UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
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May 17, 2007

Ms. Virginia Lane
Federal Aviation Administration
Orlando Airports District Office
5950 Hazeltine National Drive
Orlando, FL 32822-5024

SUBJ: EPA NEPA Comments on FAA's DEIS for "Fort Lauderdale Hollywood International Airport" (FLL); Broward County, FL; CEQ #20070115; ERP #FAA-E51052-FL

Dear Ms. Lane:

The U.S. Environmental Protection Agency (EPA) has reviewed the referenced FAA DEIS on the proposed expansion of FLL in accordance with our responsibilities under Section 102(2)(C) of the National Environmental Policy Act (NEPA) and Section 309 of the Clean Air Act. EPA has participated in the FAA scoping meeting and site visit on February 23, 2005, and provided follow-up scoping comments in a letter dated March 25, 2005. More recently, our South Florida Office (SFO) participated in a conference call coordinated by FAA contractor to assess project wetlands.

The FAA's NEPA documentation of the expansion of FLL has a considerable history. This included a previous DEIS, a supplement to that DEIS and one or more Environmental Assessments (EAs) on specific airport expansion projects. EPA provided written NEPA comments on these documents. However, the Broward County Board of Commissioners' (Sponsor) proposal to expand FLL continued to evolve to the present proposal addressed by this 2007 "restart" DEIS. Other projects not under FAA's federal lead but nevertheless related to the overall airport expansion have also proceeded, such as a proposed automated people mover from FLL to the adjacent Port Everglades Harbor terminal.

Airport Description

As documented in the DEIS (pg. ES-8), FAA considers FLL a congested airport (long delay times for aircraft departures) that would require additional capacity by 2013. Such delays are not only a passenger inconvenience and an airline expense, they also affect the operation of other interconnected airports in the FAA network. From an EPA perspective, such delays contribute to additional air emissions as aircraft wait in queues before takeoff, and also waste fuel energy. For the No Action Alternative, delay times at FLL are projected to be 10.7 minutes in 2012 and 26.2 minutes in 2020 (pg. ES-31), compared to the Sponsor's preferred range within 6-10 minutes (pg. ES-9). Consistent with the "Vision 100" statute to streamline the review of such FAA-designated congested

airports, FAA has developed an FLL Steamlining Memorandum of Understanding (MOU) with EPA and other appropriate agencies to better coordinate this EIS review.

The FLL footprint includes a 9,000-ft long by 150-ft wide primary "north" runway (9L/27R), a 5,276-ft long by 100-ft wide "south" runway (9R/27L), and an intersecting 6,930-ft long by 150-ft wide crosswind runway (13/31). Onsite expansion of these runways or construction of new ones presents several off-airport physical constraints adjacent to airport property. These include US 1 and the FEC Railroad (eastward); I-95, the CSX Railroad and Dania Cut-off Canal (westward); I-595 (northward); and residential areas (southward and elsewhere).

Sponsor's Proposed Project

Alternative B1c is the Sponsor's Proposed Project, which is being addressed by FAA in this DEIS and may or may not be selected as FAA's preferred alternative in the Final EIS (FEIS). It proposes to extend the south runway (9R/27L) eastward toward the Atlantic Ocean to a total of 8,000 ft in length (+2,724-ft extension) by 150 ft in width (+50-ft extension). This runway extension would require construction of a "runway/taxiway bridge" to span US 1 and the FEC Railroad. To provide adequate clearance (34.74 ft minimum) over this transportation corridor, the runway would need to be elevated 45 ft MSL on the east end (27L) and 8 ft MSL on the west end (9R). Because the runway would be inoperable during construction, a parallel taxiway just north of the south runway would serve as an interim runway. Various other project modifications are also proposed, including terminal redevelopment, decommissioning of the crosswind runway, use of Engineering Materials Arresting Systems (EMAS) at each end of the runway to reduce the standard size of Runway Safety Areas (RSAs), and the partial or total removal of the Wyndham Hotel to further allow for RSA FAA compliance. The earliest expected implementation of B1c would be 2012, such that the analysis design years are 2012 and 2020.

Alternative B1c modifications are structurally the same as Alternative B1b, but B1c incorporates operational mitigative measures (flight tracks, etc.) that are currently in effect and established through long-standing Interlocal Agreements between local groups and the Sponsor to help mitigate noise. However, for a more equitable comparison of alternatives (such as for noise exposure), use of B1b data may be more appropriate than B1c since the other alternatives do not have the advantage of B1c operational mitigation. Despite the difficulty in comparing B1c to other alternatives, EPA conceptually supports the use of operational mitigation acceptable to FAA in combination with land use mitigation (home acquisition) to help mitigate aircraft noise within the 65+ DNL contours. We understand (pg. 5.C.4-1) that FAA will fully consider these measures but was not party to their development nor is legally bound by them.

Alternatives

In addition to the Sponsor's Proposed Project, we appreciate that FAA and the Sponsor have provided a full range of on-airport alternatives. These numerous

action or development alternatives were refined over time and grouped into "like" design categories. These are designated as B Alternatives (South Airfield Alternatives), C Alternatives (North Airfield Alternatives), D Alternatives (combined South and North Airfield Alternatives) and E Alternatives (Crosswind Alternatives). Several alternatives within these groups and all of the E Alternatives were considered but rejected for various reasons discussed in the DEIS. The eight development alternatives carried forward for full analysis either propose extension of the south runway over US 1 and the FEC Railroad (B1, B1b, B1c & B5), replace the south runway with a new runway just north (B4) or just south (B5) of the existing south runway, add a dependent north runway parallel to the existing north runway (C1), or combine two of these proposals (D1&D2). These alternatives would create independent and/or dependent runways of commercial airline length to reduce delay times and provide greater FLL capacity to a varying degree. In addition to runway modifications, all alternatives also involve other airport modifications, notably terminal redevelopment. Some alternatives also require connected actions such as road and business relocations. FAA did not select a federal preferred alternative in the DEIS.

Impacts & Data Needs

EPA's primary concerns with the proposed FLL expansion is the addition of aircraft noise exposure to existing and new populations and the fact that the project is currently out of compliance with the air dispersion modeling results for the new daily 24-hour National Ambient Air Quality Standard (NAAQS) for $PM_{2.5}$ promulgated in October 2006 (revised from 65 ug/m^3 to 35 ug/m^3). For noise, all alternatives would elevate some of these residents significantly within the 65+ DNL contours (by +1.5 DNL or greater) as well as significantly within the 60 DNL contour (by +3.0 DNL or greater). In addition to the current noncompliance for $PM_{2.5}$, long-term air quality at FLL may also be of concern. Although project delay time reductions should minimize air emissions from aircraft at FLL in the short term, it is less certain if predicted increased operations would not increase overall air emissions in the long term. Hazardous Air Pollutants (HAPs) emissions from various on-airport mobile and stationary sources as well as offsite mobile sources related to the airport could also have increasing health impacts for on-airport and off-airport populations. Also, with the exception of Alternative B4 (0.13 ac), predicted wetland impacts are noteworthy (not insignificant) for the remaining action alternatives (15.17–21.87 acre range). These wetland impacts should be further minimized and offsite mitigation coordinated with the U.S. Army Corps of Engineers.

Because noise exposure to nearby residents is one of our primary concerns with this proposal, we note that the design of a few of the presented alternatives (C1, B4 & B1c) may expose these residents to relatively less aircraft noise. Although EPA has not selected these as preferred alternatives, we suggest that FAA and the Sponsor consider them or their modifications from a noise minimization perspective, along with the other presented alternatives, during the development of the FEIS. However, even these three alternatives have disadvantages in terms of noise exposure (benefits are confounded by some negatives) and large numbers of remaining residents would still be exposed to and/or their exposure significantly increased by aircraft noise. Accordingly, EPA

requests that operational and land use mitigation are applied to even these alternatives if selected. Our observations (primarily for noise exposure) for these three alternatives are provided in the enclosed *Detailed Comments*.

The five-volume DEIS is extensive in many aspects. As examples, we appreciate that a HAPs inventory was prepared for FLL (App. G.1.B), that Chapter 7 was dedicated entirely to cumulative impacts, and that the long history of the FLL expansion was well documented (pg. 1-1). However, information in certain areas was not noticed in the DEIS. Some of the informational areas were data or clarity are needed in the FEIS include:

* Terminal Redevelopment – Discussion on the impacts and extent of the proposed terminal redevelopment (which would provide infrastructure for additional gates at FLL) for each alternative, as well as clarity on the associated NEPA documentation for terminal actions (i.e., brief summary of previous FLL NEPA documents or discussion if the present EIS is intended to consolidate and supersede such previous documents).

* Significant Noise Increases – Addition of tabular 2020 significant noise increase data for residents within the 65+ DNL contours (+1.5 DNL criterion) or within the 60 DNL contour (+3.0 DNL criterion) to complement existing 2012 data in Table 6.C.1-31.

* New Noise Exposures – Documentation of the net number of people that would be newly exposed (or no longer exposed) to the 65+ DNL contours for each action alternative compared to the No Action for 2012 and 2020.

* Wetland Mitigation Plan – Inclusion of at least a draft detailed wetland mitigation plan. Proposed mitigation at West Lake Park may also be difficult due to considerable private land holdings such that alternate sites should also be considered in the Plan. The Plan should also be reviewed under the Joint State/Federal Mitigation Bank Review Team (MBRT) process.

* $PM_{2.5}$ Compliance – FEIS discussion on the predicted $PM_{2.5}$ NAAQS violations and the mitigation measures or approach that will be taken to resolve them.

* Construction Emissions – Presentation of construction emissions data for the preferred alternative (as proposed for the FEIS on page ES-20 of DEIS), and preferably for all development alternatives for better comparability.

In addition to these data needs, we also suggest supplemental HAPs information to complement the provided inventory of air toxics sources. While an inventory of air toxics sources and emissions is helpful, it is only a part of the information needed to adequately evaluate the potential impacts of HAP emissions. We would suggest that concentrations across the airport and in the surrounding community be assessed and

toxicity information be incorporated in order to assess the potential risks associated with emissions of HAPs from airport-related activities under the various alternatives.

Impact Minimization & Mitigation

If the project is pursued as the Sponsor's Proposed Project or as another presented alternative, the FEIS should further discuss impact avoidance, minimization and mitigation. Such mitigation would help balance airport impacts against the benefits to the airport from the proposed expansion.

The mitigation discussed in Section 6.J (pg. 6.J-1) was general. For noise, this reportedly was because FAA had not identified a preferred alternative in the DEIS, although some mitigative concepts were provided. The DEIS (pg. ES-27) suggests that FAA mitigation commitments will be provided in the FAA ROD. EPA recommends that mitigative measures for noise and other impacts should already be well-addressed by the Sponsor in concert with FAA in the FEIS, with commitments preferably already made. These commitments could then be finalized in the FAA ROD. The EIS should fully address mitigation of project impacts and not leave mitigation to the voluntary Part 150 Program.

Two specific EPA areas of project impact concern are noise and air quality. Our recommendations for minimizing and mitigating these impacts are as follows:

Noise: EPA requests considerable mitigation for aircraft noise exposure including operational mitigation (flight tracks avoiding residences to the extent safe and approved by FAA) and land use mitigation (primarily home acquisitions from willing sellers). Specifically, EPA recommends that the FEIS discuss the implementation of the following prioritized types of land use noise mitigation:

* Acquisition of all homes from willing sellers that are located within the 70+ DNL contours;
* Acquisition of all remaining homes from willing sellers that are located within the 65+ DNL contours and are significantly elevated (using the +1.5 DNL criterion);
* Acquisition of all remaining homes from willing sellers that are located within the 65+ DNL contours, or sound-proofing those homes at the option of the residents;
* Consideration of sound-proofing all homes at the option of the residents that are located within the 60 DNL contour and are significantly elevated (using the +3.0 DNL criterion).

Air Quality: In addition to requiring compliance with the revised NAAQS for $PM_{2.5}$, we recommend consideration of the following programs or approaches that could be used to minimize or mitigate the air quality impacts from airport emissions (EPA Region 4 technical assistance available through Dale Aspy at 404/562-9041):

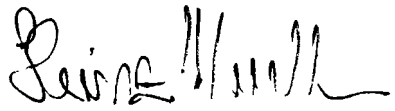
* Electrification of all contact gates and ground support equipment (GSE), especially for terminal redevelopment;
* Use of auxiliary power units (APU) by aircraft at gates;
* Use of alternative fuels (such as compressed natural gas: CNG), electricity and diesel retrofits for airport shuttle buses and other on-airport vehicles;
* Use of reduced idling practices, cleaner fuels (such as biodiesel), and emission retrofits for diesel construction equipment used by FAA contractors;
* Use of more recent concepts such as "cell phone waiting areas" to minimize circling or idling traffic for passenger pick-ups;
* Use of other innovative approaches to avoid or minimize emissions from mobile and stationary sources associated with airports and its traffic;
* Promotion (e.g., airport practices and signage) of increased awareness of greenhouse gases (GHG) relative to their effects on climate change and their reduction through energy conservation, alternative fuels and biofuels use, and reduced vehicular mileage and fuel strategies.

EPA DEIS Rating

EPA rates this DEIS as "EC-2" (Environmental Concerns, additional information requested in the FEIS). We base this rating on our comments provided in this letter and enclosure.

We appreciate FAA's coordination of this project with us. Should you have overall questions on our comments, feel free to coordinate with Chris Hoberg of my staff at 404/562-9619 or hoberg.chris@epa.gov. Also, air quality issues may be directly addressed to Brenda Johnson of our Air, Pesticides and Toxics Management Division (APTMD: 404/562-9037 or johnson.brenda@epa.gov), air toxics issues to Dr. Ken Mitchell (APTMD: 404/562-9065 or mitchell.ken@epa.gov), and wetland issues to Ron Miedema (SFO: 561-616-8867 or miedema.ron@epa.gov).

Sincerely,



Heinz J. Mueller, Chief
NEPA Program Office
Office of Policy and Management

Enclosure – *Detailed Comments*

DETAILED COMMENTS

This enclosure provides additional EPA comments on our two primary impact concerns (noise and air quality) as well as wetlands, water quality, alternatives, environmental justice, induced impacts, cumulative impacts as well as various other comments.

NOISE

Noise Minimization Alternatives

Because noise exposure to nearby residents is our primary concern with this proposal, we note that the design of a few of the presented alternatives (C1, B4 & B1c) may expose these residents to relatively less aircraft noise. Although EPA has not selected these as preferred alternatives, we suggest that FAA and the Sponsor consider them or their modifications from a noise minimization perspective, along with the other presented alternatives, during the development of the FEIS. However, even these three alternatives have disadvantages in terms of noise exposure (benefits are confounded by some negatives) and large numbers of remaining residents would still be exposed to and/or their exposure significantly increased by aircraft noise. Accordingly, EPA requests that operational and land use mitigation are applied to even these alternatives if selected. We offer the following observations (primarily for noise exposure) on C1, B4 and B1c:

* Alternative C1 – C1 incorporates the least number of people within the 65+ DNL contours for both 2012 (71 people) and 2020 (717 people) for all the action alternatives, as well as exposing the least number of people with significant increases for 2012 in the 65+ DNL contours (33 people) and the second lowest number within the 60 DNL contour (1,134 people). This may be because C1 does not develop the south runway near southern residents and instead proposes another northern runway parallel to the primary north runway. Capacity increases and delay reductions are reasonable, although delay times would only be reduced to 5.0 minutes for 2020.

* Alternative B4 – B4 offers reduced overall and significantly increased noise exposure compared to most other alternatives for 2012 (973 people) and 2020 (1,492 people). This may be because B4 proposes a new southern runway 340 ft north of the existing south runway such that it is further removed from southern residents. However, while B4 considerably reduces the number of exposures for 2020 compared to the No Action (1,492 vs. 1,772 people), it performs much worse than the No Action for 2012 (973 vs. 33). It is somewhat unclear why so many more people (940) would be exposed for 2012 in essentially the same south runway corridor as the No Action (the FEIS should discuss this). B4 would also impact the lowest number of wetland acreage (0.13 ac) of all the action alternatives. Capacity increases and delay reductions are reasonable, although delay times would only be reduced to 4.7 minutes for 2020.

* Alternative B1c – B1c has the advantage of incorporating existing operational mitigative measures for 2012 that are not applied to other alternatives. This resulted in the overall noise exposures being the second lowest of all alternatives (285 people) in 2012; however, without such mitigation in 2020, exposures are the highest of all alternatives for 2020 (2,472 people). However, the number of people exposed to significant increases for 2012 within the 65+ DNL contours are the second lowest for all alternatives (263 people),which also may be related to the existing operational mitigative measures, and the lowest within the 60 DNL contour (693 people). Capacity increases and delay reductions are reasonable, although delay times for 2012 (3.9 min) are the highest of all action alternatives and unexpectedly higher than for 2020 (3.1 min). The FEIS should discuss why delay times for 2012 are greater than for 2020 when the number of operations are expected to increase in 2020.

Noise Data Needs

The FEIS should provide the following noise data or discussion:

* Noise Significance Data (Table 6.C.1-31) – EPA much appreciates inclusion of 2012 data for significant increases in noise levels in the 65+ DNL contours (using the +1.5 DNL criterion) and the 60 DNL contour (using the +3.0 DNL criterion). However, no comparable data were found for the 2020 design year. The FEIS should provide such 2020 data or discuss why such data were apparently not provided.

* Exhibit 6.C.1-19 – Table 6.C.1-31 shows that C1 would significantly increase (+3.0 DNL or greater) the noise levels of 1,134 people in the 60 DNL contour for 2012. However, an examination of the residential land use (yellow) in Exhibit 6.C.1-19 does not suggest that such a large number of residents are living in the 60 DNL contour. As such, the figure and data do not support each other. The data and figure should be verified in the FEIS.

* New Noise Exposures – EPA requests documentation of the net number of people that would be newly exposed (or no longer exposed) to the 65+ DNL contours for each action alternative compared to the No Action for 2012 and 2020.

* Noise Exposure Data (Table ES-1) – No 2012 data for noise exposure (or delay times) were provided on Table ES-1 for D1 and D2. Footnote 5 explains that data were not provided for 2012 since D1 "...would not be fully operational by 2012." For purposes of alternatives comparison, however, it is unclear why exposure data (and delay times) could not have been predicted as they were for other alternatives. The FEIS should discuss this and potentially provide data (which could still be qualified with footnote 5). Alternatives cannot be successfully compared with such estimates.

AIR QUALITY

We offer the following air quality comments on NAAQS and air toxics (HAPs). EPA appreciates that a HAPs inventory was provided in the DEIS.

NAAQS

* Section 5.B.1.4 (pg. 5.B-9) – We disagree with the last sentence of this section that indicates that EPA considers the rates of increase of NOx and VOC emissions in determining the likelihood of ozone formation on a project level. EPA considers the rates of these precursor emissions in photochemical modeling to assess the impact of ozone formation and compliance with our NAAQS. However, we do not have standards based on the emission rates of the precursors to determine compliance. We recommend that this sentence be revised to more clearly discuss how and where the process used in the above referenced statement has been used in the past to identify compliance problems or concerns.

* Section 5.B.2.2.1 & Table 5.B-7 (pp. 5.B-12, 13 & 14)

a) *PM2.5 24-hour NAAQS Revision* – The fine particulate (PM2.5) daily (24-hour) NAAQS was revised in October 2006 from 65 ug/m3 to 35 ug/m3. Modeled concentrations in Table 5.B-7 indicate violations of the 24-hour PM2.5 NAAQS for all scenarios that were modeled. The FEIS should discuss these violations and the mitigation measures or approach that will be taken to resolve them.

b) *Sulfur Dioxide (SO2) NAAQS* – This section and table presents modeling results for the 24-hour and annual SO_2 NAAQS. However, modeling results are not discussed or presented for the 3-hour SO_2 NAAQS. The FEIS should discuss this omission.

c) *Receptors* – The section indicates that of the 161 receptors used in the "sensitivity analysis", only four receptors (i.e., receptors 188, T13, 57 & 45) showing the highest results were used in the final modeling. The FEIS should include a summary discussion on what the sensitivity modeling involved and what is meant by the "highest results."

Also, dispersion modeling results from several other receptors (i.e., G10, R2, T4, T9, T114, 117 & 118) were presented in Table 5.B-7, which is assumed to represent final modeling. It is unclear why these receptors differed from the four receptors mentioned above and if higher modeling results were modeled.

d) *Sensitivity Analysis* – This section or elsewhere in the FEIS should include a discussion on the sensitivity analysis and present the modeling results from that analysis for each of the five years modeled. As presented, it is unclear why the receptors chosen are adequate for representing the final modeling or what year was modeled for the final results. The connection between the sensitivity and final modeling is unclear.

* Section 5.B.2.2.1 & 5.B.3 – Given comment "a" above, the last sentence in these sections should be revised. The highest concentration would not be associated with the nitrogen oxides (NOx) concentration for receptor T13 and compliance with the $PM_{2.5}$ daily 24-hour NAAQS was not demonstrated.

* Tables 5.B-7 & 5.B-8 (pp. 5.B-13 & 5.B-15) – The DEIS does not discuss how and where the background data for the air quality monitor were obtained and developed for use as background concentrations for the dispersion modeling results. If possible, the names and identification number for the air quality monitors used to develop data in Tables 5.B-7 and 5.B-8 should be provided.

* Section 5.B.3 – The source of the State Implementation Plan (SIP) regional budgets was not presented in Section 5.B.3.

* Table 6.B-2 (pg. 6.B-5) – The FEIS should state that the "Relevant CAA Thresholds" provided in Table 6.B-2 are from the General Conformity *de minimis* thresholds.

* Table 6.B-10 (pg. 6.B-16) – It is unclear what level of background concentrations are used in the modeling results presented in Table 6.B-10.

It is also unclear how the modeling concentrations for $PM_{2.5}$ are all below 35 ug/m3 and thus in compliance with the $PM_{2.5}$ 24-hour NAAQS in Table B.6-10. Our uncertainty stems from the data presented in Table 5.B-7, which were all above this NAAQS and the 24-hour background concentration was 35 ug/m^3. The section lists the background concentrations and discusses the monitors used and how these data were developed for the various NAAQS.

Furthermore, the three-hour SO_2 NAAQS was not mentioned in Table 6.B-10 and Section 6.B.2.4.

* Tables 6.B-13 & 6.B-14 (pp. 6.B-20 & 6.B-22) – Several footnotes in the tables with modeling results in Chapter 6 indicate that background concentrations were projected for future conditions in Tables 6.B-13, 6.B-14 and other similar tables in Section 6.B. It is unclear how background concentrations are projected. This is not a standard approach that is used in dispersion modeling. A discussion of the rationale for this approach and methodology should be provided in the FEIS.

Also, it is unclear why the four receptors (i.e., 188, T13, 57 & 45) were chosen for modeling in the 2012 assessment and how they related to the receptors presented in the base year modeling receptors in Chapter 5. Those receptors appear to represent worst case conditions.

* EPA Methodology (Sec. 6.B.2.1: Future Conditions, pg. 6.B-2) – It is indicated in the second paragraph that the construction emissions inventory will be prepared based on EPA approved methodology. The paragraph continues by noting this methodology for non-road equipment uses Microsoft Office Excel 2003. Similarly, the first paragraph on page 22 of Appendix G.1 (Sec. 3.2.1: Emissions Inventory Computer Models and Spreadsheets) also notes that the methodology for construction emissions used Microsoft Office Excel 2003. Furthermore, page 48 of Appendix G.1 notes the use of EPA emission factors for non-road engines manufactured in 2006 or later. These were used in combination with EPA's Emission Inventory Preparation-Volume 4. These data were

loaded into an Excel spreadsheet. For clarity, it is suggested that the above references to EPA approved methodology be revised to include this information. We also wish to note that another EPA approved methodology is the EPA NONROAD2004 model, and suggest that in the future, FAA and its applicants consider using the NONROAD model.

* Florida DEP (App. G.1, Sec. 1.3: pg. 4) – The first sentence in the complete paragraph refers to "The EPD maintains a network of air quality monitoring stations located across Broward, Miami-Dade, and Palm Beach Counties." This statement was also made on page 55 of Appendix G.1. However, it is the Florida Department of Environmental Protection (FDEP) that coordinates monitoring with local air quality agencies in Broward, Miami-Dade and Palm Beach Counties.

* AERMOD Model – The air dispersion modeling is based on the AERMOD model which is incorporated in the EDMS model. It is unclear how the inputs for the AERMOD model were developed. The FEIS should contain a discussion on how the inputs for each of the AERMOD processors were developed. A list of the options chosen to run those processors should be presented. Items that should be discussed should include, but are not limited to, the meteorological data, surface characteristics (albedo, bowen ratio, surface roughness), landuse, topography, etc.

* Conformity – The DC Circuit recently vacated certain aspects of EPA's phase 1 rule implementing the 8-hour ozone NAAQS. South Coast Air Quality Management District v. EPA, 472 F.3d 882 (D.C. Cir. 2006). EPA and other parties are seeking rehearing from the court on several aspects of the decision, including conformity. The final position adopted by the DC Circuit could have implications for any action taken with respect to conformity programs in areas that were 1-hour nonattainment or maintenance at the time of revocation of the 1-hour standard.

* Emission Retrofits – To help minimize construction emissions, we recommend the use of reduced idling practices, cleaner fuels, and emission retrofits for construction equipment used by FAA contractors whenever feasible. FAA may wish to discuss this further with EPA Region 4 (Dale Aspy at 404/562-9041).

* Climate Change – In light of the recent Supreme Court ruling that EPA should consider greenhouse gas (GHG) emissions, it is suggested that FAA begin to consider the disclosure of project carbon dioxide (CO_2) emissions as well as their climate change effects in the development of FAA airport NEPA documentation.

Air Toxics (HAPs)

* HAPs Sources (pg. 5.B-9) – The first paragraph in Section 5.B.2 lists sources that were evaluated for the inventory used in the EIS. Other stationary sources should also be considered if they exist at FLL, such as incinerators and any others that emit criteria pollutants or HAPs.

* GSE/APU Emissions (pg. 6.B-6) – The last paragraph indicates that the greatest

overall emission contribution comes from ground support equipment/auxiliary power unit (GSE/APU) operations, which represent 84% of total emissions in 2012. This does not seem to agree with the information in Table 6.B-3, which suggests a much lower contribution from GSE/APU operations. There appears to be similar disagreement between the text and tables for other alternatives in this section as well.

* Surface Coating Operations (Sec. G.1.3.2.5.2: G.1 - pg. 47) – It is noted that surface coating operations were modeled as a volume source. If the operations were controlled appropriately, there would be a point source at some elevation above the operations, many of which would occur in spray booths.

* Alternatives D1 & D2 (pg. G.1.B-25) – The 2012 HAP Emission Inventory tables conclude with Alternative C1. Will Alternatives D1 and D2 be included in the FEIS?

* Decreased Emissions Rationale (App. G.1.B: Table L.B.1) – In this table, each of the alternatives is analyzed for its projected HAP emissions from each of five sources (aircraft, motor vehicles, GSE, stationary sources, APU). It would be helpful for the reader if the FEIS explained why GSE, stationary source, and APU emissions are projected to decline under each of the construction alternatives (despite the fact that the proposed changes to the airport runway system would not seem to affect the use of these types of sources, other than possibly increasing their operation as the use of the airport increases).

Similarly, in Table L.B.1, emissions from motor vehicles increase from 2005 Existing Condition to the 2012 No Action Condition and further to the 2020 No Action Condition. It would be helpful for the reader if the FEIS explained why the emissions associated with different alternatives for 2012 and 2020 are so much lower than their No Action comparative values.

* Airport Data Comparisons (Sec. G.1.B.1.0: 3rd para.) – Has FAA tried to ensure consistency of methodology with other inventories in the area?

* Fraction Sources (Sec. G.1.B.1.1: 1st para., 3rd sentence) – The FEIS should identify the sources of the fractions. Also, it would be helpful to define "speciation profile" for the lay public reader.

* EPA Speciation Profile Information (Sec. G.1.B.1.1: 2nd para., 1st sentence) – Please rewrite this sentence as "Most of the information on HAP speciation profiles that was used in the assessment was obtained as a result of EPA's effort to develop guidelines and regulations ..."

* Aircraft HAPs Data (Sec. G.1.B.1.1 – 2nd para., 2nd sentence) – We suggest concluding this sentence with "...technical difficulty in developing new data." It is contrary to recent evidence to suggest that airports are not significant sources of HAPs.

* Speciation Profiles (Sec. G.1.B.1.1.2) – We suggest the first sentence be rewritten to read "Speciation profiles applied to criteria pollutant emissions from on-road vehicles, ground support equipment (GSE), and other non-road vehicles (mobile sources) are for engines running on gasoline and diesel fuel. This assessment did not consider the use of alternative fuel, such as biodiesel and compressed natural gas (CNG). Greater use of these fuels would decrease…"

* CAA Citations (Sec. G.1.B.1.3) – This section on regulatory background should include a discussion of Clean Air Act (CAA) authorities for mobile sources, such as Sections 202(l), 202(a)(1) and 211(c)(1).

* Health Effects (Sec. G.1.B.1.4 – 3rd para.) – EPA would avoid statements suggesting that health effects cannot be assessed in a meaningful way when evaluations are limited to a single source in a local area. The single source in this case consists of the airplanes, ground service equipment, auxiliary power units, mobile ground sources, paint shops, fueling operations, other stationary sources associated with the airport, etc. The airport is, in effect, a small city which impacts air toxics concentrations which are local in nature. EPA, in fact, does evaluate single sources under the residual risk assessments program.

* NEIs (Sec. G.1.B.2.1.1) – The documentation that the DEIS cites is the 1999 National Emissions Inventory (NEI) as opposed to the 2005 NEI. Work on the 2005 NEI is just beginning.

* Airport HAPs (Sec. G.1.B.2.2) – Please rewrite the first sentence as "The HAP evaluation for the FLL DEIS considers only airport-related sources. These sources emit a subset of the 189 substances…"

* Emission Factors (Tables G.1.B-5 through G.1.B-6) – These are tables of emission factors, not speciation profiles.

* Aircraft Fleet Mix (Sec. G.1.B.3.2 – 1st para.) – If the number of 4-stroke versus 2-stroke engines are impacted by changes in the types of aircraft in the fleet, this could change the speciation profiles defined for the GSE.

* Attachment G.1.B-1 (HAP characteristics)

> + *Butadiene (3rd sentence)* – Butadiene is not found in the fuel itself. We suggest adding, "U.S. EPA has determined that 1,3-butadiene is carcinogenic to humans by inhalation and that the lymphohematopoietic system is considered to be the target organ for cancer in humans."
> + *Formaldehyde* – To be consistent with information presented in other sections, this section should mention that formaldehyde is considered a probable human carcinogen by EPA, based on evidence of nasal squamous cell carcinomas in animals.

+ *Lead* – Please strike the sentences "The connection between these effects and exposure to low levels of lead is uncertain" and "There is inadequate evidence to clearly determine lead's carcinogenicity in humans." Also add the sentence "EPA has determined that lead is a probable human carcinogen" and a sentence that notes that lead continues to be used in aviation fuel.
+ *Xylene* – Note that xylene is also found in evaporative emissions.

WETLANDS

* UMAM Functional Loss (Sec. 6.E.2.3: Analyses of Wetland Impacts) – Throughout this section of the DEIS, the Uniform Mitigation Assessment Method (UMAM) functional loss is referred to in acres. Under the UMAM process, impacts to wetland areas are characterized in loss of functional units. The DEIS states that redevelopment of Runway 9R/27L to the east (pg. 6.E.2-7) would impact 6.09 acres of W-17 and would result in a UMAM functional loss of 2.44 acres. According to the UMAM data sheets (Appendix M) impacts to 6.09 acres of W-17 would result in a UMAM functional loss of 2.15 units. The only way to determine the amount of mitigation necessary to offset 6.09 acres of W-17 would be to have UMAM scores for the mitigation site, which are not included in the DEIS. In addition, the FEIS needs to include UMAM functional losses associated with the secondary impacts to wetlands caused by the project. The FEIS should provide these data.

* Wetland Mitigation Plan (Sec. ES.7.2: Wetland Impacts and Sec. 6.J.: Mitigation for Wetland Impacts – The FEIS should include a detailed mitigation plan (at least in draft form). Reference is made to mitigation being conducted at West Lake Park to offset wetland impacts for this and future projects within Broward County. EPA believes the mitigation plan should be reviewed using the Joint State/Federal MBRT process. To date, the MBRT has not been requested to review the West Lake Park Mitigation Plan. In addition, the West Lake Park Mitigation Site contains numerous land holdings that are in private ownership which may make this site unacceptable for mitigation purposes. The FEIS should therefore address mitigation alternatives in addition to what was proposed in the DEIS.

* Drawings for Runway Approach Light System (Appendix M: Biological Resources – Description of the Installation of the Runway Approach Light System Associated with the Expansion of Runway 9R/27L) – EPA requests that the FEIS include overview and cross sectional drawings of the proposed runway approach light system and associated infrastructure. We also request that the overview drawings illustrate the direct and secondary wetland impacts associated with this phase of the project.

WATER QUALITY

* Stormwater Runoff Management – With the addition of extended or new runways, impervious surfaces will increase at FLL due to the project, and vary among alternatives (page 6.E.1-10 indicates that a decrease in pervious surfaces ranged from 0.51% – 4.95% by alternative). The stormwater plan for FLL should be amended to consider the

expected increases in stormwater runoff and the water quality of the runoff (incidental fuel spills, oil and grease, fertilizer, pesticides, etc. Runoff should be routed to retention/detention ponds rather than wetlands, particularly the mangroves located east of the runways for the B alternatives. Such retention/detention ponds, however, should be designed to avoid becoming attractants to birds and other wildlife, which could affect potential aircraft-wildlife strikes at FLL (e.g., covered or underground pond designs might be used). Coordination with the State of Florida NPDES Permit Program is advised.

* Sole Source Aquifer – Page 6.E.1-9 indicates that the Biscayne Aquifer (a sole source aquifer) is only 4-5 feet below the surface at FLL. However, the DEIS indicates that the airport is in a saltwater intrusion area such that Aquifer water is non-potable there.

While saltwater intrusion at FLL is likely, it should be noted that salinity can be treated to drinking or gray water levels if necessary. Beyond salinity, however, the Aquifer should not be further polluted with other contaminants by the proposed expansion or by the existing airport, such as fuel from incidental spills. Appropriate measures such as the above stormwater plan and containment basins (e.g., associated with any surface fuel storage tanks) should therefore be applied to insure no additional contamination of the Biscayne Aquifer. This is particularly true if there are any wellhead protection areas in the vicinity that are sources of public drinking water supplies (the FEIS should discuss this).

ALTERNATIVES

Terminal Redevelopment

All development alternatives propose terminal redevelopment. Such redevelopment was mentioned but not well developed in the Executive Summary (pg. ES-3) or Chapter 2 (pg. 2-2). Terminal redevelopment in terms of the number of contact gates was also addressed for each runway alternative in Chapter 4. Finally, Appendix D.2 also addresses "Future Terminal gate Demand/Capacity Assessment" by discussing various options to terminal redevelopment (including number of contact gates) by runway expansion alternatives.

The impacts and extent of such terminal redevelopment, which would provide infrastructure for additional gates at FLL, is unclear. As examples, page 4-39 suggests that B1 would only require a few additional gates while page 2-2 suggests that the Master Plan Update (MPU) references 78-84 gates and page 4-39 suggests that FAA has projected a need for 67-77 gates for 2020. It is also unclear how many of these gates would be new compared to the existing condition. Table D.2-1 in Appendix D.2 presents a range from 47-69 gates for 2012 and 54-77 gates for 2020. Regarding impacts, it is unclear if terminal redevelopment impacts were also lumped into the "summary of analysis" for the runway alternatives (Table ES-1) or were not addressed in the DEIS.

Regarding NEPA documentation for terminal development, the DEIS (pg. 4-39) references terminal elements that were discussed in previous FLL NEPA documentation. Since the present DEIS is a restart EIS, we suggest that any tiering from previous documents be avoided, or at least brief summaries be provided in the pending FEIS to update any aspects for clarity. This is particularly true if any Environmental Assessments (EAs) are referenced since they receive less public review than an EIS.

Overall, the FEIS text should further address terminal redevelopment. This information should include how many concourses, gates, and other terminal elements would be needed for each alternative and if they would be new or just redeveloped. Terminal construction and operation impacts should also be disclosed and dissected by alternative if previously lumped into runway alternatives. Regarding NEPA, the FEIS should briefly summarize previous NEPA documents addressing terminal redevelopment or clarify that the present EIS is intended to consolidate and supersede such previous documents.

ENVIRONMENTAL JUSTICE (EJ)

The EJ demographics analysis (pg. 6.H.1-6) indicates that there are more minorities in Broward County (48.8%) than in the FLL study area (36%) and low-income populations are comparable but slightly greater for the study area (11.4% vs. 10.8%). The DEIS also compares all the development alternatives against the No Action for 2012 and 2020. In general, project impacts by alternatives would be much the same for minorities and low-income population percentages. However, to further place these data into perspective, we suggest that overall percentages for counties adjacent to Broward as well as the State of Florida also be provided in the FEIS.

Noise exposure was considered the main potential impact area for EJ communities. However, based on the analysis, it appears that project impacts would be reasonably evenly distributed on area demographics. Nevertheless, it should be noted that all demographics would generally be exposed to overall more aircraft noise, including significant elevations in the 65+ DNL contours and 60 DNL contour, due to the presented alternatives when compared to the No Action.

INDUCED IMPACTS

Transportation impacts were reviewed in the DEIS in terms of potentially being induced by the proposed FLL expansion. Page 6.H.2-1 suggests that study intersections near FLL would need to be improved with or without the project due to "general growth in traffic".

The expectation of continued growth in Broward County seems reasonable. However, it can also be assumed that an expanded FLL could facilitate this growth (in terms of airport traffic) due to airport public convenience (terminal redevelopment, reduced flight departure delay times, additional flights/gates, etc.) which could translate into additional enplanements (flights taken that otherwise might not have been to avoid airport delays). As such, increases in traffic congestion at the considered airport intersections could also be expedited due to the project. While the effects of such induced impacts would be

minimized if intersectional improvements would correspondingly be expedited due to need, certain impacts such as increased traffic noise, may not be mitigated.

CUMULATIVE IMPACTS

We appreciate the dedication of an entire chapter on cumulative impacts in the DEIS. The on-airport and off-airport project list and descriptions are extensive.

The analysis could have been improved if those projects that cumulatively affected the same resources as the proposed FLL expansion, would have been identified (i.e., primarily noise, air quality and water quality impacts on air, waters of U.S. and land resources). This could have been accomplished as a tabular summary (projects with common impacts/resources listed) or the common impacts/resources could have been identified and listed at the end of each project description. The level of impact could have been qualitative or quantitative (data provided if available and easily accessible). Overall, a cumulative impacts section should attempt to demonstrate how the proposed project, together with other local existing and reasonably foreseeable projects, would cumulatively affect common resources in the area.

The DEIS conclusion for this chapter (pg. 7-37) essentially indicates that cumulative impacts are not significant. It should be noted, however, that the cumulative impacts of the incremental increase of impacts associated with expanding a project (such as the proposed FLL expansion) in a built-out area (such as Fort Lauderdale) are typically greater than for such an expansion in a less developed area due to the existing impacts already present in a built-out area. Although the DEIS suggests that additional operations and enplanements at FLL would occur with or without the project, the resultant consequences in either case would be an overall cumulative increase in noise and other impacts in the area.

OTHER COMMENTS

* Mitigation Costs – We appreciate that line item funding was provided for each alternative (e.g., B1: pg. 4-58). However, monies for mitigation are not itemized. While we understand that mitigation and Sponsor commitments may still have been unclear at the DEIS stage, we suggest that a cost estimate or cap (e.g., percentage of project costs) for mitigation be provided in the FEIS.

* Part 150 Study – Page 5.C.3-1 states that "[t]he impacts of that Part 150 Study on this EIS is unclear at this time." However, we are pleased to note that a status discussion of the FAR Part 150 Noise Compatibility Study for FLL is provided in the *Cumulative Impacts* chapter (pg. 7-8).

The FEIS should coordinate the Part 150 Study with the noise mitigation plans for this EIS. However, the EIS should fully address mitigation of project impacts and not leave mitigation to the voluntary Part 150 Program. The Part 150 Program is intended to

mitigate any leftover homes that may still be exposed to noise within the 65+ DNL contours from previous FLL projects.

* Sloped Runway with Runway/Taxiway Bridge – B1, B1b, B1c, B5 and D1 require a "runway/taxiway bridge" that spans US 1 and FEC Railroad. While this is no longer unprecedented in the eastern US, it does involve tunnel driving for US 1 travelers, which may be unusual for local drivers as well as tourists in Florida. This would be particularly true when aircraft are landing on or rolling over the runway bridge and if the designated touchdown point is located directly over US 1. Although EPA defers to FAA for airport safety, we offer that if runway/taxiway alternatives are pursued, designing the aircraft touchdown point directly over US 1 should be avoided to reduce potential driver startle (visual and noise). Providing a screen to visually block aircraft on the bridge from a US 1 driver's view should also be considered if it does not interfere with aircraft safety. Also, to allow for clearance over the US1/FEC Railroad corridor, it is noted that runways for alternatives requiring a runway/taxiway bridge would be sloped (i.e., a differentially elevated runway: 8 ft MSL west end vs. 45 ft MSL east end). Although we again defer to FAA, a sloped runway may be problematic for normal operations and also limit payload capacity (pg. 6.C.1-11) for takeoffs toward the east.

* Fatal Flaws – Alternatives were screened in the DEIS using fatal flaw scenarios which included runway intersection with I-95. It is therefore unclear why intersection with US 1 and the FEC Railroad (which were proposed for bridging for most B Alternatives) was not also considered a fatal flaw for potential alternatives.

* Runway Length – The resultant runway length of B1's runway extension is the longest of all the alternatives (8,600 ft). Although EPA will defer to the Sponsor/FAA in this regard, 8,600 ft may not be needed (based on other alternatives) and presumably also advances the runway further eastward toward mangrove wetlands that may be affected by runway runoff if stormwater is not managed (see *Stormwater Runoff Management* above).

* RPZ Landscape – All or parts of the Wyndham Hotel would be removed for B1 and other B alternatives to eliminate structures within the Runway Protection Zone (RPZ). However, we note from Figure ES-2 that I-95 would still be within the RPZ for B1 (I-95 is also in the RPZ of other B, C and D Alternatives). While I-95 is presumably at-grade near FLL, do FAA regulations permit a congested corridor like an interstate highway to be within the RPZ? Landing aircraft that overshoot the end of the runway and enter the RPZ would not be compatible with I-95 traffic. EPA will defer to FAA regarding airport safety.

* Apparent Typos

+ *Page 5.C.4-1*: The referenced "8,100 ft runway" for the Sponsor's Proposed Project should presumably be "8,000 ft".

+ *Page 6.C.1-51*: Table 6.C.1-31 is titled "Noise impacts between the 60

and 65 DNL Noise Exposure Contours – 2012 Alternatives". It provides data columns for housing units and populations affected by a "1.5 dB Increase" and a "3.0 dB Increase". The columns in the FEIS should clarify that the 1.5 dB increase would only apply to the 65+ DNL contours and the 3.0 dB increase would apply only to the 60 DNL contour. As such, the title might read "Number of housing units and populations affected by significant increases in noise impacts within the 60 DNL Noise Exposure Contour (+3.0 dB or greater) and the 65+ DNL Contours (+1.5 dB and greater) – 2012 Alternatives".

+ *Page 6.C.1-97*: Table 6.C.1-65 lists incompatible land uses for 2020 by alternative. Since B1c is the same as B1b for 2020 (no more Interlocal Agreements by 2020), the "Alternative B1b" listing might be changed to "Alternative B1b/B1c" to indicate this, rather than not including B1c on this table.

+ *Page 7-1* – The *Cumulative Impacts* chapter has numerous spacing errors where parts of words were separated and attached to other words, such as "...withinw hich cumulativei mpacts would occur."

+ *Appendix G.1* – Several pages (39, 40, 42, 43, 53, 54) are missing from the DEIS. Some of these pages deal with mobile and stationary sources and the location of dispersion receptors. Also in Appendix G.1, the first sentence in the second full paragraph on page 4 should read "Miami-Dade" not "Miami-Dad."

* Glossary of Terms – We suggest that "throughput" and "avigation easement" be added to the Glossary; that "RPZ", "RSA" and "EMAS" be added to the List of Acronyms in addition to already being defined in the Glossary; and that "SWPPP" be added to the List of Acronyms and Glossary. Other additions may also be appropriate for the general public.