United States Court of Appeals
For the First Circuit

No. 07-1953

TOWN OF WINTHROP, ET AL.,

Petitioners,

v.

FEDERAL AVIATION ADMINISTRATION,

Respondent,

MASSACHUSETTS PORT AUTHORITY,

Intervenor-Respondent.

PETITION FOR REVIEW OF A FINAL ORDER
OF THE FEDERAL AVIATION ADMINISTRATION

Before

Lynch, Chief Judge,
Lipez and Howard, Circuit Judges.

Peter L. Koff with whom Engel & Schultz, LLP, Jerome E. Falbo, and Falbo Solari & Goldberg were on brief for petitioner.

M. Alice Thurston, Attorney, U.S. Department of Justice, with whom Ronald J. Tenpas, Assistant Attorney General, Ronald M. Spritzer, Attorney, U.S. Department of Justice, and John Donnelly, Attorney, Federal Aviation Administration, were on brief for respondent.

Roscoe Trimmier, Jr., with whom Richard J. Lettieri, F. Turner Buford, Ropes & Gray LLP, David S. Mackey, Massachusetts Port Authority, and Ira M. Wallach, Massachusetts Port Authority, were on brief for intervenor-respondent.

July 23, 2008

LYNCH, Chief Judge. The Town of Winthrop, which is located next to Boston's Logan International Airport ("Logan"), and two local residents (one from Winthrop and one from East Boston) petition this court for review of a Federal Aviation Administration ("FAA") order permitting the construction of a new taxiway at the airport. They argue primarily that the FAA acted arbitrarily and capriciously in deciding that it did not need to prepare a supplemental environmental impact statement before issuing this final order.

Petitioners' concerns, as we understand them, may be grouped under three major themes. The FAA has concluded that the new taxiway, along with other previously approved projects, will ease congestion at the airport, reducing the amount of time planes spend idling on the airfield and causing an overall reduction in noise and air pollution. Even if that were so, petitioners fear that the FAA's solution for reducing delay will lead to greater use of Logan, which in the long run will lead to more, not less, adverse environmental impacts.

Second, they fear that the FAA has not used the most current data or methodologies available, which may cast doubt on the agency's benefits analysis.

Third, they say that public health studies show an increasing concern about ultrafine particulate matter and that the FAA should be required to continue to study this pollutant at

Logan, both to evaluate these possible health effects and to keep the public informed. Notably, petitioners do not seek an injunction to stop the construction which has begun at Logan.

We find that the FAA has taken all of these concerns into account, has responded, and did not act arbitrarily or capriciously in issuing its final order. We deny the petition for review.

I.

Logan is the largest airport in New England; it has a history of being one of the country's airports with the most delayed flights. In the year 2000, when 27.4 million passengers and 1 billion pounds of freight passed through the airport, Logan was ranked sixth nationally for airports with the most delays, even though it was ranked eleventh for overall number of takeoffs and landings and eighteenth for passenger volume.

In 1993, the Massachusetts Port Authority ("Massport"), which operates Logan, and the FAA began studying options for improving Logan's operational efficiency. In 1995, Massport released a feasibility study which preliminarily analyzed different options and recommended some for further consideration. These recommended options included building a new runway (Runway 14/32), realigning Taxiway November, building a new Centerfield Taxiway, simplifying taxiway and runway crossings, and adding a surcharge for use of the airport during peak demand periods. Implementation

of all or a subset of these options, it was believed, would significantly reduce airport delays.

In late 1995, Massport and the FAA began preparation of an environmental impact statement ("EIS") regarding these potential improvements, as required by state and federal law. The National Environmental Policy Act ("NEPA") requires that all proposals for "major Federal actions significantly affecting the quality of the human environment" be accompanied by an EIS. 42 U.S.C. § 4332(c). The goal of NEPA is to focus attention on the possible environmental effects of proposed actions, which in turn furthers two important purposes: to ensure that agencies do not make decisions based on incomplete information, and to provide information about environmental effects to the public and other governmental agencies in a timely fashion so that they have an opportunity to respond. Marsh v. Or. Natural Res. Council, 490 U.S. 360, 371 (1989). NEPA does not prevent agencies from then deciding that the benefits of a proposed action outweigh the potential environmental harms: NEPA guarantees process, not specific outcomes. Robertson v. Methow Valley Citizens Council, 490 U.S. 332, 350 (1989).[1]

[1] Massachusetts has a similar act, the Massachusetts Environmental Policy Act, which requires preparation of an environmental impact report. Mass. Gen. Laws ch. 30, §§ 61-62I. The undergoing of the state regulatory process was congruent with the NEPA process and is not discussed separately here.

After extensive analysis and community input, the FAA filed a draft EIS ("DEIS") in February 1999. In response to that draft, approximately 800 people attended two public hearings, and the FAA received approximately 500 comment letters. The FAA then compiled a supplemental draft EIS ("SDEIS") to consider additional issues; that document was published for comment in March 2001. This time, approximately 800 people attended the public hearings, and 850 comment letters were submitted. The FAA published its final EIS ("FEIS") in 2002.

The EIS (the DEIS, SDEIS, and FEIS collectively) considered five project alternatives: three involving some or all options considered by the feasibility study, one involving those options not requiring any construction, and one maintaining the status quo (the "no action alternative"). The EIS analyzed the operational and environmental effects of each alternative, considering both short-term and long-term impacts based on a range of estimated future passenger loads and fleet composition (the mix of the types of aircraft using Logan).

Based on these findings, the FAA released a Record of Decision ("ROD") in 2002, setting forth its rationale for approving the following collection of options (the "preferred alternative"):

a) Construction of a new runway (Runway 14/32)
b) Construction of a new Centerfield Taxiway[2]

[2] While the Centerfield Taxiway was included and analyzed as part of the preferred alternative, final approval of the Taxiway

c) Reconfiguration of the southwest corner taxiway system
d) Extension of Taxiway Delta
e) Realignment of Taxiway November
f) Reduction of instrument approach minimums for several runways

The FAA determined that this set of actions was preferable to the status quo. If no action were taken, the FAA concluded, airport delays would continue to increase; the preferred alternative, on the other hand, was expected to reduce delays by approximately twenty-nine percent. There is a relationship between delays and adverse environmental effects. Delays cause airplanes to idle needlessly on taxiways, increasing harmful emissions. The preferred alternative would reduce emissions and improve ambient air quality, as compared to the no action alternative.

Some local commenters have expressed concern that the construction of the Centerfield Taxiway, which is at the heart of the dispute before this court, would lead to an increase in flight activity, thus increasing air pollutants. The FAA denies this and responds that airport capacity is primarily a factor of runway capacity, not taxiway capacity; that the goal of this improvement project is to reduce delays and improve safety within Logan's current capacity; and that the Centerfield Taxiway would not "independently affect the total number of aircraft operations at Logan."

---

was not actually provided in the 2002 ROD, as discussed infra.

As for noise pollution, again compared to the no action alternative, the FAA found the preferred alternative would (1) drastically reduce the number of citizens exposed to excessive noise levels, defined as 70 dB (decibels) DNL (day-night average sound level) or higher, and (2) reduce the number of citizens exposed in the near-term to 65 dB DNL, which is the threshold at which the FAA considers noise levels to be significant as to residential land use. However, the reduction of the highest noise levels would be achieved by redistributing aircraft throughout the airfield, so the preferred alternative would result in approximately 250 more people being exposed to 65 dB DNL in the long term. Most of those affected would be residents of Chelsea and East Boston.

In its 2002 ROD, the FAA concluded, as it had in the FEIS, that the Centerfield Taxiway would be "the largest contributor to taxiway delay reduction" out of all the components of the preferred alternative package and that the new taxiway would "enhance airfield safety . . . , provide small air quality benefits, and have no significant adverse noise or other environmental impact."

However, the FAA deferred final approval of the construction of the Centerfield Taxiway, despite approving the remaining components of its preferred alternative, in order to see whether operational changes, in addition to the construction, would

provide further benefits. As a mitigation measure, the FAA agreed first to conduct an additional study, seeking comment from persons living around the northern side of the airfield, to consider "potential beneficial operational procedures that would preserve or improve the operational and environmental benefits of the Centerfield Taxiway as shown in the EIS." The additional study would also consider possible changes to the use of Taxiway November in response to concerns from local communities. Before agreeing to undertake this mitigation measure, the FAA considered the impact of deferring construction of the Centerfield Taxiway and concluded that "the potential deferment of the Centerfield Taxiway would have no discernable impact on the environmental [benefits] associated with the other [components] on the Preferred Alternative." It is the results of this additional consideration of potential mitigation benefits which is at the heart of this petition.

The FAA contracted with the firm of Harris Miller Miller & Hanson Inc., experts in the field of noise and vibration control, to undertake this additional limited analysis of operational alternatives. That study ("HMMH Report"), which was published in 2006, considered the efficiency, noise, and air quality effects of different uses of the November and proposed Centerfield Taxiways. It concluded that "no operational action could be identified that would yield environmental benefits" beyond those already

anticipated by the EIS for the construction of the Centerfield Taxiway.

With that report completed, the FAA released a Written Reevaluation and ROD in April 2007, affirming that the data and analysis in the EIS were still "adequate, accurate, current and valid," concluding that the FEIS did not need to be supplemented, and approving the construction of the Centerfield Taxiway.

The D.C. Circuit has already upheld the EIS and 2002 ROD against legal challenge, see Cmtys. Against Runway Expansion, Inc. v. FAA, 355 F.3d 678 (D.C. Cir. 2004), and this case presents no issue as to the legality of those decisions.

Petitioners now seek review of the 2007 Written Reevaluation and ROD. Massport has intervened as a respondent in support of the actions taken. We are told that construction of the preferred alternative is ongoing. Petitioners do not seek to enjoin that construction.

We have jurisdiction over this final FAA order under 49 U.S.C. § 46110(a).

II.

As a preliminary matter, intervenor Massport challenges petitioners' Article III standing before this court. Because Article III standing is a constitutional requirement, we address it first, but as the FAA does not join in this challenge, we keep our discussion brief.

Article III standing requires an injury-in-fact to a cognizable interest, a causal link between that injury and respondent's action, and a likelihood that the injury could be redressed by the requested relief. Sprint Commc'ns Co. v. APCC Servs., Inc., ___ S. Ct. ___, 2008 WL 2484712, at *4 (June 23, 2008); Save Our Heritage, Inc. v. FAA, 269 F.3d 49, 55 (1st Cir. 2001). "To establish injury-in-fact in a 'procedural injury' case," like the present one, "petitioners must show that 'the government act performed without the procedure in question [here, sufficient NEPA review] will cause a distinct risk to a particularized interest of the plaintiff." City of Dania Beach v. FAA, 485 F.3d 1181, 1185 (D.C. Cir. 2007) (quoting Fla. Audubon Soc'y v. Bentsen, 94 F.3d 658, 663 (D.C. Cir. 1996) (en banc)).

Massport challenges this requirement of injury-in-fact on the grounds that the construction of the Centerfield Taxiway (according to the EIS) will have minimal if any environmental effect on the surrounding area. Massport's argument puts the cart before the horse; it assumes the outcome on the merits in making its preliminary standing objection.

Our standing discussion in Save Our Heritage is both instructive and dispositive. In that case, local towns and preservationist organizations challenged an FAA order regarding flights originating from Hanscom Field, outside Boston. The FAA argued there, as Massport does here, that the FAA's order would

have "no significant environmental impact," so there would be no standing. Save Our Heritage, 269 F.3d at 56. As we explained:

> We need not rule out the possibility of cases where the claim of impact is so specious or patently implausible that a threshold standing objection might be appropriate. . . . But beyond that, we think that the likelihood and extent of impact are properly addressed in connection with the merits . . . . A reasonable claim of minimal impact is enough for standing . . . .

Id. (citations omitted).

Petitioners here have reasonably and adequately alleged that they fear harm-in-fact should the Centerfield Taxiway construction go forward as approved by the FAA. That is enough, even if the FAA concluded otherwise in the order that petitioners challenge. Cf. Lujan v. Defenders of Wildlife, 504 U.S. 555, 572 n.7 (1992) ("[U]nder our case law, one living adjacent to the site for proposed construction of a federally licensed dam has standing to challenge the licensing agency's failure to prepare an environmental impact statement, even though we cannot establish with any certainty that the statement will cause the license to be withheld or altered . . . ."). Petitioners have Article III standing.

III.

We turn to the heart of petitioners' argument: that the FAA's decision not to compile a supplemental EIS ("SEIS") was arbitrary and capricious and that the HMMH Report erred in its

choice of noise impact modeling. We first describe the regulatory requirements for an SEIS before addressing petitioners' three challenges to the FAA's decision not to undertake one here.

A. Regulatory Scheme and Standard of Review

The road to final approval for an agency action is often a long one; in this case it has been more than ten years since the commencement of the EIS process and five years since the FEIS. It would undermine NEPA's policies if agencies in the interim were allowed to ignore material new information or circumstances which could change the environmental analysis contained in the original EIS. See Marsh, 490 U.S. at 371. The Council on Environmental Quality's regulations implementing NEPA thus require a supplemental EIS if "[t]he agency makes substantial changes in the proposed action that are relevant to environmental concerns" or "[t]here are significant new circumstances or information relevant to environmental concerns and bearing on the proposed action or its impacts." 40 C.F.R. § 1502.9(c)(1) (emphasis added). That is, an SEIS would be required here if new information "paint[ed] a dramatically different picture of impacts compared to the description of impacts in the EIS." Environmental Impacts: Policies and Procedures, FAA Order 1050.1E chg. 1 ¶ 516a (Mar. 20, 2006).[3]

[3] FAA Order 1050.1E chg. 1 is available at http://www.faa.gov/regulations_policies/orders_notices/media/10501echg.pdf.

The FAA has, by order, imposed further requirements upon itself for airport projects. If more than three years have passed since the FAA approved an FEIS and no major steps toward implementing the proposed action have taken place, the FAA must prepare a written reevaluation to determine whether the FEIS "remains accurate, adequate, and current." NEPA Implementing Instructions for Airport Projects, FAA Order 5050.4B ¶ 1401(c)(1) (Apr. 28, 2006)[4]; see also FAA Order 1050.1E ¶ 514b(1) (requiring, after three years of no major action, a written reevaluation of the "adequacy, accuracy, and validity of the FEIS"). That is, the mere passage of time does not require preparation of an SEIS, only a written reevaluation. The FAA also specifically committed itself in the 2002 ROD to preparing a written reevaluation of whether it was necessary to prepare an SEIS before issuing its final decision on the Centerfield Taxiway, and it has done so.

If "substantial change" has occurred involving the earlier data or other conditions relevant to the FAA's prior decision, the preparation of an SEIS is required. FAA Order 5050.4B ¶ 1401(c)(1); see also FAA Order 1050.1E ¶ 514b(1) (if, after three years, "there have been significant changes in . . . the affected environment [or] anticipated impacts," an SEIS must be prepared); FAA Order 5050.4B ¶ 1402(b)(2) (requiring an SEIS,

[4] FAA Order 5050.4B is available at http://www.faa.gov/airports_airtraffic/airports/resources/publications/orders/environmental_5050_4.

regardless of passage of time, if "[s]ignificant new changes, circumstances or information relevant to the proposed action, its affected environment, or its environmental impacts becomes available"). The written reevaluation determining whether it is necessary to prepare an SEIS need not, however, be made public. FAA Order 5050.4B ¶ 1401(d); FAA Order 1050.1E ¶ 515c.

While NEPA requires agencies to "take a 'hard look' at the environmental effects of their planned action, even after a proposal has received initial approval," Marsh, 490 U.S. at 374, "an agency need not supplement an EIS every time new information comes to light after the EIS is finalized," id. at 373. "To require otherwise would render agency decision-making intractable, always awaiting updated information only to find the new information outdated by the time a decision is made." Id.

The key question for the FAA, then, is determining what constitutes significant new information, and that is a factual question requiring technical expertise. Id. at 376. The agency's resolution of this question is thus one to which a reviewing court owes considerable deference. See id. at 376-77. Considerable deference is also owed to the FAA's determination of whether a three-year-old FEIS remains accurate, adequate, and current, as that determination is but a variation on the same question of significance.

As a result, the FAA's decision not to issue an SEIS cannot be set aside by a reviewing court unless that decision is arbitrary and capricious. Id. at 376; see also 5 U.S.C. § 706(2)(A). An agency's decision is not arbitrary and capricious if that decision was based on consideration of the relevant factors and if it did not commit a clear error of judgment. Marsh, 490 U.S. at 378; Airport Impact Relief, Inc. v. Wykle, 192 F.3d 197, 202 (1st Cir. 1999).

B. Whether the FAA Erred in Its Determination That the FEIS Remains "Accurate, Adequate, Current, and Valid"

Petitioners primarily argue that the FAA did not adequately consider all the requisite factors in determining whether there have been significant material changes since the 2002 ROD. We start with petitioners' allegation that the data underlying the EIS is outdated. The relevant requirement for the FAA as to preparation of an SEIS is whether the FEIS remains accurate, adequate, current, and valid. FAA Order 5050.4B ¶ 1401(c)(1); FAA Order 1050.1E ¶ 514b(1).

As petitioners acknowledge, the 2007 ROD did specifically make the finding that the FEIS remains accurate, adequate, current, and valid. Petitioners' two-sentence counter to this finding is, at most, general and conclusory, providing us no grounds for critiquing the FAA's procedures. See Save Our Heritage, 269 F.3d at 60 ("Gauzy generalizations . . ., in the face of specific findings and a plausible result, are not even a start at a serious

assault."); Airport Impact Relief, 192 F.3d at 205 ("Issues adverted to in a perfunctory manner, unaccompanied by some effort at developed argumentation, are deemed waived for purposes of appeal."). These general and undeveloped arguments are waived.

Nonetheless, we address petitioners' criticism of the continuing validity of the EIS as presented in their argument that the data no longer reflects "existing environmental conditions."[5] We disagree that the 2007 Written Reevaluation and ROD failed to evaluate adequately the continuing validity of the data underlying the EIS. The ROD stated twice that the updated data analyzed in the HMMH Report were consistent with and validated the earlier data and analyses in the EIS.

The HMMH report, in turn, carefully compared its data-based conclusions regarding both air quality and noise impacts with those reached earlier in the EIS. The HMMH Report's analyses incorporated new data gathered between 2002 and 2005. The report noted that the "models, methodologies and data" used in that report were similar to those used in the EIS; these similarities allowed

---

[5] Petitioners try to rephrase the FAA's obligation as one of determining whether the FEIS "accurately reflect[s] existing environmental conditions," which they treat as a distinct requirement. This is not the standard; that language is lifted from the FAA's rationale for allowing FAA officials "the discretion to determine if a written re-evaluation of a NEPA document is needed." FAA Order 5050.4B ¶ 1401(a) (emphasis added). That language is not binding here, where a written reevaluation is required due to the passage of time. Further, petitioners' treatment of the term "existing" suffers from the same faults as their definition of "current," as we discuss.

for meaningful comparison. As one example of a specific comparison, the report demonstrated numerically how "[t]he estimated annual average DNL values for the [HMMH Report]" -- that is, the measurement of noise impact -- were "very comparable to those listed in the EIS." The report concluded that "[t]he analyses . . . reflected in this report are consistent with those performed for the [EIS]" and, "[t]herefore, the results of the analysis on noise and air quality described in this report . . . do not change any of the conclusions that were reached in the EIS."

Given this validation of its earlier data, the FAA could reasonably have concluded that there was no "substantial change" in conditions since the data used in its EIS were gathered. That is, it was reasonable to assume in these circumstances that the mere passage of time did not invalidate or render out-dated the data and analyses in the EIS.

Petitioners seem to assume that "current" in the FAA regulation means literally contemporaneous. That cannot be the correct reading of the requirement, as data relied on in an FEIS will never be current in that sense. Further, such an interpretation would read out the role of the written reevaluation, as the data in a three-year-old FEIS would by definition never be current.

Rather, "current" should be read in conjunction with "accurate" and "adequate" and in light of the general SEIS standard

of significant change: the data remain "current" if there has been no major change that would cause one to expect contemporaneous conditions to vary significantly from conditions at the time the data were gathered. By validating through the HMMH Report that more recent conditions generate similar data as the data used in the EIS, the FAA could reasonably conclude that all the data still reflected current conditions. In another recent situation where the FAA determined that more recent data did not draw into question the modeling it had conducted using older data, the D.C. Circuit explained:

> However desirable it may be for agencies to use the most current and comprehensive data available when making decisions, the FAA has expressed its professional judgment that the later data would not alter its conclusions in the EIS . . . , and it is reasonably concerned that an unyielding avalanche of information might overwhelm an agency's ability to reach a final decision. . . . The method the FAA chose, creating its models with the best information available when it began its analysis and then checking the assumptions of those models as new information became available, was a reasonable means of balancing those competing considerations, particularly given the many months required to conduct full modeling with new data.

Vill. of Bensenville v. FAA, 457 F.3d 52, 71 (D.C. Cir. 2006) (citation omitted); cf. Save Our Heritage, 269 F.3d at 59-60.

To the extent that petitioners seek a more detailed description of the FAA's consideration of the HMMH report's conclusions regarding the continuing validity of the EIS data, none

was required. See Forest Guardians v. U.S. Forest Serv., 495 F.3d 1162, 1172-73 (10th Cir. 2007) ("NEPA imposes no obligation to use precise phrasing."); cf. Airport Impact Relief, 192 F.3d at 209 ("[A] federal agency need not perform the detailed environmental analysis of an [S]EIS before it can determine that no [S]EIS need be prepared. Such a requirement would eliminate the threshold requirements of the regulations in favor of a full . . . SEIS in every case."). Instead, the arbitrary and capricious standard of review "requires substantial deference to the agency . . . when [courts] review[] drafting decisions like how much discussion to include on each topic, and how much data is necessary to fully address each issue." Sierra Club v. Van Antwerp, 526 F.3d 1353, 1361 (11th Cir. 2008).

The FAA adequately considered the continuing validity of the data underlying the FEIS. Its determination that the data were still adequate, accurate, current, and valid was not arbitrary and capricious.

C. Whether Concerns About Ultrafine Particulate Matter Constitute Significant New Information

Petitioners next argue that new studies demonstrating the effects of fine and ultrafine particulate matter ("PM") on public health constitute significant new information that the FAA should have considered in an SEIS. See 40 C.F.R. § 1502.9(c)(1)(ii). They also fault the FAA for not adequately responding to and considering concerns about these health effects.

The Environmental Protection Agency ("EPA") sets National Ambient Air Quality Standards ("NAAQS"), which define acceptable levels of certain regulated air pollutants, including PM. PM is, in turn, categorized as coarse, fine, and ultrafine. At the time of the EIS, there were NAAQS for coarse PM, which is PM with an aerodynamic diameter of 10 microns or smaller ("PM10"). Fine PM is defined as PM with a diameter of 2.5 microns or smaller ("PM2.5"); ultrafine PM is defined as PM with an diameter of 0.1 microns or less.

The FAA included coarse PM (PM10) in the air pollutants it measured and analyzed during the EIS process. It concluded that none of the alternatives considered would come close to violating the NAAQS for PM10, and it also found that the preferred alternative would slightly decrease PM10 emissions over the other alternatives, including the no action alternative. For example, under the no action alternative, PM10 emissions in 2010 were estimated to range from 280 to 336 kilograms per day, depending on airport volume; under the preferred alternative, PM10 emissions would range from 251 to 299 kilograms per day.[6]

[6] After the FEIS but before the 2007 Written Reevaluation and ROD, NAAQS for PM2.5 took effect. Petitioners do not argue that the FAA has not measured PM2.5 adequately or applied the PM2.5 NAAQS; rather, they argue that the FAA has not adequately considered the health effects of fine and ultrafine particulate matter.

Petitioners point to three letters in particular, submitted in response to the draft written reevaluation, that raise questions about the adequacy of the FAA's consideration of the health impacts of the Centerfield Taxiway: a letter from the Massachusetts Department of Public Health, Center for Environmental Health; a letter from the City of Boston's Environment Department; and a letter from the Boston Public Health Commission, Environmental Hazards Program. Contrary to petitioners' assertions, the FAA did respond to these concerns, and its responses were not unreasonable.

These letters primarily urged greater data collection and analysis. They specifically expressed concern that air quality data be gathered at points closer to the airport to better measure local impact. They also argued that city-wide or region-wide compliance with NAAQS was insufficient reassurance of local air quality, as air quality near a major emission source like Logan would likely be worse than the regional average. In its responses, the FAA emphasized that multiple ongoing studies were or would be gathering such localized data. Massport already provides annual Environmental Data Reports on emissions from Logan. As a condition of state approval for the project, Massport agreed to implement an air quality study that would measure emissions in neighborhoods around Logan both before and after the Centerfield Taxiway becomes operational. The Massachusetts Department of Public Health is

currently conducting a study of the health impacts of Logan on surrounding communities, a project that includes further data gathering and analysis. The FAA also noted additional programs requiring Logan to monitor the local impact of emissions of specific pollutants. To the extent the letters suggested that the FAA wait until further data had been collected, it was not arbitrary and capricious for the FAA to conclude that it had enough data to make a reasoned decision. There will always be more data that could be gathered; agencies must have some discretion to decide when to draw the line and move forward with decisionmaking.

All three letters expressed concern that the HMMH Report used emissions inventory data (the amount of pollutants generated) rather than atmospheric dispersion modeling based on that emissions inventory data (which would estimate levels of human exposure to pollutants at specific times and locations). The latter provides a more complete picture of the health impact of emissions on surrounding communities. The FAA responded by pointing out that such dispersion analyses had been conducted as part of the EIS. The measurement of health effects is integral to an EIS, but the purpose of a written reevaluation is not the same. The question for the FAA at this stage was whether the data in the HMMH Report drew into question the health impact analyses in the EIS. The FAA has reasonably concluded that it did not.

Finally, and in petitioners' view most importantly, all three letters urged monitoring of ultrafine PM because of growing evidence of that pollutant's adverse health effects. The FAA acknowledged these concerns and noted that it is "sponsoring research into the potential health effects of PM emitted from aircraft engines." It explained that it did not measure ultrafine PM separately in this decision-making process because the "technology and methods for monitoring ultra-fine PM is considered to be emerging and is still under development by the U.S. EPA and others."[7] The FAA also noted that it is engaged in an ongoing effort with the EPA, NASA, and other agencies to measure emissions from modern-day aircraft engines, including emissions of ultrafine PM.

Not only were these responses adequate, but they also demonstrate that the FAA did consider the information presented, and we cannot say that the agency committed a clear error in judgment in concluding that this information did not warrant an SEIS. Preliminarily, it was not unreasonable for the FAA to assume that, if the preferred alternative would reduce all NAAQS-regulated air pollutants (including PM10), then the preferred alternative -- which includes construction of the Centerfield Taxiway -- would

[7] The PM10 NAAQS covers all PM up to 10 microns in diameter, including ultrafine PM. The concern is that a high concentration of ultrafine PM within otherwise acceptable PM10 levels could cause health problems, in which case there would be a need for separate measurements of ultrafine PM.

also reduce levels of ultrafine PM. It is a matter of common sense that an action quantitatively projected to reduce all air pollutants that were studied would also reduce the amount of air pollutants not studied. Cf. Airport Impact Relief, 192 F.3d at 209 (describing sensibleness of presuming that increased noise due to building roadway at a higher elevation than originally planned would be largely offset by decreased noise due to moving roadway further away from area of concern). Petitioners have provided no reason to doubt that decreased idling and taxiing time would lead to a decrease in all emissions.[8]

Further, the FAA acted within reason in considering how to treat this information. Health impacts due to PM had already been considered in the EIS; while these newer studies might provide more information on potential health effects, the FAA could reasonably conclude that the information presented was not "significant new information" because it did not "paint[] a dramatically different picture of impacts compared to the description of impacts in the EIS." FAA Order 1050.1E ¶ 516a (defining "significant information"). This area of research is also still developing. It is not unreasonable for an agency to decline to study in an SEIS a pollutant for which there are not yet standard methods of measurement or analysis. An SEIS is not, after

[8] Again, we accept the FAA's and Massport's assertion, in the absence of any contrary evidence, that the Centerfield Taxiway will not lead to an increase in the aircraft capacity of Logan.

all, a research document. Cf. Lee v. U.S. Air Force, 354 F.3d 1229, 1244 (10th Cir. 2004) (Air Force not required to conduct own studies where scientific information is scarce, despite concerns raised during the comment period). We emphasize that the FAA has not ignored these concerns; rather, it has decided to evaluate the issue fully in a more appropriate setting alongside agencies with relevant expertise.

We are thus satisfied that the FAA considered the information presented and that its determination that there was no significant new information was not a clear error in judgment. The FAA's decision not to prepare an SEIS was not arbitrary and capricious.

D. Whether the HMMH Report Erred in Its Choice of Computer Model for Evaluating Noise Impact of Centerfield Taxiway

Petitioners assert that the HMMH Report did not use an appropriate modeling program for evaluating the noise impact of different uses of the November and Centerfield Taxiways. However, "[a]gencies are entitled to select their own methodology as long as that methodology is reasonable. The reviewing court must give deference" to that decision. Hughes River Watershed Conservancy v. Johnson, 165 F.3d 283, 289 (4th Cir. 1999); see also Valley Citizens for a Safe Env't v. Aldridge, 886 F.2d 458, 469 (1st Cir. 1989).

The HMMH Report provided a reasonable explanation for selecting the SoundPLAN model. It explained:

> The SoundPLAN model is more appropriate for evaluation of aircraft ground operations than the FAA's Integrated Noise Model (INM), which is intended primarily for the evaluation of aircraft flight operations. While the INM can be used to model taxi operations, it is a very crude tool for this purpose. . . . By using SoundPLAN and aircraft noise emissions data collected at idle/taxi power settings, noise modeling is much more precise. Also, the INM does not incorporate any building or terrain shielding, or variation in ground type . . ., so these characteristics, which are important for ground-based noise sources[,] cannot be modeled with INM.

The FAA also responded thoroughly to specific concerns regarding the HMMH Report's sound analysis.

As a preliminary matter, respondents point out that petitioners did not specifically object to the use of the SoundPLAN model during the comment period on the draft written reevaluation, which relied on the HMMH Report. "[T]he time to complain, and to complain clearly, about methodology was at the comment stage, not two years later after the [relevant report] was complete." Valley Citizens, 886 F.2d at 469. It does the agency no good to receive criticism of its choice of methodology after it has finished its decisionmaking process, especially when there was a chance to comment earlier. See Vt. Yankee Nuclear Power Corp. v. Natural Res. Def. Council, 435 U.S. 519, 553 (1978) ("[I]t is . . . incumbent upon intervenors who wish to participate . . . to structure their participation so that it is meaningful, so that it alerts the agency to the intervenors' position and contentions.").

While concerns about the application of the chosen methodology were raised during the comment period (concerns which we believe the FAA adequately addressed), the petitioners here do not allege any harm or error resulting from the use of SoundPLAN but only assert that the very choice of SoundPLAN was erroneous. We believe that argument was waived because it was not raised before the agency. We continue on a little further to explain why, even if preserved, the argument would fail regardless.

Petitioners point to FAA internal regulations regarding the preparation of an EIS, which require a detailed noise analysis if significant noise impacts are expected. FAA Order 1050.1E ¶ 14.2a. These regulations further state that "[a]ll detailed noise analyses must be performed using the most current version of the FAA's Integrated Noise Model (INM), Heliport Noise Model (HNM), or Noise Integrated Routing System (NIRS). Use of an equivalent methodology and computer model must receive prior written approval from the FAA's Office of Environment and Energy." Id. ¶ 14.2b. No prior written approval was obtained for the use of SoundPLAN in the HMMH Report.

However, as the FAA points out, the HMMH Report is not an EIS. Instead, the HMMH Report considered operational alternatives that might further decrease noise impacts on neighboring communities. There was no regulatory requirement for the FAA to use any specific model for this study. SoundPLAN was selected

because it was considered more sensitive to the sources of noise of most concern in the HMMH Report and would thus be more likely to illuminate an operational alternative that would improve noise conditions for nearby residents. This is a reasonable explanation to which we must defer.

IV.

As a final matter, petitioners seek to supplement the administrative record with additional documents. In considering whether an agency action was arbitrary and capricious, "the focal point for judicial review should be the administrative record already in existence, not some new record made initially in the reviewing court." Camp v. Pitts, 411 U.S. 138, 142 (1973). Supplementing the administrative record on judicial review is therefore the exception, not the rule, and is discretionary with the reviewing court. See Valley Citizens, 886 F.2d at 460. There are two types of situations in which we may exercise that discretion. This court "'may' (although it is not required to) supplement the record where there is [] 'a strong showing of bad faith or improper behavior' by agency decision makers." Olsen v. United States, 414 F.3d 144, 155 (1st Cir. 2005) (quoting Citizens to Preserve Overton Park, Inc. v. Volpe, 401 U.S. 402, 420 (1971), overruled on other grounds by Califano v. Sanders, 430 U.S. 99 (1977)). "Alternatively, supplementation of the record may be permissible where there is a 'failure to explain administrative

action as to frustrate effective judicial review.'" Id. at 155-56 (quoting Camp, 411 U.S. at 142-43).

Neither situation presents itself here, nor do petitioners argue otherwise. Indeed, petitioners argue very few specifics as to why these documents should be included. We deny the motion to supplement the record and briefly outline our rationale as to each specific request.

First, petitioners' request for a separate indexing of documents which are already included in the administrative record (as part of the administrative record for the D.C. Circuit's review of the 2002 ROD) is frivolous. Second, the petitioners seek inclusion of an email from a contractor to an FAA official, but by its nature the email would not illuminate the thinking of anyone within the FAA, and the FAA asserts that it did not rely on the content of that email in its decisionmaking (hence the agency's omission of the email from the record).

Third, the petitioners would like included forty-six documents which the FAA has withheld in response to a Freedom of Information Act ("FOIA") request filed by petitioners. In an entirely separate proceeding regarding this FOIA request, a district judge has reviewed those forty-six documents in camera and agreed with the FAA that the documents pertain to internal deliberative processes and were properly exempted from disclosure under FOIA. Petitioners have appealed that ruling as a separate

matter, not presently before us. Documents pertaining to internal deliberative processes are irrelevant to this petition.

Finally, petitioners have moved to supplement the record with the declaration of Helen Suh, Sc.D., dated December 19, 2007 (more than six months after the release of the final ROD). Petitioners propose that the declaration would aid this court's understanding of the technical issues involved in this case. See Valley Citizens, 886 F.2d at 460. "However desirable this kind of evidentiary supplementation as an aid to understanding highly technical, environmental matters, its use is discretionary with the reviewing court." Id. The Suh declaration elaborates on concerns already addressed in the record. Thus regardless of whether it might illuminate the factual dispute further, it would not bear on the relevant legal question: whether the FAA adequately considered these concerns and reasonably reached the decision it did based on the information it had at the time. See id. at 461. We decline to review the document. We can find no other legitimate basis among petitioners' arguments for supplementing the record with this post-ROD declaration.

V.

We deny the motions to supplement the record, and we deny the petition for review.