinion is too complicated to serve as a single picture to show the public.

My approach was to remove the growth in operations and the fleet mix changes from the comparison so we could see the difference in noise exposure between the 08 no build and the preferred alternative. The missing piece is a similar graphic to show the change in noise exposure between the existing base case and the 08 no build alternative. What that will show is the net effect of increased operations and a reduction in Stage 2 jet operations. All the prop corridors will show an increase in noise exposure from the base case to the 08 scenarios, but the jet corridor will show a decrease from the base case to the 08 no build, because the reduction in Stage 2 operations will more than offset the increase in jet operations from 03 to 08.

My recommendation is that we produce this third graphic and re plot the two we already have with the same noise exposure increments. I recommend using the noise exposure scale we used on the comparison of the 08 no build to the preferred alternative, but add an increment from 0 to 1 ½ db and another for 0 to – 1 ½ db. This will enable us to show all stakeholders the change that will occur from 03 to 08 no build, from 08 no build to the 08 preferred alternative, and then we can show the total net result of all the changes that occur from the base case to the preferred alternative.

Regarding Doug's question, I do not expect that the climb profile analysis or less reduction of Stage 2 operations will make significant changes in the contours out over Worthington. It appears from these graphics that under any scenario the range of DNL exposure in Worthington is in the low 50s nearest the airport to the mid to high 40s on the East side. Even if we adjust the profiles and fleet mix to some worst case scenario, I doubt that the DNL 55 contour will reach into Worthington. We can easily overlay any of these graphics with a grid and print the average DNL value in each grid box. I provided Wes with an example of a graphic like this for DCA and also a graphic that shows the DNL changes by color code and printed DNL value in each grid box between two different turn point scenarios for DCA.

I'll call Wes tomorrow to discuss this further,

BILL

From: Wes Butch [mailto:wbutch@dlz.com]
Sent: Monday, November 29, 2004 8:15 AM
To: Albee, William
Cc: Bud Baeslack; Douglas Hammon; Jason Whitten; Morrow Clint
Subject: Re: 5 DNL change maps

Bill -

Could you please respond to the Dean's question below about the shape of the 5 DNL contour increase? Please also briefly let us know your thoughts about Doug's question regarding how the new profile analysis could affect this comparison.

Doug and Dean Baeslack -

Wyle is underway with the initial analysis of the different profiles and double-checking the Stage 2 data. More to follow on this later in the week.

Wes

---- Original Message ----
From: Doug Hammon
To: wbutch@dlz.com
Sent: Monday, November 29, 2004 7:36 AM
Subject: Fw: 5 DNL change maps

Wes - please see the Dean's comments below. I will look closer at them when I have a chance to print them out.

Doug

----- Original Message -----
From: Bud Baeslack
To: Doug Hammon
Cc: Stacy Weislogel
Sent: Monday, November 29, 2004 7:05 AM
Subject: RE: 5 DNL change maps

Doug – Thanks for the info, I need to spend some time comparing these two plots, it appears that the preferred versus the existing shows more effective area improved by 3-5 versus worsened by 3-5 outside of the airport property, whereas for the preferred vs. the no-build this trend is reversed. I find it interesting that the DNL plots for the north runway preferred scenario shows concave pertubation on the east side (the origin of the sideways heart shape of the change in DNL), whereas the plot for the existing south runway shows a convex protrusion, like a finger running to the east. This significant difference in shape seems unclear to me, especially given the fact that the plane mix on the existing south runway currently resembles what will be on the north runway in the preferred scenerio, i.e., primarily jets. Obviously, I cannot argue with the model, but this very different shape concerns me, is there an explanation for this difference?

Thanks, Bud

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From: Doug Hammon [mailto:dhammon@osuairport.org]
Sent: Wednesday, November 24, 2004 8:44 PM
To: Wes Butch
Cc: Dean Baeslack; Clint Morrow; Albee, William; Jason Whitten
Subject: Re: 5 DNL change maps

Wes - Obviously I like the results, and also hope the FAA sticks to their guns to only consider areas showing a 5Db or greater change. If they insist on going to a lower DNL (i.e. 55), I'd be very interested in knowing how other vehicles (i.e. cars, trucks, buses, trains, aircraft from CMH) measure in comparison in the historical

areas of Worthington.

My only question is how these comparisons will change (if at all) as a result of altering an arrival/departure profile. I can't believe they would change, because you will be modifying both the baseline and the future senarios. Let's talk on Monday, so that we can get these to FAA as soon as possible.

Dean Baeslack, any thoughts? The maps are attached for your review.

Everyone have a great holiday,

Doug

----- Original Message -----
From: Wes Butch
To: Douglas Hammon
Cc: Jason Whitten ; Albee, William ; Clint Morrow
Sent: Wednesday, November 24, 2004 2:43 PM
Subject: 5 DNL change maps

Doug -

Wyle has completed the first cut maps showing the area where a 5 DNL increase is expected. They did this for existing '03 vs. Pref Alt '08 as well as No Build '08 vs. Pref Alt '08. These show in red the areas that would experience a 5 DNL increase. The areas are quite small and barely extend beyond the 65 DNL contour. After you give the OK, we will send these to FAA for their review, and then we can print out color maps for them to include with their letters once they are OK with it. The bottom line is that if we proceed using the 5 DNL increase area as the APE, we will barely expand it beyond the 65. FAA may decide after seeing this to go with some other definition for the APE, but hopefully not. We also included the 55 contour in case anyone is interested.

You will note an area to the SW of the airport that shows a 5 DNL increase. We have reviewed this, and it is accurate. It is attributable to the closure of the crosswind runway and the new runway utilization. It is mainly over an industrial area near I-270.

We will use this in our discussions with the cultural sub.

Wes