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 and decommissioning of the crosswind runway. The earliest expected implementation of B1b would be 2012, such that the analysis design years are 2012 and 2020. FAA and the Sponsor considered a full range of reasonable onsite alternatives in the EIS to expand the south runway ('B' alternatives), north runway ('C' alternatives) or a combination ('D' alternatives).

Air Quality Impacts

FLL is identified as one of the busiest U.S. airports, as a congested airport, and as one that is significant to national air transportation. Consistent with the "Vision 100" statute to streamline the review of such FAA-designated congested airports, FAA developed an FLL Steamlining Memorandum of Understanding (MOU) with EPA and other cooperating agencies to better coordinate the EIS review. From a project need perspective, the FLL expansion is to prevent lengthy aircraft departure delay times (predicted to reach an average of approximately 26 minutes in 2012/2020) and to maintain average delays at six minutes per operation (pg. ES-10). Such a reduction in aircraft queuing time would also save energy and reduce aircraft air emissions such as National Ambient Air Quality Standards (NAAQS) criteria pollutants, Hazardous Air Pollutants (HAP) and Greenhouse Gases (GHG). EPA supports this air quality improvement aspect of the FLL expansion, although continued increases in operations at FLL over time can be expected to diminish this environmentally beneficial aspect.

In addition to this reduction in aircraft emissions, EPA continues to recommend overall airport reductions in GHG through the various measures outlined in our DEIS comment letter (alternative fuels, ground support equipment, auxiliary power units, electrification, idling practices, diesel retrofits, cell phone waiting areas, energy conservation, etc.). Although we appreciate that a HAP inventory for airport sources was provided in this FEIS for FLL, we continue to recommend that screening level HAP risk evaluations be prepared in order to allow an informed comparison of the alternatives based on their respective potential impacts. It is recommended that such risk comparisons become part of FAA policy so that the alternative airport scenarios will be better evaluated. Also regarding air quality, our DEIS concern that the proposed project would result in a violation of the $PM_{2.5}$ NAAQS has been resolved. The project is predicted to be in compliance with all NAAQS for 2012 and 2020 design years.

Noise Exposure Impacts

Despite project air quality benefits, aircraft noise exposure to nearby residents remains an EPA concern. It is EPA's primary concern with the proposed FLL expansion and merits mitigation. Of primary concern is new and increased (as well as existing) noise exposure of residents within the 65+ DNL contours (as well as the 60 DNL contour)

located south and west of the south runway proposed for extension by the FAA preferred alternative B1b.

Affected Public

For 2012, noise exposure to residents within the 65 DNL by B1b were reported (pg. 6.C-23) to affect 652 residential housing units (371 single-family, 233 multi-family and 48 mobile home units) and 1,593 people (3 people in 1 unit within 70-75 DNL and 1,590 people in 651 units within 65-70 DNL). In addition, 8,297 people in 3,650 units would be located within the 60-65 DNL in 2012. Residential areas with an undetermined portion (no 2012 data found in the FEIS[1]) of these 8,297 people in the 60-65 DNL was presumably also considered incompatible land use by FAA since they constitute the outside adjacent portion (i.e., outside of the 65 DNL) of contiguous residential neighborhoods and subdivisions that are otherwise located within the 65 DNL. A portion (3,482 people) of these 8,297 people within the 60-65 DNL would also experience a significant noise elevation (+3.0 DNL or greater) in 2012 due to the implementation of B1b (pg. 6.C-53).

For 2020, the continued operation of B1b would affect a greater population. Data for 2020 (pg. 6.C-72) showed noise exposure of 1,051 residential dwelling units (571 single-family, 390 multi-family, and 90 mobile home units) and 2,472 people (127 people in 51 units within 70-75 DNL and 2,345 people in 1,000 units within 65-70 DNL). In addition, 9,749 people in 4,234 units would be located within the 60-65 DNL in 2020. Of these, residential areas with approximately 2,184 people in 1,023 units (527 single-family, 218 multi-family and 278 mobile home) were also considered incompatible land use by FAA since they constitute the outside adjacent portion (i.e., outside of the 65 DNL) of contiguous residential neighborhoods and subdivisions that are otherwise located within the 65 DNL (pg. 8-38). A portion (3,802 people) of these 9,749 people within the 60-65 DNL would also experience a significant noise elevation (+3.0 DNL or greater) in 2020 due to the implementation of B1b (pg. 6.C-103).

EPA's DEIS Noise Mitigation Recommendations

In our May 17, 2007, comment letter on the DEIS, EPA outlined our recommendations for noise mitigation. In addition to any safe and FAA-approved operational mitigation measures (flight tracks to minimize low residential overflights), we continue to recommend land use mitigation (primarily home acquisitions from willing sellers) in the following prioritized approach for FLL (excerpted from DEIS comment letter):

* 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] It is our understanding from FAA that such data were only calculated for 2020 (2,184 people) and not 2012, since FAA noise mitigation was based on the 2020 noise condition and it was assumed the 2012 noise exposures would be covered in the 2020 mitigation.

+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).

FAA's Noise Mitigation Proposal

In the FEIS (Chapter 8.6.1), the Broward County Sponsor proposed "…seven noise mitigation principles for FAA to consider in the development of conceptual mitigation for the EIS" (pg. 8-23). These principles include property acquisition, soundproofing, avigation easements and other measures. FAA has selected four of these measures as "appropriate to address incompatible land uses within the 2020 65 DNL noise contour of the FAA's preferred alternative" (pg. 8-27). These mitigation measures are identified on page 8-28 and may be generalized as addressing: 1) neighborhoods/subdivisions as a whole to help ensure community cohesion, 2) acquisition of mobile homes and relocation of residents, 3) sound insulation of eligible single- and multi-family units with recommended avigation easements, and 4) purchase guarantee/sales assistance (with sound insulation and recommended avigation easements) for eligible single- and multi-family units. The FEIS also predicts the cost of implementing various measures based on the number of potentially eligible incompatible units within the 65 DNL (571 single-family, 390 multi-family and 90 mobile home units) and in those portions of the 60 DNL where contiguous neighborhoods cross the 65 DNL contour (pg. 8-38).

Regarding the procedures for implementing FAA's noise mitigation measures, page 8-27 states that (excerpted from FEIS):

> The FAA will identify those properties that may be eligible for participation in a land use mitigation measure. Broward County's responsibility is to decide how to apply the mitigation to eligible properties. The mitigation areas and the mitigation measures identified in this EIS will be part of the FAA Record of Decision. The Record of Decision will include conditions requiring the Airport Sponsor to implement the noise mitigation measures addressing the impacts resulting from the FAA's Preferred Alternative. The participation of the individual home owner and/or property owner in any of the recommended mitigation measures, however, will be voluntary.

EPA's Comments & Recommendations

We appreciate the progress that the Sponsor and FAA have made in the development of a noise mitigation plan and that FAA's four mitigation measures incorporate some of EPA's recommendations outlined above. Together with our noise mitigation recommendations, we believe that FAA's four noise mitigation measures is a workable

approach for completion of FAA's final mitigation plan. We offer the following comments on FAA's mitigation measures for B1b:

- Overall Commitment – A clearer commitment that FAA's four referenced mitigation measures (or modification thereof into the FAA final noise mitigation plan with FLL Streamlining MOU cooperating agency input) *will be implemented*, as opposed to these measures being termed "appropriate", the "FAA-recommended mitigation measures", or that "[m]itigation and other conditions established in this EIS, or during its review, are subsequently committed to by the FAA in its Record of Decision"). (Ref: pp. 8-27, ES-34, ES-32)

- 65+ DNL Specifics & Commitment – Eligibility and the specifics as to what mitigation is actually proposed for the 1,593 (2012) and 2,472 (2020) affected residents within the 65+ DNL were deferred until the ROD and should be clarified for all residences, by mitigation measure, in the ROD. (Ref: Tables 6.C.1-13 (pg.6.C-23) and 6.C.1-44 (pg. 6.C-72))

- Contiguous Neighborhoods Specifics & Commitment – Eligibility and the specifics as to what mitigation is actually proposed for those residents that live outside of but adjacent to the 65 DNL in contiguous neighborhoods and subdivisions that cross the 65 DNL (2,184 people for 2020) which presumably were also deferred to the ROD and should be clarified, by mitigation measure, for all residences in the ROD. (Ref: Table 8-8 (pg. 8-38))

- 60 DNL Significant Elevation Mitigation & Commitment – Mitigation for the 3,482 (2012) and 3,802 (2020) residents that live within the 60-65 DNL that are predicted to be significantly elevated by +3.0 DNL or greater due to the project was not addressed. We believe that such residents should be considered for suitable noise exposure mitigation such as home soundproofing. The ROD should clarify with specifics and a commitment. (Ref: Tables 6.C.1-31 (pg. 6.C.-53) and 6.C.1-66 (pg. 6.C-103))

Moreover, as suggested above and consistent with the FLL Streamlining MOU associated with this project, cooperating agency signatories such as EPA are asked for concurrence or non-concurrence at various decision points – including mitigation – during the development of the EIS. While FAA coordinated with us throughout the NEPA process, concurrence of a final noise mitigation plan has not yet occurred. This step should occur *before* the issuance of the ROD to help insure a coordinated noise mitigation plan. While NEPA only requires that mitigation be considered, EPA believes that the public disclosure process would be better served if noise mitigation specificity and commitments are included in the FEIS as well as in the ROD.

Given that mitigation specificity was deferred to the ROD, we continue to recommend closer consideration and implementation of our above DEIS noise mitigation approach together with the above four FAA mitigation measures identified in the FEIS during the FAA development of the ROD. We further recommend individual application of the

final noise mitigation plan to all affected residents within the 65+ DNL contours and the 60-65 DNL contour. Such specifics include enumeration – by mitigation measure – of the eligible residents inside and outside the 65 DNL to whom the FAA/Sponsor will offer home and/or property acquisition, soundproofing, avigation easements, and other mitigation measures (i.e., how many residences/residents inside and outside the 65 DNL will be targeted for acquisition, soundproofing, etc.). Procedurally, it is our understanding from FAA that implementation of the noise mitigation plan would start with residences within the highest contours (70 DNL). Also, FAA's mitigation for noise exposures is based on the 2020 noise condition as opposed to the 2012 condition. Since the number residents exposed to aircraft noise is greater for the 2020 condition, EPA agrees with this procedural approach unless there are some eligible residents in the 2012 condition that would not be covered by the 2020 condition and its mitigation.

For the benefit of the public, we also recommend that the ROD be made available to all affected parties and participants of the EIS process so that the finalized version of what the Sponsor and FAA intend to do to mitigate aircraft noise at FLL for the proposed expansion will be well distributed to the public. Moreover, we suggest that the Sponsor and/or FAA conduct follow-up meetings to further coordinate the final noise mitigation plan with the affected residents to accommodate their individual needs.

Also related to noise mitigation, we understand from Appendix P (Response 8.9) that "Broward County is currently conducting a 14 CFR Part 150 Study" and "[t]he Record of Approval for the 14 CFR Part 150 is not anticipated before the FAA issues its Record of Decision (ROD) on this EIS." EPA commends the Sponsor for conducting its Part 150 Study and FAA for its funding; however, we wish to emphasize that the noise mitigation for the present FLL expansion EIS should fully mitigate its noise exposure impacts and not depend on the Part 150 process for such noise mitigation. The Part 150 process is a voluntary process intended to mitigate residual noise impacts that were left unmitigated by previous projects or that accrued incrementally between projects. However, the NEPA and Part 150 processes should complement each other to mitigate both existing and proposed noise exposure impacts at FLL.

Wetland Impacts

In addition to noise exposure, B1b would impact wetlands. Mitigation for unavoidable wetland losses (15.41 ac) should continue to be coordinated with the U.S. Army Corps of Engineers (COE), EPA and other resource agencies. We appreciate that the Sponsor and FAA included the conceptual wetland mitigation plan as part of the FEIS. Based on our review, we recommend the conceptual wetland mitigation plan include in-kind mitigation to offset impacts to freshwater wetlands or justify why out-of-kind mitigation is appropriate. Furthermore, we recommend that the Sponsor coordinate with the EPA and the other regulatory resource agencies to finalize the total amount and type of mitigation credits which may be available at the West Lake Park Mitigation site.

Other Comments

EPA has also reviewed FAA's responses to our comments on the DEIS. A copy of our letter ("AC001") and FAA's responses to our comments (pg. P.1-1) are provided in Appendix P. Our comments on selected responses are provided in the enclosed *Detailed Comments*.

Summary

We appreciate the progress that the Sponsor and FAA have made in the development of a noise mitigation plan and that FAA's four mitigation measures identified in the FEIS incorporate some of EPA's recommendations outlined in EPA's NEPA comments on the DEIS. Together with our noise mitigation recommendations, we believe that the four noise mitigation measures that FAA finds "appropriate to address incompatible land uses within the 2020 65 DNL noise contour of the FAA's preferred alternative" is a workable approach for completion of FAA's final mitigation plan. However, specificity and commitments for the noise mitigation for residents living within and outside the 65 DNL were deferred to the FAA ROD. Cooperating agency concurrence with the mitigation plan, consistent with the FLL Streamlining MOU as a EIS concurrence point, was also deferred until after the FEIS, but should occur *before* the issuance of the ROD. Until a noise mitigation plan is finalized, EPA continues to have concerns about residents in nearby residential areas experiencing aircraft noise exposure due to the project.

EPA continues to recommend closer consideration and implementation of our DEIS noise mitigation approach together with the four identified FAA mitigation measures during the FAA development of the ROD. A clear mitigation plan should be developed in the ROD for all residents living within the 65 DNL contours as well as for those residents that may experience significant elevation within the 60-65 DNL. Specificity and commitments in the final noise mitigation plan of the ROD should include enumeration – by mitigation measure – of the eligible people living in residences inside and outside the 65 DNL to whom the FAA/Sponsor would offer home/property acquisition, soundproofing, avigation easements, and other mitigation measures. The priorities and timing of the mitigation should also be specified. We recommend that the ROD also be made available to all interested parties and the Sponsor and/or FAA should conduct follow-up public meetings to further coordinate the final noise mitigation plan with the affected residents to accommodate their individual needs. These EIS mitigative actions should complement – but be independent from – the Sponsor's ongoing Part 150 Study.

We appreciate FAA's coordination of this proposed project with us. Because of the noise mitigation specifics to be included in the ROD, we request a copy of the ROD for our files. 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 Paul Wagner (APTMD: 404/562-9100 or wagner.paul@epa.gov), and wetland issues to Ron Miedema (South Florida Office: 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

EPA offers these remaining comments on the following selected FAA responses found in Appendix P of the FEIS.[2]

▸ FAA Response 4.3 (Touchdown Point) – EPA defers to FAA and the Sponsor regarding the touchdown point of the proposed runway as well as other aspects of airport safety. However, we do not suggest that the touchdown point (striped on the runway) be located directly over US 1 to minimize the startle effect of motorist (particularly tourist motorists new to the area) traveling through the proposed US 1 "tunnel" when aircraft are landing on the runway/taxiway bridge directly overhead. Even though Response 4.3 suggests that the touchdown point should appropriately be addressed in the project design phase, we believe this is too late since by then the length and configuration of the runway is already set in the ROD and the touchdown point is presumably a defined FAA standard distance from the end of the runway.

Our experience with the recent EIS for the fifth runway expansion of Hartsfield-Jackson Atlanta International Airport (ATL), which has a similar runway bridge over an interstate highway, was that the touchdown point was not directly over the highway. Instead, the touchdown point – and therefore most landings – occurred earlier such that aircraft had already landed and could roll across the runway bridge rather than land directly over the highway. This would seem less startling to motorists, especially if additional screening of the runway bridge from the highway perspective was provided. Locating the stress point of the touchdown on fill versus bridge portions of the runway would also be sound from an engineering standpoint.

▸ FAA Response 4.6 (RPZs) – Again, EPA defers to FAA and the Sponsor regarding airport safety. However, it is unclear how I-95 can be located within the Runway Protection Zone (RPZ) since it is an *elevated* highway. It is our understanding that RPZs are to be clear zones intended to "enhance the safety for aircraft operations" (pg. xii) for emergencies such as aircraft overshooting the end of the runway.

▸ FAA Response 7.3 (HAP) – We note that Chapter 6, Section 6.B (*Air Quality*), page 6.B-102 mid-paragraph, states that "[t]he NAAQS comparative assessment provides the analysis that translates the emission inventories into pollutant concentrations for comparison to the NAAQS." A similar approach is warranted to estimate the potential impacts from HAP. An emission inventory of HAP sources is a foundation. HAP emissions should be evaluated using dispersion modeling and toxicity values in a screening level assessment for locations in the vicinity of the airport. While we do not have national ambient air quality standards to serve as benchmarks for HAP, a screening

[2] EPA can appreciate the organizational problems associated with the voluminous comments received by FAA on the DEIS and the need to summarize or "bundle" similar comments for a streamlined response. However, the process of matching the responses to our numbered comments would have been more user-friendly if EPA (and any other commenters providing the same general comment) had been identified in the bundled comment.

level analysis can identify potential health risks that can be compared with acceptable risk ranges. EPA does not concur with FAA that "scientific uncertainties and lack of established standards and methodologies" justifies eliminating a screening level analysis from the information that should be presented in the FEIS.

▸ FAA Responses 7.4 & 7.15 (GHG) – These two FAA responses appear to be contradictory. That is, Response 7.4 states that "[a]lthough strategies to reduce emissions at the airport could be implemented as part of the Airport's overall environmental awareness plan, such a plan or strategies of a plan that could reduce emissions were not discussed in the EIS because the project already reduces emissions" and "[t]herefore, no plans to minimize or mitigate air quality impacts are necessary or required." In contrast, Response 7.15 states that "[t]he FAA is seeking more guidance from the U.S. Environmental Protection Agency (USEPA) on how to address greenhouse gas (GHG) emissions, particularly carbon dioxide emissions, at airports." EPA suggests that the proposed FLL expansion offers an excellent opportunity for further "greening" of the airport by reducing GHGs. EPA appreciates that – as also stated in Response 7.15 – some GHG reduction actions (coordination, studies, guidance, etc.) are ongoing within FAA.

For FLL, EPA continues to recommend the following actions excerpted from our DEIS comment letter of May 17, 2007. We recommend consideration of these programs and approaches that could be used to minimize or mitigate the air quality impacts from airport emissions (EPA Region 4 technical assistance is available through Dale Aspy at 404/562-9041 or aspy.dale@epa.gov):

* 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.

▸ FAA Response 7.27 (HAP) – EPA does not concur that airport expansion alternatives cannot be evaluated in an EIS based on potential health effects. FAA's rationale for its position seems to be that a single source (or collection of sources such as an airport) would be difficult to evaluate at a local level given the many other sources that could affect a neighborhood. For the purposes of an EIS, the alternatives can be compared with

one another regardless of other sources that may exist. EPA offers advice on how to do such an evaluation in the Air Toxics Risk Assessment Reference Library which is available at http://www.epa.gov/ttn/fera/risk_atra_main.html.

▸ FAA Responses 8.1 & 8.2 (New Noise Exposures) – Response 8.1 indicates that new residents would be exposed to noise even by the No Action Alternative. EPA does not consider this relevant to the need for airport noise mitigation. That is, we believe the Sponsor and FAA are responsible for mitigating substantive aircraft noise exposures of residents within the 65+ DNL contours and for significant increases (as defined by the Federal Integrated Committee on Noise: FICON) within and outside the 65+ DNL contours. Mitigation should be addressed in response to proposed projects (NEPA documents) and periodically for substantive incremental increases between projects (Part 150 Program or other means). Also, while the noise information cited in Response 8.2 (Section 6.C.1) includes excellent documentation of the residences located in project noise exposure areas inside and outside the 65 DNL, it does not necessarily identify the requested enumeration of the *new* residences affected by noise (within the 65 DNL or significantly elevated within the 60 DNL) by the preferred alternative B1b (or those residences that would perhaps no longer be affected).

▸ FAA Response 8.6 (D1 & D2) – We appreciate that FAA has provided a full range of onsite alternatives. However, the fact that Alternatives D1 and D2 would not be fully constructed or operational by the 2012 design year makes their selection unlikely for a "Vision 100" project that emphasizes streamlined relief from long airport departure delay times. We nevertheless agree that these alternatives, which combine construction of both the north and south runways, should have been considered at some level within the NEPA document.

▸ FAA Response 8.8 & 8.10 (2020 Noise Data) – We much appreciate the addition of the requested 2020 noise data (Table 6.C.1-66: pg. 6.C-103) for significant elevations within the 60 and 65 DNL contours that were not presented in the DEIS. This table complements Table 6.C.1-31 for 2012 presented in the DEIS and the FEIS (pg. 6.C.-53). We note that these data show that in addition to some residences being significantly elevated (per the +1.5 DNL or greater FICON criterion) within the 65 DNL contours, some residences within the 60 DNL contour would also be significantly elevated (per the +3.0 DNL or greater FICON criterion). While those residences in the 65 DNL contours would presumably be mitigated, we believe that residents significantly elevated in the 60 DNL contour should also be considered for suitable noise exposure mitigation such as soundproofing.

▸ FAA Response 10.1 & 10.6 (Wetland mitigation) – We appreciate that the Conceptual Wetland Mitigation Plan is addressed in Appendix M.3 and look forward to reviewing and providing comments on the detailed mitigation plan when it becomes available.

▸ FAA Response 10.5 (Biscayne Aquifer) – This response does not specifically refer to the prevention of the contamination of the Biscayne Aquifer – a sole source aquifer – although compliance with NPDES permitting and the Stormwater Pollution Prevention

Plan (SWPPP) would certainly be beneficial to aquifer water quality. Other factors to consider would be the shallow depth of the Biscayne Aquifer in the Ft. Lauderdale area and the use of containment basins for any surface petroleum storage tanks or refueling stations. Also, as indicated in this response, we are aware that EPA authorized the NPDES program to the State of Florida; however, for completeness, the response should have also indicated that EPA retains federal oversight of the program.

▸ FAA Response 13.1 (EJ) – We appreciate that socioeconomics, children's health and EJ were addressed in Section 5.H.1.

* *EJ*: Page 5.H-5 compares the study area to Broward County, which was identified as the "reference population" used in the EJ analysis and was "…determined by FAA to be the appropriate unit of geographic area under analysis." We note that the minority and low-income populations compare well within these areas. However, although requested in our DEIS comments, additional comparison to adjacent counties and the State of Florida were not found. Such comparisons would have shown if Broward County represented a concentration of minorities or low-income populations, or if the demographics of Broward County was similar to neighboring Dade, Palm Beach, Hendry and Collier Counties (alternatively, smaller geographic units could be used such as U.S. Census (2000) Block Groups (BG) adjacent to the BG(s) incorporating the FLL 65 DNL contours). Accordingly, this information would have determined if FLL was an area with relatively comparable, elevated or reduced EJ populations within the region. As such, these demographics would have helped determine if the impacts of the proposed FLL expansion (e.g., noise exposure) would or would not be a potentially disproportionate impact in the region. Therefore, FAA should consider neighboring demographics in the development of its ROD and also provide an overall EJ conclusion, which is currently missing in Section 5.H.1.2.

* *Children's Health*: The FEIS indicates that the main concern for children statewide is asthma and respiratory diseases (ailments that are effected by air quality). Page 5.H-8 also states that "[w]hile this air quality analysis does not address a specific population, it is assumed that if *de minimis* thresholds are not exceeded there would be no significant adverse effect on children populations resulting from the implementation of the Airport Sponsor's Proposed Project or its alternatives." Since the *de minimis* levels of the NAAQS are not predicted to be exceeded, EPA notes that there should be no significant adverse effect on children health related to the six criteria pollutants (screening level HAP risk evaluations were not determined). The primary NAAQS set limits that are designed to protect public health, including the health of "sensitive" populations such as asthmatics, children, and the elderly.

However, despite the air quality considerations, page 5.H-8 does not consider the impacts of aircraft noise exposure on children's health. In future FAA EISs, this impact should be considered for major airport expansions or new construction projects. Based on our independent review, EPA notes that there appear to be no schools or noise sensitive public facilities frequented by children in the immediate project area. This information should have been captured or referenced in this section of the document.

* *Socioeconomics*: Page 5.H-5 briefly describes FAA Order 5050B, Airport Environmental Handbook and the social and economic impacts that were considered as part of this project. In addition, the FAA policy and the Federal Uniform Relocation Assistance and Real Property Acquisition Policies Act regarding fair compensation for residential and business displacement and related relocation assistance was also described. However, this section does not quantify residential or business relocations, or provide the demographic characteristics of those that will be displaced. Other issues, such as disruptions of established communities are also not discussed. If this information is located in other sections of the FEIS, it should be referenced in this section. If not, this information should be summarized in the ROD.

▸ FAA Responses 14.1 & 14.2 (Cumulative Impacts) – EPA appreciates that Chapter 7 was dedicated to cumulative impacts and was modified for the FEIS.

We note that certain FLL operational changes have already been approved by FAA in an Environmental Assessment/Finding of No Significant Impact (EA/FONSI) prepared concurrently with the present EIS (*Proposed Use of Runways 9R/27L and 13/31 When the Preferred Runway Cannot Efficiently Accommodate existing Operations at the Fort Lauderdale-Hollywood International Airport*). Although we acknowledged receipt of the document, EPA has deferred NEPA comments on the draft and final EA until this review of the FEIS for the FLL expansion.

To the extent feasible, EPA recommends that other airport actions occurring in a similar timeframe as an EIS project at the same airport should be lumped into one EIS so their impacts can be cumulatively considered. For dynamic airports like FLL, EIS actions may be frequent enough to allow this. However, when an EA action is necessary between EISs (e.g., it has independent utility or its implementation would be beneficial before the next airport EIS action) or has separate funding, the project and its EA should still be given adequate public review. Moreover, the direct/indirect impacts of such actions should also be summarized in subsequent NEPA documents in a cumulative impacts section (i.e., past, present and reasonably foreseeable project impacts on the same resources within the project area). EPA also believes that incremental increases in impacts (e.g., incremental noise increases and "creeping" expansion of noise contours over time) should periodically be assessed even if an airport project EA or EIS is not being proposed. Such incremental increases would also have a cumulative effect.

Among the numerous on-airport and off-airport projects documented in Chapter 7, we are pleased to note that page 7-15 documents the referenced EA/FONSI. The purpose of the operational modification was to already reduce congestion at FLL before the present FLL expansion project. The purpose of the EA/FONSI was to document potential impacts of this action. Since a FONSI was issued, FAA did not consider impacts significant. However, in the cumulative impacts analysis, a brief description of the positive or negative environmental impacts would have been appropriate for this project, as well as for the others similarly discussed.

More importantly, the focus of the cumulative impacts section should be to determine and document how the nearby past, present and foreseeable future projects (on-airport and off-airport) would affect (negatively or positively) relevant resources together with the proposed FLL expansion. The primary impacts of the proposed FLL expansion appear to be noise, air quality and wetlands such that the resources of primary concern would be the FLL noise environment, airshed, wetlands and perhaps others like Essential Fish Habitat (EFH). We therefore appreciate that Table 7.1 documents impacts of off-airport projects to wetlands and EFH and provides comments on mitigation. For air quality (pg. 7-21), the emphasis in the FEIS appeared to be on on-airport projects. Additional quantitative or qualitative discussion of off-airport sources or projects (e.g., emissions from Port Everglades cruise and container/tanker vessels, overall motor vehicular traffic, nearby power plants, etc.) relative to overall Broward County air quality would have been appropriate. For noise (pg. 7-22), on-airport projects were also emphasized, although off-airport projects were addressed by the conclusion that "…there were no noise impacts associated with the other projects disclosed in this chapter" (pg. 7-23). While it is certainly plausible that airport aircraft would generate most of the local noise and could essentially mask other sources (particularly during single-events like takeoffs), other important off-airport noise sources do exist locally. These include vehicular traffic, trains, cruise and container/tanker vessels, dredging and construction activities, and others. As such, most of the other off-airport projects discussed in Chapter 7 would have a noise component, although presumably less locally and regionally significant than the airport.

▸ FAA Response 22.2 (HAP) – There are a number of comments that EPA offered concerning the DEIS, that were identified in Appendix P of the FEIS with the number 22.2. Response number 22.2, on page P.22-1 of the FEIS, indicates that the text in the FEIS has been revised according to our comments. However, for some of these comments, the text was not changed in the FEIS. The ROD should address these.

▸ FAA Response 22.3 (Induced Impacts) – This response is to EPA's DEIS discussion that a lag time may exist between the induced impacts of the FLL expansion and supporting infrastructure (e.g., traffic intersection may not be upgraded immediately to accommodate additional airport-related traffic such that air quality could be reduced). However, EPA's comment was dismissed as an "opinion". While we realize that FAA may have little control over local traffic upgrades, this response could have been better addressed by referring to Broward County's economic impact study in Section 5.H.2 on *Secondary (Induced) Impacts*, or acknowledging that the FLL expansion could induce further local growth which in turn would have its own additional developmental impacts.

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(727) 824-5317; FAX (727) 824-5300
http://sero.nmfs.noaa.gov/

July 25, 2008 F/SER4:JK/pw

Virginia Lane
Environmental Specialist
U.S. Department of Transportation
Federal Aviation Administration
5950 Hazeltine National Drive
Orlando, Florida 32822-5024

Dear Ms. Lane:

NOAA's National Marine Fisheries Service (NMFS) reviewed the final Environmental Impact Statement (EIS), dated June 17, 2008, for the development and extension of runway 9R/27L and other associated projects at Fort Lauderdale-Hollywood International Airport (FLL). The final EIS prepared by the Federal Aviation Administration (FAA) describes the environmental impacts associated with airport projects proposed by the Broward County Board of County Commissioners (Broward County), owner and operator of FLL. According to the final EIS, the existing airfield at FLL lacks sufficient capacity to accommodate existing and forecasted demand. In order to address this need, Broward County proposes to: Redevelop Runway 9R/27L to a length of 8,000 feet and a width of 150 feet. An Engineered Materials Arresting System (EMAS) would be used at each runway end in place of a standard runway safety area. The use of EMAS allows the overall length of the runway to be reduced to 8,000 feet and would eliminate the need for declared distance while improving the runway operational capability. The eastern end of Runway 9R/27L would be elevated over the Florida East Coast Railway and U.S. Highway 1. The western extent of the runway would be the Dania Cut-Off Canal. Runway 13/31 would be permanently closed to accommodate elevation of Runway 9R/27L. In addition this alternative includes implementation of the operational noise abatement actions described in the County's Airfield Development Program Objective Statement (October 26, 2004). This set of changes is referred to as "Alternative B1c" in the final EIS.

The final EIS presents an analysis of several on-site and off-site site alternatives, in addition to the no-action alternative. The FAA does not present a preferred alternative in the final EIS, however Broward County's preferred alternative is Alternative B1c. This alternative would impact approximately 15.41 acres of wetlands including 3.05 acres of estuarine emergent vegetation (mangroves), which are essential fish habitat (EFH). Other alternatives (i.e., Alternative D1) could adversely affect as much as 21.87 acres of wetlands. The airport

expansion activities are located in waters of the Unites States adjacent to the Dania cut-off canal and Atlantic Intracoastal Waterway (AIWW) in Broward County, Florida. As the nation's federal trustee for the conservation and management of marine, estuarine, and anadromous fishery resources, the following comments and recommendations are provided pursuant to authorities of the Fish and Wildlife Coordination Act and the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act).

Consultation History

By letter dated May 17, 2007, NMFS provided the FAA with comments and recommendations in response to the draft EIS. Please see this letter for a complete consultation history and a description of the habitats designated as EFH. In our comments on the draft EIS, NMFS specifically requested that the final EIS include a full assessment of cumulative effects; the FAA or lead federal agency's views regarding the effects of the action on EFH; a compensatory mitigation plan; and Unified Mitigation Assessment Method (UMAM) scores of the mitigation site. In addition, we provided two EFH conservation recommendations:

(1) A plan shall be developed for providing full, in-kind compensation for unavoidable adverse impacts to wetlands. The plan shall address compensation for loss of productivity and habitat functions that occur during the period between elimination/degradation of existing wetlands and establishment of functionally compatible mangrove habitat that would be protected in perpetuity; and

(2) A monitoring plan shall be developed to assess the ecological success of the offsite, compensatory mitigation. Annual monitoring of the mitigation site shall take place for five years following completion of the mitigation project. In the event it is determined that the implemented mitigation measures do not completely offset the destruction of mangrove wetlands, the plan shall include contingency measures, such as additional planting or exotic vegetation removal, in order to provide functionally suitable replacement habitat. The mitigation/monitoring plan shall be forwarded to the NMFS for review and approval prior to initiation of construction.

Responses to Information Requests and EFH Conservation Recommendations

A full assessment of cumulative effects. In our comments on the draft EIS, we noted that several past, present, and reasonably foreseeable future activities were not included in the discussion of cumulative effects. The final EIS (chapter 7) provides a more thorough evaluation of cumulative effects. NMFS concludes that this information need has been sufficiently addressed.

The FAA's, or lead federal agency's, views regarding the effects of the action on EFH. The final EIS (section 6.F.1.7) states that the FAA has determined there will be no significant impacts to EFH resulting from the implementation of any of the runway development alternatives. This determination considered the project design; the minimal short-term and permanent impacts associated with the installation of light tower foundations, utility cables, and access roads required for the proposed runway approach light configurations; and the mitigation proposed for unavoidable wetland impacts. While we believe that additional information about the mitigation proposal is needed (see section below) before NMFS could agree with the FAA's determination, NMFS finds that the FAA has met the requirement for making a determination.

A compensatory mitigation plan. The final EIS includes conceptual mitigation measures that the FAA would consider as part of the proposed project or alternatives (Section 6J). Specifically, the final EIS states that the FAA has developed conceptual wetland mitigation during this EIS process based on input from and in coordination with the U.S. Army Corps of Engineers, the South Florida Water Management District, and the U.S. Environmental Protection Agency. The final EIS also states that it will be Broward County's responsibility to apply for permits required by these regulatory agencies for the preferred alternative.

While NMFS is familiar with the restoration proposed at West Lake Park associated with Department of the Army permit number 2002-0072 (IP-LAO), we are also aware of other projects by the Broward County Board of County Commissioners (such as the Port Everglades Expansion) that propose to use this mitigation as well. The EFH assessment should fully describe how mangrove impacts would be mitigated. While we agree with the general approach of the conceptual plan, more detail is needed, including Unified Mitigation Assessment Method (UMAM) scores at the mitigation sites, to determine that all functional losses would be mitigated. NMFS concludes that this information need has not been sufficiently addressed.

Unified Mitigation Assessment Method (UMAM) scores. In response to our review of the draft EIS, NMFS noted that the UMAM scores for the wetland areas proposed for impact under Broward County's preferred alternative were provided. However, the only way to determine the amount of mitigation necessary to offset 3.05 acres of mangrove wetlands would be to have UMAM scores for the mitigation site, which were not included in the draft EIS nor are they provided in the final EIS. The compensatory mitigation plan should include all necessary UMAM scores to determine that all functional losses can be mitigated. We conclude that this information need has not been sufficiently addressed.

EFH Conservation Recommendations provided in response to review of the draft EIS. The EFH assessment section in the final EIS does not make any reference to the EFH conservation recommendations provided in response to our review of the draft EIS. As mentioned above, the FAA maintains that it is Broward County's responsibility to develop the permits for the mitigation. However, the EFH section did not summarize the analysis that led the FAA to this conclusion. Section 305(b)(4)(B) of the Magnuson-Stevens Act and its implementing regulation at 50 CFR Section 600.920(k) require that, in the case of a response that is inconsistent with NMFS conservation recommendations, the agency must explain its reasons for not following the recommendations, including the scientific rationale for any disagreements with NMFS over the anticipated effects of the proposed action and the measures needed to offset such effects. NMFS believes the FAA, as the federal action agency, is responsible for documenting that the mitigation would fully offset the lost wetland functions through the National Environmental Policy Act process.

In closing, NMFS can not conclude that the habitat conservation goals of the Magnuson-Stevens Act have been met for this project nor can we conclude that the FAA has met the procedural requirements of the Magnuson-Stevens Act. We maintain our recommendations to develop a compensatory mitigation plan and the associated monitoring. We would be willing to work with the FAA in the development of these plans. We also can advise on the most effective path to completing the EFH consultation.

Thank you for the opportunity to provide comments. Related correspondence should be directed to the attention of Ms. Jocelyn Karazsia at our West Palm Beach office, which is co-located with the US Environmental Protection Agency at USEPA, 400 North Congress Avenue, Suite 120, West Palm Beach, Florida, 33401. She may be reached by telephone at (561) 616-8880, extension 207, or by e-mail at Jocelyn.Karazsia@noaa.gov.

Sincerely,

/ for

Miles M. Croom
Assistant Regional Administrator
Habitat Conservation Division

cc: (via electronic mail)

EPA, Miedema.Ron@epa.gov
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Florida Department of Environmental Protection

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3900 Commonwealth Boulevard
Tallahassee, Florida 32399-3000

Charlie Crist
Governor

Jeff Kottkamp
Lt. Governor

Michael W. Sole
Secretary

July 28, 2008

RECEIVED AUG 0 1 2008

Ms. Virginia L. Lane, AICP
Orlando Airports District Office
Federal Aviation Administration
5950 Hazeltine National Drive, Suite 400
Orlando, FL 32822-5024

RE: Federal Aviation Administration – Final Environmental Impact Statement for the Development and Expansion of Runway 9R/27L and Other Associated Airport Projects at Fort Lauderdale-Hollywood International Airport – Broward County, Florida.
SAI # FL200806204295C (Reference SAI # FL200703223172C)

Dear Ms. Lane:

The Florida State Clearinghouse, pursuant to Presidential Executive Order 12372, Gubernatorial Executive Order 95-359, the Coastal Zone Management Act, 16, U.S.C. §§ 1451-1464, as amended, and the National Environmental Policy Act, 42 U.S.C. §§ 4231, 4331-4335, 4341-4347, as amended, has coordinated a review of the referenced final environmental impact statement (FEIS).

The South Florida Water Management District (SFWMD) notes that while a general overview of potential secondary impacts is provided, the FEIS does not provide a comprehensive summary of all potential secondary impacts to wetlands resulting from the proposed runway extension. Upon development of construction documentation, secondary impacts to adjacent wetlands resulting from the proposed project must be fully addressed as part of the SFWMD's Environmental Resource Permit (ERP) application review process, pursuant to Section 4.2.7 of the SFWMD ERP Basis of Review. Based on the submitted project construction information, the runway expansion opening date is 2012-2013. However, construction of the referenced off-site wetland mitigation area is not proposed to be completed until March, 2013. The proposed off-site wetland mitigation must be completed prior to or concurrently with any authorized wetland impacts.

The Florida Department of Environmental Protection (DEP) Southeast District's ERP Section has deferred comments to the SFWMD, which will require modification of ERP No. 06-00339-S for impacts to jurisdictional wetlands. The Southeast District's Air Section also offers the following comments:

- ***Appendix G Air Quality – HAP EMISSION INVENTORY***
  Tables G.1.B-8 through G.1.B-26, which report "*Annual HAP Emissions by Source,*" do not include the particulate matter (PM) contribution from aircraft. PM from *Motor Vehicles* and *Ground Support Equipment* is included under "*Diesel Particulate Matter*" but under "*Aircraft*" there is no data for PM. With the primary non-volatile component of jet engine exhaust being PM and a good approximation that transport aircraft's PM is less than 2.5 micrometers, listing this information would be beneficial. PM contributions from "*Aircraft*" are included within Tables 6.B-3 through 6.B-11 and could be referenced to provide this information.

- ***Appendix P – Response to Comments 7.0 AIR QUALITY***
  Comment 7.33 asks whether the DEP will require Air Quality Permits for the stationary sources at the airport. No new stationary air sources are planned for this EIS. Future stationary sources or major modifications to equipment or operations of existing sources would require appropriate permits.

The Florida Department of Transportation's (FDOT) District Four office in Fort Lauderdale has reviewed the document and notes the following:

- Executive Summary page 6 of 51: Due to proximity of several FHWA limited access facilities, please verify that the preferred alternative will not require coordination/approval from FHWA.
- ES 1.5: There is a statement in the surface transportation section that says there are no impacts to surrounding roads with respect to level of service; however, the preferred alternative will close Airport Perimeter Road. This will divert traffic to other facilities that may have capacity deficiencies. Please provide further clarification on this matter.
- As the design proceeds on the runway expansion, close coordination will be required with the FDOT regarding impacts to US 1 and Griffin Road. Please note that permits from FDOT will be required for the related runway work in the right-of-way for these two roadways. Please contact Becky Mainardi at (954) 777-4404 to coordinate this work with FDOT. A FDOT general use permit will be necessary if an alternative impacts roads. Please contact Sofie Sariol, at (954) 940-7605 prior to developing detailed design plans in order to learn about requirements that may pertain to the project improvements located within and in proximity to state owned right-of-way.
- Please coordinate with the Florida East Coast Railroad (FEC) for comments. If the runway expansion requires construction near or over the FEC railroad tracks, approval and permits will be required from FEC. Please contact Charles Stone at (904) 538-6057 for further assistance.

- Please note that if the runway expansion requires any shifts of the existing FEC tracks in the immediate area, then this may impact the preliminary layout for the future FEC station at the Airport-Seaport Intermodal Center. These impacts should be closely coordinated with Scott Seeburger of FDOT at (954) 777-4632, and David Anderton of Port Everglades at (954) 468-0144.

Please contact Andrew Riddle at (954) 777-4605 for further information.

Based on the information contained in the FEIS and the enclosed state agency comments, state has determined that, at this stage, the proposed activity is consistent with the Florida Coastal Management Program (FCMP). The applicant must, however, address the concerns identified by our reviewing agencies prior to project implementation. The state's continued concurrence with the project will be based, in part, on the adequate resolution of issues identified during this and subsequent reviews. The state's final review of the project's consistency with the FCMP will be conducted during the environmental permitting stage.

Thank you for the opportunity to review the proposed project. Should you have any questions regarding this letter, please contact Mr. Christopher Stahl at (850) 245-2169.

Yours sincerely,

Sally B. Mann

Sally B. Mann, Director
Office of Intergovernmental Programs

SBM/cjs
Enclosures

cc: Tim Gray, DEP, Southeast District
Jim Golden, SFWMD
Lisa Stone, FDOT

Florida
Department of Environmental Protection

"More Protection, Less Process"

Categories

Project Information	
Project:	FL200806204295C
Comments Due:	07/21/2008
Letter Due:	07/28/2008
Description:	FEDERAL AVIATION ADMINISTRATION - FINAL ENVIRONMENTAL IMPACT STATEMENT FOR THE DEVELOPMENT AND EXPANSION OF RUNWAY 9R/27L AND OTHER ASSOCIATED AIRPORT PROJECTS AT FORT LAUDERDALE-HOLLYWOOD INTERNATIONAL AIRPORT - BROWARD COUNTY, FLORIDA.
Keywords:	FAA - FEIS, RUNWAY 9R/27L AT FT. LAUDERDALE-HOLLYWOOD AIRPORT - BROWARD CO.
CFDA #:	20.106

Agency Comments:

SOUTH FL RPC - SOUTH FLORIDA REGIONAL PLANNING COUNCIL

No Comments

BROWARD - BROWARD COUNTY

No Comments

FISH and WILDLIFE COMMISSION - FLORIDA FISH AND WILDLIFE CONSERVATION COMMISSION

No Comments Received

STATE - FLORIDA DEPARTMENT OF STATE

No Comments Received

TRANSPORTATION - FLORIDA DEPARTMENT OF TRANSPORTATION

Executive Summary page 6 of 51: Due to proximity of several FHWA limited access facilities, please verify that the preferred alternative will not require coordination/approval from FHWA. ES 1.5: There is a statement in the surface transportation section that says there are no impacts to surrounding roads with respect to level of service; however, the preferred will close Airport Perimeter Road. This will divert traffic to other facilities that may have capacity deficiencies. Please provide further clarification on this matter. Please coordinate with the Florida East Coast Railroad (FEC) for comments. Please note that if the runway expansion requires construction near or over the FEC railroad tracks, approval and permits will be required from FEC. Please contact Charles Stone at (904) 538-6057. As the design proceeds on the runway expansion, close coordination will be required with the FDOT regarding impacts to US 1 and Griffin Road. Please note that permits from FDOT will be required for the related runway work in the right-of-way for these two roadways. Please contact Becky Mainardi at (954) 777-4404 to coordinate this work with FDOT. FDOT general use permit will be necessary if alternative impacts roads. Please contact Sofie Sariol, at 954-940-7605 prior to developing detailed design plans in order to learn about requirements that may pertain to the project improvements located within and in proximity to State owned right-of-way. Please note that if the runway expansion requires any shifts of the existing FEC tracks in the immediate area, then this may impact the preliminary layout for the future FEC station at the Airport-Seaport Intermodal Center. These impacts should be closely coordinated with Scott Seeburger from FDOT at 954-777-4632, and David Anderton from Port Everglades at 954-468-0144. Please contact Andrew Riddle at 954-777-4605 for further ICAR coordination.

ENVIRONMENTAL PROTECTION - FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION

The DEP Southeast District's ERP Section has deferred comments to the SFWMD, which will require a modification to Environmental Resource Permit (ERP) No. 06-00339-S for impacts to jurisdictional wetlands. Modification to the National Pollutant Discharge Elimination System (NPDES) permit will also be coordinated through the SFWMD. Also, listed below are a few comments from the District's Air Section. Appendix G Air Quality - HAP EMISSION INVENTORY Tables G.1.B-8 through G.1.B-26, which report "Annual HAP Emissions by Source," do not include the particulate matter (PM) contribution from aircraft. PM from Motor Vehicles and Ground Support Equipment is included under "Diesel Particulate Matter" but under "Aircraft" there is no data for PM. With the primary non-volatile component of jet engine exhaust being PM and a good approximation that transport aircraft's PM is less than 2.5 micrometers, listing this information would be beneficial. PM contributions from "Aircraft" are included within Tables 6.B-3 through 6.B-11 and could be referenced to provide this information. Appendix P - Response to Comments 7.0 AIR QUALITY Comment 7.33 asks whether the DEP will require Air Quality Permits for the stationary sources at the airport. No new stationary air sources are planned for this EIS. Future stationary sources or major modifications to equipment or operations of existing sources would require appropriate permits.

SOUTH FLORIDA WMD - SOUTH FLORIDA WATER MANAGEMENT DISTRICT

While a general overview of potential secondary impacts is provided, the FEIS does not provide a comprehensive summary of all potential secondary impacts to wetlands resulting from the proposed runway extension. Upon development of construction documentation, secondary impacts to adjacent wetlands resulting from the proposed project must be fully addressed as part of the SFWMD's Environmental Resource Permit (ERP) application review process, pursuant to Section 4.2.7 of the SFWMD's ERP Basis of Review. Based on the submitted project construction information, the runway expansion opening date is 2012-2013. However, construction of the referenced off-site wetland mitigation area is not proposed to be completed until March, 2013. The proposed off-site wetland mitigation must be completed prior to or concurrently with any authorized wetland impacts.

For more information or to submit comments, please contact the Clearinghouse Office at:

3900 COMMONWEALTH BOULEVARD, M.S. 47
TALLAHASSEE, FLORIDA 32399-3000
TELEPHONE: (850) 245-2161
FAX: (850) 245-2190

Visit the Clearinghouse Home Page to query other projects.

U.S. Department
of Transportation
Federal Aviation Administration

Orlando Airports District Office
5950 Hazeltine National Dr., Suite 400
Orlando, FL 32822-5024

Phone: 407-812-6331

September 29, 2008

Jocelyn Karazsia, M.S.
Fisheries Biologist
NOAA National Marine Fisheries
West Palm Beach Office
400 North Congress Avenue, Suite 120
West Palm Beach, Florida, 33401

Dear Ms. Karazsia:

The FAA provided an assessment of Essential Fish Habitat (EFH) in the Draft EIS. The NMFS provided comments on the Draft EIS and Conservation Recommendations in accordance with Section 305(b) (4)(A) of the Magnuson-Stevens Act in a letter to the FAA dated May 17, 2007.[1] In this May 2007 letter, the NMFS also requested additional information in order to fully evaluate the proposed project. The FAA provided the additional information requested by NMFS and responded to NMFS EFH Conservation Recommendations in a letter dated February 5, 2008.[2] The FAA did not receive an acknowledgement of the information provided to NMFS in February 2008.

The FAA received the NMSS letter dated July 25, 2008[3], which contained comments on the Final EIS. In this letter NMFS provided the following comments. FAA's responses to those comments are provided below.

NMFS Comment 1: The FAA does not present a preferred alternative in the final EIS.

FAA Response: The FAA's Preferred Alternative (Alternative B1b) is identified in the Final EIS in Chapter Eight, Section 8.4, *Identification of FAA's Preferred Alternative*.

NMFS Comment 2: Consultation History - In our comments on the draft EIS, NMFS specifically requested that the final EIS include a full assessment of cumulative effects; the FAA or lead federal agency's views regarding the effects of the action on EFH; a compensatory mitigation plan; and Unified Mitigation Assessment Method (UMAM) scores of the mitigation site. In addition, we provided two EFH conservation recommendations.

FAA Response: An Essential Fish Habitat (EFH) Assessment was included in the Draft and Final EIS in Chapter Six, Section F.1.4, *Essential Fish Habitat (EFH) Assessment*. As requested by the National Marine Fisheries Service (NMFS), the FAA prepared additional information in a report *Direct, Secondary, and Cumulative Effects on Essential Fish Habitat*. This report included as attachment 2.1-1, a *Conceptual Wetland Mitigation Plan*. FAA's response to NMFS Conservation Recommendations is provided in Section 4.0 *Summary and Responses to NMFS Comments and Conservation Recommendations* of this report. This information was provided to NMFS in February 2008. NMFS has not acknowledged receipt of this information. These reports and agency coordination letters are provided in the Final EIS in Appendix M, *Biological Resources*.

FAA's responses to NMFS/EFH comments on the Draft EIS were provided in the Final EIS, Appendix P, Section 11 *Biological Resources* as Comment 11.2, however the response was incorrect. The corrected response to Comment 11.2 is provided below:

> The additional information requested was provided to the National Marine Fisheries Service (NMFS) via a letter and attachment from the FAA in February 2008. This information included a report titled *Direct, Secondary, and Cumulative Effects on Essential Fish Habitat*. Section 4.0 of that report summarized the comments provided by NMFS and FAA's responses including:
>
> — FAA's views regarding the effects of the action on Essential Fish Habitat (EFH)
> — FAA's responses to the EFH Conservation Recommendations
>
> The *Conceptual Wetland Mitigation Plan* included the estimated UMAM credits required for the proposed project and the estimated mangrove mitigation credits available at West Lake Park
>
> These reports are provided in the Final EIS, Appendix M, *Biological Resources*.

NMFS Comment 3: A full assessment of cumulative effects. The Final EIS Chapter 7 provides a more thorough evaluation of cumulative effects. NFMS concludes that this information need has been sufficiently addressed.

FAA Response: Comment noted.

NMFS Comment 4: The final EIS (Section 6.F.1.7) states that the FAA has determined there will be no significant impacts to EFH resulting from the implementation of any of the runway development alternatives. While we believe that additional information about the mitigation proposal is needed before NMFS could agree with the FAA's determination, NMFS finds than the FAA has met the requirement for making a determination.

FAA Response: Comment noted.

NMFS Comment 5: A compensatory mitigation plan. The final EIS includes conceptual mitigation measures that the FAA would consider as part of the proposed project or alternatives (Section 6J). The EFH assessment should fully describe how mangrove impacts would be mitigated. While we agree with the general approach of the conceptual plan, more detail is needed, including Unified Mitigation Assessment Method (UMAM) scores at the mitigation sites, to determine what all functional losses would be mitigated. NMFS concludes that this information need has not been sufficiently addressed.

---

[1] Letter from Paul Weller for Miles M. Croom, Assistant Regional Administrator, Habitat Conservation Division, National Marine Fisheries Service, to Virginia Lane, FAA Orlando Airports District Office, RE: F/SER4:JK/pw, Dated: May 17 ,2007.

[2] Letter to Jocelyn Karazsia, National Marine Fisheries Service from Virginia Lane, FAA Orlando Airports District Office, Dated: February 5, 2008. Enclosure *Direct, Secondary, and Cumulative Effects on Essential Fish Habitat*, February 5, 2008.

[3] Letter from Paul Weller for Miles M. Croom, Assistant Regional Administrator, Habitat Conservation Division, National Marine Fisheries Service, to Virginia Lane, FAA Orlando Airports District Office, RE: F/SER4:JK/pw, Dated: July 25, 2008.

FAA Response: A compensatory wetland mitigation plan for the FAA's Preferred Alternative is provided in the *Conceptual Wetland Mitigation Plan* provided in the Final EIS, Appendix M *Biological Resources*. The wetland mitigation measures discussed in Section 6J of the Draft EIS and Final EIS documents provided a general mitigation strategy for wetland impacts. More detailed conceptual wetland mitigation for the FAA's Preferred Alternative was discussed in the Final EIS in Chapter Eight, FAA's Preferred Alternative, Section 8.6.3 and in the Final EIS, Appendix M Biological Resources, *Conceptual Wetland Mitigation Plan*.

The UMAM Functional Gain credit scores for the West Lake Park mitigation project are referenced in the United States Army Corps of Engineers (USACE) Permit Number SAJ-2002-00072 and South Florida Water Management District (SFWMD) Permit Number 06 04016 P. The estimated UMAM credits required for the proposed project and the estimated mangrove mitigation credits available at West Lake Park are provided in the Final EIS in Appendix M.3, *Conceptual Wetland Mitigation Plan. See* Table 3.3-1 *Potential Wetland Impacts for the Proposed Action (Alternative B1c)* and Table 4-1 *Estimated mangrove Mitigation Credits Available at West Lake Park*.

NMFS Comment 6: Unified Mitigation Assessment Method (UMAM) scores. The only way to determine the amount of mitigation necessary to offset 3.05 acres of mangrove wetlands would be to have UMAM scores for the mitigation site, which were not included in the draft EIS nor are they provided in the final EIS. The compensatory mitigation plan should include all necessary UMAM scores to determine that all functional losses can be mitigated. We conclude that this information need has not been sufficiently addressed.

FAA Response: See the FAA Response to Comment 5 above.

NMFS Comment 7: EFH Conservation Recommendations provided in response to review of the draft EIS. The EFH assessment section in the final EIS does not make any reference to the EFH conservation recommendations provided in the response to our review of the draft EIS. The FAA maintains that it is Broward County's responsibility to develop the permits for the mitigation, but the EFH section did not summarize the analysis that led the FAA to this conclusion.

FAA Response: As noted in FAA Response 2 above, FAA's response to NMFS Conservation Recommendations is provided in the report *Direct, Secondary, and Cumulative Effects on Essential Fish Habitat,* Section 4.0 *Summary and Responses to NMFS Comments and EFH Conservation Recommendations*. This report was provided to NMFS in February 2008.

The FAA has fully considered the NMFS EFH Conservation Recommendations in accordance with the requirements of Section 305(b)(4)(B) of the Magnuson-Stevens Act. Consistent with the NMFS EFH Conservation Recommendations, a *Conceptual Wetland Mitigation Plan* to compensate for unavoidable impacts to wetlands and EFH is provided in the Final EIS, Appendix M *Biological Resources*. The *Conceptual Wetland Mitigation Plan* references a monitoring plan for the ecological success of the off-site compensatory mitigation as described in Section Five of the *Conceptual Wetland Mitigation Plan*. Further refinement of the *Conceptual Mitigation Plan* and the monitoring plan are to be addressed by Broward County and the USACE during the Section 404 permitting process.

The FAA cannot submit or obtain permits because the FAA is not the applicant. The applicant for permits in this case is Broward County, the Airport Sponsor. Therefore, Broward County will apply for any required permits. The *Conceptual Wetland Mitigation Plan* contains a discussion of the wetland permitting process. Broward County as a condition of the FAA's Record of Decision (ROD) will be required to obtain any necessary permits. Broward County has provided a letter indicating their commitment to implement the wetland mitigation that would be required for project impacts.[4]

NMFS Comment 8: The NMFS can not conclude that the habitat conservation goals of the Magnuson-Stevens Act have been met for this project nor can we conclude that the FAA has met the procedural requirements of the Magnuson-Stevens Act.

FAA Response: Coordination with NMFS was conducted throughout the EIS process to identify and document potential impacts and mitigation opportunities. The FAA responded to and addressed NMFS/EFH comments on the Draft EIS and provided responses to the NMFS Conservation Recommendations, in February 2008.

We are again providing copies of the referenced reports: *Direct, Secondary, and Cumulative Effects on Essential Fish Habitat;* February 5, 2008; attached to this report as attachment 2.1-1, *Conceptual Wetland Mitigation Plan,* January 24, 2008.

The FAA would appreciate a response to this letter as soon as possible because we are close to completing the EIS process. Thank you.

Sincerely,

Virginia Lane, AICP
Environmental Specialist
Orlando Airports District Office

cc: (via electronic mail)

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[4] Letter from Marc Gambrill, Broward County Aviation Department, to Virginia Lane, FAA Orlando Airports District Office, Dated December 4, 2007.

U.S. Department
of Transportation
**Federal Aviation
Administration**

ORLANDO AIRPORTS DISTRICT OFFICE
5950 Hazeltine National Dr., Suite 400
Orlando, Florida 32822-5024
Phone: (407) 812-6331

February 5, 2008

Ms. Jocelyn Karazsia
National Marine Fisheries Service
400 North Congress Avenue, Suite 120
West Palm Beach, Florida 33401

Re: Fort Lauderdale-Hollywood International Airport (FLL)
Draft Environmental Impact Statement (Draft EIS)
Essential Fish Habitat (EFH) Assessment Additional Information

Dear Ms. Karazsia:

Please find enclosed the additional information you requested in your letter dated May 17, 2007 and FAA's response to National Marine Fisheries Services' EFH Conservation Recommendation. The FAA has determined the Proposed Action would not result in significant adverse impacts to EFH or significant cumulative impacts to wetlands and EFH based on the proposed mitigation for the Proposed Action and mitigation that would be required for other projects in the area around FLL.

We appreciate your evaluation of this information and request your determination that the consultation process satisfies the Federal agency consultation requirements of Section 305. If you have any questions regarding the attached document or require additional information, please call me at (407) 812-6331 extension #129.

Sincerely,

Virginia Lane, A.I.C.P.
Environmental Specialist

Enclosure

Cc: Miles M. Croom, NMFS

Direct, Secondary, and Cumulative Effects on Essential Fish Habitat

U.S. Department of Transportation
Federal Aviation Administration

Proposed Expansion of Runway 9R-27L
Fort Lauderdale-Hollywood International Airport
Environmental Impact Statement

Prepared for:
National Marine Fisheries Service

Prepared for the FAA by:

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TABLE OF CONTENTS

LIST OF TABLES

LIST OF ATTACHMENTS

* Note: Tables and attachments are numbered corresponding with the EFH Assessment section in which they are located.

Direct, Secondary, and Cumulative Effects on Essential Fish Habitat
Fort Lauderdale-Hollywood International Airport

1.0 INTRODUCTION

This report analyzes potential effects—including potential direct, secondary, and cumulative effects—of the Proposed Action, expansion of Runway 9R-27L and associated actions at the Fort Lauderdale-Hollywood International Airport (FLL) on Essential Fish Habitat (EFH) regulated by the National Marine Fisheries Service (NMFS). This report also includes the conceptual mitigation plan for any unavoidable impacts to wetlands designated as EFH that could potentially result from the Proposed Action.

The Federal Aviation Administration (FAA) published a Draft Environmental Impact Statement (Draft EIS) for the development and expansion of Runway 9R/27L at FLL in March 2007. The Draft EIS contained an EFH assessment in accordance with 50 CFR Section 600.920(e) for the Airport Sponsor's Proposed Project and other alternatives. Of the alternatives considered, Alternative B1c[1] is the focus of this report because it is the Airport Sponsor's Proposed Project and, therefore, the Proposed Action.

The NMFS has commented on the information contained in the Draft EIS and provided EFH conservation recommendations for consideration by the FAA. The NMFS has also requested additional information from the FAA in order to fully evaluate the Proposed Action.[2] The additional information requested by NMFS is included in this report.

1.1 GENERAL PROJECT DESCRIPTION FOR THE PROPOSED ACTION

The Proposed Action would redevelop Runway 9R/27L to a length of 8,000 feet and a width of 150 feet. An Engineered Material Arresting System (EMAS) would be used at each runway end in place of a standard Runway Safety Area (RSA). The east end of Runway 9R/27L would be elevated over the Florida East Coast (FEC) Railway and US Highway 1. The western extent of the runway would be the Dania Cut-Off Canal. Runway 13/31 would be permanently closed to accommodate elevation of Runway 9R/27L.

As discussed in the Draft EIS, the Proposed Action and alternatives were developed to avoid and minimize direct impacts to wetlands to the extent practicable. In December 2003, the Broward County Commission approved a modified south runway expansion which was to stay within the confines of 7th Avenue on the east side of the Airport. The intent of this Commission action was to limit impacts to wetlands located to the east of 7th Avenue on the east side of the Airport.[3] In

[1] The airfield geometry, NAVAIDs, and potential facility impacts for Alternative B1b and B1c are identical. Alternative B1c includes operational restrictions specified in the Interlocal agreements. Broward County's Preferred Alternative is Alternative B1c and the Proposed Action.

[2] Letter from Miles M. Croom, Assistant Regional Administrator, Habitat Conservation Division, U.S. Department of Commerce, National Oceanic and Atmospheric Administration, National Marine Fisheries Service, to Virginia Lane, Environmental Specialist, FAA Orlando Airports District Office, dated May 17, 2007.

[3] Broward County Aviation Department December 12, 2003 Letter from Tom Jargiello, Acting Director of Aviation, to Dean Stringer, Manager FAA Orlando Airports District Office.

addition, Broward County has committed to the use of a modified runway approach light system for the Proposed Action. This modified runway approach light system avoids encroachment of the Dania Cut-Off Canal and the adjacent triangular marine waterbody on the west end of the runway. The modified runway approach light system would also prevent the encroachment of West Lake Park and reduces impacts to wetlands on the east end of the runway.

Alternative B1c includes the following elements:

- Expand and elevate Runway 9R/27L to an overall length of 8,000 feet and width of 150 feet
- Construct a new full-length parallel taxiway 75 feet wide on the north side of Runway 9R/27L with separation of 400 feet from 9R/27L
- Construct an outer dual parallel taxiway that would be separated from the proposed north side parallel taxiway by 276 feet
- Construct connecting taxiways from the proposed full-length parallel taxiway to existing taxiways
- Construct an Instrument Landing System (ILS) for landings on runways 9R and 27L. Runway ends 9R and 27L would have a Category I ILS, which includes a Medium Intensity Approach Light System with runway alignment indicator lights (MALSR), localizer, and glideslope antennae.
- Decommission Runway 13/31
- Redevelop terminal gates

The following connected actions would be necessary:

- Close Airport Perimeter Road located within the approach to Runway 9R
- Relocate Airport Surveillance Radar 9 (ASR-9)
- Acquire all or a portion of the Hilton Fort Lauderdale-Hollywood Airport Hotel (formerly the Wyndham) located at 1870 Griffin Road Fort Lauderdale, Florida to accommodate a portion of the existing structure that would be located within the Proposed Runway Protection Zone (RPZ) for extended Runway 9R/27L
- Partial displacement of the Jet Center facilities due to potential use of a taxiway as a temporary runway during construction of the Proposed Action
- Full displacement of the Gulfstream Airways aircraft maintenance facilities due to potential use of a taxiway as a temporary runway during construction of the Proposed Action

Direct, Secondary, and Cumulative Effects on Essential Fish Habitat
Fort Lauderdale-Hollywood International Airport

2.0 ASSESSMENT OF IMPACTS TO ESSENTIAL FISH HABITAT

2.1 DIRECT EFFECTS

The EFH within the Detailed Study Area[4] potentially affected by the Proposed Action includes estuarine scrub/shrub (mangrove and mangrove fringe) wetlands that are hydrologically-connected to the Dania Cut-Off Canal and are located to the east of Runway 9R/27L. Species managed by the South Atlantic Fisheries Management Council (SAFMC) that could possibly utilize this habitat as part of their life histories include penaeid shrimp, red drum, snapper-grouper complex, and other aquatic species. The following section discusses impacts to these wetlands designated as EFH (W-17c, W-25a, and W-25b) that could occur with implementation of the Proposed Action. For a full assessment of all wetlands potentially affected by the Proposed Action, in addition to wetlands designated as EFH, refer to **Attachment 2.1-1**, *Conceptual Wetland Mitigation Plan*.

2.1.1 Direct Impacts to Wetlands Designated as EFH

An ArcView Geographic Information systems (GIS) program was used to calculate total wetland impact acres based on the limits of disturbance. The limits of disturbance identify the footprint of the area that would be disturbed during construction activities. See **Attachment 2.1.1-1,** *Impacts to Wetlands from the B1b/c Alternative,* for a graphic depiction of the proposed limits of disturbance and the total direct impacts to wetlands that would result from the construction of the Proposed Action. Uniform Mitigation Assessment Method (UMAM) functional loss (FL) scores were calculated for each wetland impact. These FL scores are equivalent to the UMAM functional gain (FG) credits needed for mitigation. The UMAM score sheets for impacts to wetlands from the Proposed Action are included in **Attachment 2.1-1**, *Conceptual Wetland Mitigation Plan*.

Direct impacts of 2.67 acres to W-17c, 0.20 acres to W-25a, and 0.18 acres to W-25b would result from fill, erosion, sedimentation, and the clearing of vegetation associated with the installation of the runway approach lights and the associated access road to the east of Runway 9R/27L. These direct wetland impacts would result in a combined total of 5.63 UMAM FG credits needed for mitigation (see **Table 2.3-1**, below).

The runway approach light system at the western end of Runway 9R/27L would be constructed by installing cables under the Dania Cut-Off Canal to avoid impacts to the canal and adjacent triangular waterbody. These cables would be installed using directional drilling or a comparable method which avoids impacts to the canal bottom as well as the associated aquatic habitat adjacent to and within the canal. A detailed description of the installation of the approach light system to support Runway 9R/27L is included in **Attachment 2.1-1**, *Conceptual Wetland Mitigation Plan*.

[4] Detailed Study Area is defined for the purposes of the FLL EIS as the area within which physical impacts could occur from any evaluated project alternative.

2.2 SECONDARY EFFECTS

2.2.1 Secondary Impacts to Wetlands Designated as EFH

In addition to direct impacts, the FAA assessed potential secondary impacts to wetlands designated as EFH that could occur with the implementation of the Proposed Action. A secondary wetland impact was generally assumed to be a decrease in value to wetlands occurring within 25 feet due to close proximity to disturbed areas[5]. The Proposed Action could result in possible secondary impacts to 0.39 acres of W-25a and 0.41 acres of W-25b due to their close proximity to the approach light system corridor limits of disturbance (see **Table 2.3-1**, below). These impacts would result in 0.77 combined FG credits needed for mitigation. For details on the methodology used to assess secondary impacts to wetlands for the Proposed Action as well as figures showing the limits of secondary impacts to wetlands, please refer to **Attachment 2.1-1,** *Conceptual Wetland Mitigation Plan*.

2.2.2 Other Secondary Effects

Other secondary effects to EFH resulting from construction activities could potentially occur from the following:

- Temporary disturbance and displacement of fish species,
- Increased sediment loads and turbidity in the water column,
- Temporary loss of food items to fisheries, and
- Limited disruption or destruction of live bottom habitats.

Effects would be temporary and would be offset by special construction techniques and/or environmental protection guidelines, including the use of Best Management Practices (BMPs) as recommended by the U.S. Environmental Protection Agency's (USEPA's) National Pollution Discharge Elimination System (NPDES) stormwater permit for construction activities, FAA Advisory Circular 150/5370-10B, *Standards for Specifying Construction of Airports,* and *Sea Turtle and Smalltooth Sawfish Construction Conditions* as provided by NMFS, as well as any State and local requirements. The effectiveness of these BMPs in protecting biotic and human health from surface water degradation would be assessed through monitoring programs associated with required permits.

2.3 TOTAL DIRECT AND SECONDARY EFFECTS

Table 2.3-1 below provides a summary analysis of direct and secondary impacts to hydrologically-connected wetlands, also designated as EFH that could occur as a result of the Proposed Action, including the UMAM FG credits that would be needed for mitigation.

[5] This methodology is derived from secondary impacts Section 4-2-7 of *2007 Basis of Review for Environment Resource Permit Applications within the South Florida Water Management District*, see Draft Conceptual Mitigation Plan, Attachment 2.1-1.

Direct, Secondary, and Cumulative Effects on Essential Fish Habitat
Fort Lauderdale-Hollywood International Airport

Table 2.3-1
Alternative B1c Impacts to Wetland Habitat Designated as EFH

Wetland ID	Wetland Type	Total Acres	Impact Acres		UMAM Functional Gain (FG) Credits Needed	
			Direct Impact	Secondary Impact	Direct Impact	Secondary Impact
W-17c	Mangrove/Exotic	2.67	**2.67**	0.00	**1.25**	0.00
W-25a	Mangrove	8.92	**0.20**	**0.39**	**0.12**	**0.23**
W-25b	Mangrove	22.80	**0.18**	**0.41**	**0.13**	**0.30**
		Acres Total = 34.39	***Impact Acres Total = 3.85***		***UMAM FG Credits Needed Total = 2.03***	

Source: Sandra Walters Consultants, Inc. (SWC), 2008

2.4 CONCEPTUAL MITIGATION FOR PROPOSED ACTION IMPACTS TO EFH

Broward County has indicated to the FAA that the County intends to use mitigation credits established in West Lake Park by USACE permit no. SAJ-2002-00072 and SFWMD permit no. 06-04016-P, to compensate for direct and secondary wetland impacts resulting from the Proposed Action.[6] The permits include a project plan and the UMAM FG scores generated by the enhancement, creation, and restoration projects occurring at the park.[7]

According to the USACE assessments, there is an estimated total of 20.57 mangrove mitigation credits available for Broward County based on the creation, enhancement, and preservation projects permitted at West Lake Park. Broward County proposes to use a portion of these credits to compensate for direct and secondary wetland impacts that would occur with the construction of the Proposed Action. No FG credits have yet been applied to any Broward County projects; therefore, all functional gain credits remain available for allocation[8].

The conceptual mitigation plan for all wetland impacts resulting from the Proposed Action is provided as **Attachment 2.1-1**, *Conceptual Wetland Mitigation Plan*. This conceptual mitigation plan was provided to USACE and SFWMD for review and comment and discussed in a teleconference conducted on January 31, 2008.

[6] Source: Broward County Aviation Department (BCAD) letter to the FAA dated December 4, 2007 regarding the use of wetland mitigation credits at West Lake Park for Airport Sponsor's Proposed Project, 2007.

[7] West Lake Park Mitigation Plan and UMAM scores were produced by Miller Legg and Associates and included in USACE and SFWMD permits SAJ-2002-00072 and 06-04016-P, 2006

[8] Source: January 22, 2008 telephone conference with West Lake Park Manager Pat Young. Information provided by Sandra Walters Consultants, Inc. 2008.

2.5 CUMULATIVE EFFECTS

The Council on Environmental Quality's (CEQ) regulations (40 CFR § 1500 through 1508) implementing the procedural provision of the National Environmental Policy Act (NEPA), as amended (42 U.S.C. § 4321 et. seq.) define cumulative effects as "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions" (see 40 CFR 1508.7). Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.[9]

CEQ guidance in considering cumulative effects involves defining the scope of the other actions and their interrelationships with the proposed project. The scope must consider geographical and temporal overlap among the proposed project and other actions. It must also evaluate the other actions at the time of the overlap.

Development projects in the area surrounding FLL have resulted in a substantial modification to the existing landscape. For the purposes of this assessment, the past actions are defined as those that were completed between 1999 and 2004. Present actions are defined as those completed from 2005 to 2008. Foreseeable future actions are defined as those planned to occur between 2009 and 2020, which is within the planning horizon of the EIS. **Table 2.4-1** summarizes the impact analyses to wetlands and EFH from projects in the area around FLL.

[9] CFR Title 40: *Protection of Environment*. § 1508.7 Cumulative Impact.

Direct, Secondary, and Cumulative Effects on Essential Fish Habitat
Fort Lauderdale-Hollywood International Airport

Table 2.4-1
Summary Analysis of Cumulative Impacts to Wetlands and EFH

Name of Project	Wetland Impacts	EFH Impacts	Comments on Mitigation
Past Projects			
Florida Airspace Optimization Project	No impacts	No impacts	N/A
Port Everglades Projects			
Terminal 25 Expansion	No impacts	No impacts	N/A
Terminal 21 Expansion & Reconstruction	No impacts	No impacts	N/A
Construction of Operations Center & Harbormaster Tower	No impacts	No impacts	N/A
Terminal 2 Expansion	No impacts	No impacts	N/A
Port Security Enhancements	No impacts	No impacts	N/A
Ocean-Dredged Material Disposal Site	No Impacts	Some minor direct/indirect impacts on water column and benthic environment at offshore disposal site	Mitigated through appropriate testing of the dredged material prior to disposal as well as ongoing EPA monitoring of the areal extent of impact and rate of recovery
Current Projects			
FLL Airport Current Projects	No current impacts	No current impacts	N/A
Port Everglades Harbor Current Projects	Potential impacts to jurisdictional wetlands including mangroves for the planned dredging projects are being assessed	Impacts to EFH could occur with the planned dredging activities including temporary turbidity of the water column and removal of benthic species. Assessment of impacts are ongoing	Planned mitigation opportunities at West Lake Park are being considered for any unavoidable impacts
Broward Intermodal Center and Automated People Mover	Impacts to jurisdictional wetlands occurring within the study area are currently being assessed	Impacts to certain estuarine and marine wetlands designated as EFH within the study area are currently being assessed	FDOT wetland mitigation site at I-595 and US-1 interchange is currently being considered for any potential unavoidable impacts
Ocean Express Natural Gas Pipeline	No impacts because using directional drilling	Impacts to 0.44 acres of attached epibenthic biota with 5-20% coverage and 0.38 acres of sandy bottom	Removal of 37,642 tires in tire reef off of Broward County (DEP permit no. 06-0193181-006)

Table 2.4-1, *Continued*
Summary Analysis of Cumulative Impacts to Wetlands and EFH

Name of Project	Wetland Impacts	EFH Impacts	Comments on Mitigation
Tractebel Calypso Natural Gas Pipeline	Total expected wetland impacts includes less than 0.1 acres of direct impacts	Impacts to EFH for various nearshore and offshore species and colonized hardbottom are expected with construction of pipeline	Planned path would minimize impacts to protected species and habitats nearshore and offshore. Restoration of a wetland area overun by exotics onsite is currently planned to mitigate for unavoidable wetland impacts
South Florida East Coast Corridor Transit Analysis Study	No impacts yet identified (study is in planning phase)	No impacts yet identified (study is in planning phase)	N/A
North Perry Airport Master Plan Update	No impacts yet identified (study is in planning phase)	No impacts yet identified (study is in planning phase)	N/A
Proposed Dania Beach U.S. Border Patrol Facility	Impacts to 4.16 acres of jurisdictional mangrove wetlands is expected	Impacts to 4.16 acres of mangrove habitat designated as EFH is expected	Propose to purchase 2.71 saltwater wetland credits at FPL Everglades Mitigation Bank[a]
Reasonably Foreseeable Future Actions			
Taxiway C Extension and Relocation/Decommissioning of VOR Beacon at FLL	Not yet determined	Not yet determined. No adverse impacts to wetlands or EFH are expected.	N/A
New Broward County ADA Facility	Not yet determined	Not yet determined.	N/A
Rehabilitation of Runways 9R/27L and 13/31 at FLL	Not yet determined	Not yet determined. No adverse impacts to wetlands or EFH are expected.	N/A
Atlantic Village Hotel and Marina	Not yet determined	Not yet determined.	N/A
Port Everglades Planned Terminal Projects	Not yet determined	Not yet determined.	N/A
Planned Dredging at Port Everglades	Not yet determined	Not yet determined.	N/A
FPL Port Everglades Power Plant	Not yet determined	Not yet determined.	N/A

[a] Source: Barbara Chow, Broward County Environmental Protection Department, August 2007
Source of table: Sandra Walters Consultants, Inc. (SWC), 2007

Direct, Secondary, and Cumulative Effects on Essential Fish Habitat
Fort Lauderdale-Hollywood International Airport

A description of all of the above projects, except for the **Dania Beach U.S. Border Patrol Facility**, was provided in the Draft EIS in Chapter 7 *Cumulative Impacts*, Section 7.1.1, *Identification of Pertinent Past, Present, and Reasonably Foreseeable Future Actions.* A description of the Dania Beach U.S. Border Patrol Facility is provided below.

Dania Beach U.S. Border Patrol Facility: The Department of Defense (DOD) is proposing to construct a border patrol facility on an undeveloped 4.346-acre parcel located in the City of Dania Beach. The DOD seeks to protect the nation's borders by controlling access and preventing illegal and harmful individuals from entering the United States, including illegal immigrants, drug traffickers, and terrorists. The proposed facility will help enhance border protection along the South Florida coastline and will be strategically placed close to both FLL and Port Everglades.

The project would involve filling approximately 4.16 acres of jurisdictional mangrove wetlands designated as EFH for construction of the facility as well as other supporting structures. Proposed mitigation for these unavoidable impacts to mangroves and EFH consists of the purchase of 2.71 saltwater wetland credits at Florida Power & Light (FPL) Everglades Mitigation Bank.

3.0 CONCLUSION

The Proposed Action could potentially impact 3.85 acres of mangrove wetlands designated as EFH due to direct and possible secondary impacts from construction of the approach light system and associated access roads to the east of Runway 9R/27L. Impacts to these mangrove areas would result in 2.03 UMAM FG credits needed for mitigation. A total of at least 20.57 mangrove FG credits are available from Broward County's already-permitted West Lake Park mitigation project. No credit has been allocated so far to any other project; therefore, all credits remain available for allocation. The County plans to use a portion of these credits to mitigate for unavoidable impacts from the proposed runway extension project at FLL.

Other projects in the area have had or are anticipated to have wetland and EFH impacts. However, these impacts have either already been mitigated, or, through the environmental resource permitting process are still being assessed and will be required to be mitigated.

With the mitigation proposed for the Proposed Action and the required mitigation for other projects in the surrounding area, no significant direct, secondary, or cumulative effects to EFH, wildlife, or protected species—when considered in addition to other area developments—are anticipated with implementation of the Proposed Action.

4.0 SUMMARY AND RESPONSES TO NMFS COMMENTS AND EFH CONSERVATION RECOMMENDATIONS

NMFS reviewed the Draft EIS and provided comments and/or requests for additional information regarding potential effects to EFH by the Proposed Action in a letter to the FAA dated May 17, 2007. The following is a summary of the comments provided by NMFS as well as the associated responses based on the information presented in this report:

- **Provide a full assessment of cumulative effects:** The full assessment of cumulative effects on wetlands and EFH in the surrounding area is provided in **Table 2.4-1** *Summary Analysis of Cumulative Impacts to Wetlands and EFH,* and includes potential impacts as well as proposed mitigation. Description and analysis of the proposed US Border Patrol Facility in Dania Beach, which had not been discussed in the Draft EIS, is also provided in Section 2.4 of this report. Existing development in southeast Broward County has already caused substantial modification to the surrounding natural environment. With the proposed mitigation, the limited impacts to EFH resulting from the Proposed Action, when considered in addition to other area developments, are not expected to lead to substantial cumulative impacts to EFH, wildlife, or protected species.
- **Provide a compensatory mitigation plan:** The conceptual wetland mitigation plan to compensate for unavoidable impacts to wetlands, including wetlands designated as EFH, from the Proposed Action is enclosed with this report as **Attachment 2.1-1**, *Conceptual Wetland Mitigation Plan*.
- **Provide Uniform Mitigation Assessment Method (UMAM) scores for the mitigation site:** The UMAM functional gain scores for enhancement, creation, and preservation projects occurring at West Lake Park are provided in the USACE permit no. SAJ-2002-00072 and SFWMD permit no. 06-04016-P. These scores represent the FG mitigation credit available to the County to offset impacts resulting from County projects.
- **Provide the FAA's views regarding the effects of the Proposed Action on EFH:** The Proposed Action would result in a total impact of 3.83 acres to mangrove wetlands designated as EFH, including 3.05 acres of direct impacts and 0.80 acres of possible secondary impacts due to construction of the approach light system and associated access roads to the east of Runway 9R/27L. It is anticipated that 2.03 UMAM FG credits would be needed to compensate for these unavoidable impacts. According to the *Conceptual Wetland Mitigation Plan* provided as **Attachment 2.1-1** to this report, adequate credit is available at West Lake Park (at least 20.57 mangrove mitigation credits available from permitted projects) to compensate for unavoidable impacts to wetland impacts resulting from the Proposed Action, including impacts to wetlands designated as EFH. An analysis of cumulative effects on wetlands and EFH is provided in Section 2.4 of this report. The Proposed Action would not result in significant cumulative impacts to wetlands and EFH based on the proposed mitigation as well as the mitigation that is already proposed or will be required by projects in the area surrounding FLL. Therefore, the FAA has determined that the Proposed Action will not have significant adverse impacts to EFH.

Direct, Secondary, and Cumulative Effects on Essential Fish Habitat
Fort Lauderdale-Hollywood International Airport

In addition to the aforementioned comments, NMFS also provided EFH conservation recommendations based on the requirements of Section 305(b)(4)(A) of the Magnuson-Stevens Act. Below are the EFH conservation recommendations provided by NMFS and FAA's responses.

- **A plan shall be developed for providing full, in-kind compensation for unavoidable adverse impacts to wetlands. The plan shall address compensation for loss of productivity and habitat functions that occur during the period between elimination/degradation of existing wetlands and establishment of functionally compatible mangrove habitat that would be protected in perpetuity. Execution of the approved mitigation plan shall be a required component of the project:** A conceptual mitigation plan to compensate for unavoidable impacts to wetlands and EFH is provided in this report as **Attachment 2.1-1**, *Conceptual Wetland Mitigation Plan*.
- **A monitoring plan shall be developed to assess the ecological success of the offsite, compensatory mitigation. Annual monitoring of the mitigation site shall take place for five years following completion of the mitigation project. In the event it is determined that the implemented mitigation measures do not completely offset the destruction of mangrove wetlands, the plan shall include contingency measures, such as additional planting or exotic vegetation removal, in order to provide functionally suitable replacement habitat. The mitigation/monitoring plan shall be forwarded to the NMFS for review and approval prior to initiation of construction:** The monitoring plan for ecological success of the offsite, compensatory mitigation is described in section 5.0 of the attached conceptual wetland mitigation plan (see **Attachment 2.1-1**, *Conceptual Wetland Mitigation Plan*).

U.S. Department
of Transportation
**Federal Aviation
Administration**

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January 24, 2008

Ms. Leah Oberlin
U.S. Army Corps of Engineers
Palm Beach Gardens Regulatory Office
4400 PGA Blvd. – Suite 500
Palm Beach Gardens, Florida 33410

Re: Draft Conceptual Wetland Mitigation Plan for the Airport Sponsor's Proposed Action (Alternative B1c) for the Fort Lauderdale-Hollywood International Airport (FLL) Environmental Impact Statement (EIS)

Dear Ms. Oberlin:

The Federal Aviation Administration (FAA) has prepared a 'Draft' Conceptual Wetland Mitigation Plan (enclosed, 'Draft' Conceptual Wetland Mitigation Plan) for unavoidable impacts to wetlands that could result from implementation of the Proposed Action (Alternative B1c, the Airport Sponsor's Proposed Project) for the FLL Runway Expansion EIS. The FAA requests that the U.S. Army Corps of Engineers (USACE) review this 'Draft' Conceptual Plan and provide comments on the analysis and approach.

Wetland Impacts and Conceptual Mitigation

Below is Table 3.3-1 from Section 3.3 of the Conceptual Plan depicting the potential direct and secondary impacts to wetlands for Alternative B1c, and the Uniform Mitigation Assessment Method (UMAM) functional gain (FG) credits that are needed for mitigation.

Table 3.3-1 Potential Wetland Impacts for the Proposed Action (Alternative B1c)

Wetland ID	Wetland Type	Total Acres	Impact Acres		UMAM Functional Gain (FG) Credits Needed	
			Direct Impact	Secondary Impact	Direct Impact	Secondary Impact
W-8	Mangrove	2.67	*0.00*	***0.07***	*0.00*	***0.04***
W-17a	Exotic	0.61	***0.61***	*0.00*	***0.16***	*0.00*
W-17b	Exotic	2.81	***2.81***	*0.00*	***1.03***	*0.00*
W-17c	Mangrove/Exotic	2.67	***2.67***	*0.00*	***1.25***	*0.00*
W-25a	Mangrove	8.92	***0.20***	***0.39***	***0.12***	***0.23***
W-25b	Mangrove	22.80	***0.18***	***0.41***	***0.13***	***0.30***
W-33	Exotic	8.59	***5.37***	***0.22***	***1.79***	***0.07***
W-N3a	Exotic	2.95	***2.83***	***0.09***	***0.85***	***0.03***
W-N3b	Tree Farm/Prairie	5.65	***0.74***	***0.24***	***0.30***	***0.10***
		Acres Total = 57.67	***Impact Acres Total = 16.83***		***UMAM FG Credits Needed Total = 6.40***	

Source: Sandra Walters Consultants, Inc., 2008.

As stated in the Conceptual Plan, Broward County has indicated to the FAA that the County intends to use mitigation credits established at West Lake Park, in U.S. Army Corps of Engineers (USACE) permit no. SAJ-2002-00072 and South Florida Water Management District (SFWMD) permit no. 06-04016-P, to compensate for potential direct and secondary wetland impacts resulting from the Proposed Action. Below is Table 4-1 from Section 4.0 of the Conceptual Plan showing the amount of available mangrove mitigation credits from projects permitted at West Lake Park. The FG credit scores were taken from the USACE permit.

Table 4-1 Estimated Mangrove Mitigation Credits Available at West Lake Park

Activity	Project Type	Size (acres)	Mitigation Credit (Functional Gain (FG) Credit)
Mangrove protection and enhancement by riprap placement	Enhancement	24.0	6.24
Mangrove protection by riprap supplement	Enhancement	8.0	2.08
Conversion of spoil island/exotic dominated upland area	Creation	22.2	10.43
Mangrove creation from Dania Cutoff Canal (open water)	Creation	2.0	0.42
Mangrove outparcel acquisition (outside of improvement areas)	Preservation	23.3	1.4
		Acres Total = 79.5	**Mangrove FG Credit Total = 20.57**

Source: U.S. Army Corps of Engineers, Permit SAJ-2002-00072, 2006

According to the USACE permit, an estimated 20.57 mangrove mitigation credits are available to Broward County based on the creation, enhancement, and preservation projects permitted at West Lake Park. West Lake Park Manager Ms. Patricia Young informed the EIS Project Team that no FG credits have yet been applied to any Broward County projects; therefore, all functional gain credits included in this table remain available for allocation for this proposed Broward County airport project.

The permits for the West Lake Park mitigation project require an individual assessment of each County project involving impacts and a permit modification to the West Lake permits be acquired to apply FG credits to the specific UMAM functional loss scores. Therefore, in the case of wetland impacts resulting from this Proposed Action, environmental resource permit (ERP) applications would be submitted to the SFWMD and USACE along with an application for a West Lake Park permit modification to allocate 6.40 FG credits to compensate for the 16.83 acres of unavoidable direct and secondary impacts to wetlands from construction of Alternative B1c. Mitigation credits would be assigned to the project upon approval of these applications by the regulatory agencies.

Mitigation for Impacts to Wetland 33 (W-33)

As disclosed in the FAA Draft EIS,[1] Wetland 33 (W-33) is a freshwater wetland dominated by Brazilian Pepper. W-33 is the only wetland affected by Alternative B1c that exhibits characteristics of a freshwater wetland. USACE and SFWMD staff agreed conceptually to the

[1] *Fort Lauderdale Hollywood International Airport Draft Environmental Impact Statement.* U.S. Department of Transportation, Federal Aviation Administration, March 2007.

use of out-of-kind mitigation credit at West Lake Park to compensate for impacts to W-33 during a September 13, 2006 telephone conference with regulatory agency representatives.

Conclusion

The FAA is requesting that the USACE review the enclosed 'Draft' Conceptual Wetland Mitigation Plan and provide comments regarding the analysis and approach. If you have any questions regarding this information or require additional information, please call me at (407) 812-6331 extension #129. We will also discuss this information with you at our scheduled teleconference on January 31th at 1:00 p.m. (The teleconference number and access code will be sent to you via email.)

* * * * *

Vision 100 Act: Interagency Streamlining

In accordance with the *Memorandum of Understanding for Interagency Stewardship and Streamlining Fort Lauderdale-Hollywood International Airport Environmental Impact Statement and Permitting* between the FAA and the USACE, please sign and return the Agency Consensus Form enclosed as Attachment A.

Sincerely,

Virginia Lane, A.I.C.P.
Environmental Specialist

Attachment A Agency Consensus Form

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Conceptual Wetland Mitigation Plan

U.S. Department of Transportation
Federal Aviation Administration

Fort Lauderdale-Hollywood International Airport
Proposed Development and Expansion of Runway 9R/27L and Other Associated Airport Projects

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TABLE OF CONTENTS

LIST OF TABLES

LIST OF ATTACHMENTS

LIST OF ATTACHMENTS, *Continued*

* Note: Tables and attachments are numbered corresponding with the Conceptual Mitigation Plan section in which they are located.

1.0 INTRODUCTION

The purpose of this report is to provide a conceptual mitigation plan for potentially unavoidable impacts to jurisdictional wetlands due to the construction of the Proposed Action, Alternative B1c.[1] The Proposed Action was described in the Fort Lauderdale-Hollywood International Airport (FLL) Draft Environmental Impact Statement (EIS) and includes the development and expansion of Runway 9R/27L and other associated airport projects.

The National Environmental Policy Act (NEPA) of 1969 requires that an EIS discuss the "means to mitigate adverse environmental impacts."[2] The Federal Aviation Administration (FAA) has incorporated the requirement to include discussion of mitigation measures as a part of the EIS process in FAA Order 1050.1E, *Environmental Impacts: Policies and Procedures*, Chapter Five, Paragraph 506h, *Mitigation,* which states that the EIS describe mitigation measures considered or planned to minimize harm from the proposed action. Further, FAA Order 1050.1E, Appendix A, Section 18.2e, requires that if the action would affect wetlands and there is no practicable alternative, all practical means should be employed to minimize the wetland impacts due to runoff, construction, sedimentation, land use, or other reason. The EIS must contain a description of proposed mitigations, with the understanding that a detailed mitigation plan must be developed to the satisfaction of the 404 permitting agency in consultation with those agencies having an interest in the affected wetland.

2.0 PROPOSED ACTION

The Proposed Action would redevelop Runway 9R/27L to a length of 8,000 feet and a width of 150 feet. An Engineered Material Arresting System (EMAS) would be used at each runway end in place of a standard Runway Safety Area (RSA). The east end of Runway 9R/27L would be elevated over the Florida East Coast (FEC) Railway and US Highway 1. The western extent of the runway would be the Dania Cut-Off Canal. Runway 13/31 would be permanently closed to accommodate elevation of Runway 9R/27L.

As discussed in the Draft EIS, the Proposed Action and alternatives were developed to avoid and minimize direct impacts to wetlands to the extent practicable. In December 2003, the Broward County Commission approved a modified south runway expansion which was to stay within the confines of 7th Avenue on the east side of the Airport. The intent of this Commission action was to limit impacts to wetlands located to the east of 7th Avenue on the east side of the Airport.[3] In addition, Broward County has committed to the use of a modified runway approach light system for the Proposed Action. This modified runway approach light system avoids encroachment of the Dania Cut-Off

[1] The airfield geometry, NAVAIDs, and potential facility impacts for Alternative B1b and B1c are identical. Alternative B1c includes operational restrictions specified in the Interlocal agreements. Broward County's Preferred Alternative is Alternative B1c and the Proposed Action.

[2] *National Environmental Policy Act (NEPA) of 1969* (P.L. 91-190) §1502.16(h).

[3] Broward County Aviation Department December 12, 2003 Letter from Tom Jargiello, Acting Director of Aviation, to Dean Stringer, Manager FAA Orlando Airports District Office.

Conceptual Wetland Mitigation Plan
Fort Lauderdale-Hollywood International Airport

Canal and the adjacent triangular marine waterbody on the west end of the runway. The modified runway approach light system would also prevent the encroachment of West Lake Park and reduces impacts to wetlands on the east end of the runway (see **Appendix A** of this report, *Description of the Installation of the Runway Approach Light System for Alternative B1c*).

Alternative B1c includes the following elements:

- Expand and elevate Runway 9R/27L to an overall length of 8,000 feet and width of 150 feet
- Construct a new full-length parallel taxiway 75 feet wide on the north side of Runway 9R/27L with separation of 400 feet from 9R/27L
- Construct an outer dual parallel taxiway that would be separated from the proposed north side parallel taxiway by 276 feet
- Construct connecting taxiways from the proposed full-length parallel taxiway to existing taxiways
- Construct an Instrument Landing System (ILS) for landings on runways 9R and 27L. Runway ends 9R and 27L would have a Category I ILS, which includes a Medium Intensity Approach Light System with runway alignment indicator lights (MALSR), localizer, and glideslope antennae (see **Appendix A** of this report, *Description of the Installation of the Runway Approach Light System for Alternative B1c*).
- Decommission Runway 13/31
- Redevelop terminal gates

The following connected actions would be necessary:

- Close Airport Perimeter Road located within the approach to Runway 9R
- Relocate Airport Surveillance Radar 9 (ASR-9)
- Acquire all or a portion of the Wyndham Fort Lauderdale-Hollywood Airport Hotel located at 1870 Griffin Road Fort Lauderdale, Florida to accommodate a portion of the existing structure that would be located within the Proposed Runway Protection Zone (RPZ) for extended Runway 9R/27L
- Partial displacement of the Jet Center facilities due to potential use of a taxiway as a temporary runway during construction of the Proposed Action
- Full displacement of the Gulfstream Airways aircraft maintenance facilities due to potential use of a taxiway as a temporary runway during construction of the Proposed Action

3.0 POTENTIAL WETLAND IMPACTS FROM THE PROPOSED ACTION

Detailed descriptions of all wetlands located in the Detailed Study Area that are affected by the B1c Alternative are provided as **Appendix B**, *Descriptions of Affected Wetlands in the Detailed Study Area for the B1c Alternative*. The descriptions were developed as a result of field work conducted by the EIS team to document conditions and to collect required data to develop Uniform Mitigation Assessment Method (UMAM) scores. UMAM spreadsheets were provided to the regulatory agencies at an August 10, 2006 field visit to all of the wetland sites. UMAM scores were subsequently modified during a September 13, 2006 teleconference held with representatives of the Broward County Environmental Protection Department (BCEPD), the South Florida Water Management District (SFWMD), the U.S. Environmental Protection Agency (USEPA), and the U.S. Army Corps of Engineers (USACE). The modified UMAM scores were generally agreed to by all agencies participating in the teleconference, and a meeting summary of that teleconference is provided as **Attachment 3-1**.

3.1 Direct Impacts

Direct impacts of 15.41 acres would result from fill, erosion, sedimentation, and the clearing of vegetation associated with the expansion of Runway 9R/27L, the installation of the runway approach lights, and the associated access roads to the east. Redevelopment of Runway 9R/27L would impact 0.61 acres of W-17a, 2.81 acres of W-17b, 2.67 acres of W-17c, 5.37 acres of W-33, 2.83 acres of W-N3a, and 0.74 acres of W-N3b. These impacts would result in the following UMAM Functional Gain (FG) credits needed for mitigation: 0.16 credits for W-17a, 1.03 credits for W-17b, 1.25 credits for W-17c, 1.79 credits for W-33, 0.85 credits for W-N3a, and 0.30 credits for W-N3b.

Further east, the installation of the runway approach lights and associated access roads would impact 0.20 acres of W-25a and 0.18 acres to W-25b, resulting in 0.12 and 0.13 FG credits needed for mitigation, respectively. Direct wetland impacts from Alternative B1c would result in a total of 5.63 UMAM FG credits needed for mitigation. **Table 3.3-1** provides a summary of this data. **Attachment 3.1-1** graphically depicts the limits of disturbance and impacts to wetlands expected from the construction of Alternative B1c.

The runway approach light system at the western end of Runway 9R/27L would be constructed by installing cables under the Dania Cut-Off Canal to avoid impacts to the canal and adjacent triangular marine waterbody. These cables would be installed using directional drilling or a comparable method which avoids impacts to the canal bottom as well as the associated aquatic habitat adjacent to and within the canal. A detailed description of the installation of the approach light system to support Runway 9R/27L is appended to this conceptual mitigation plan as **Appendix A**, *Description of the Installation of the Runway Approach Light System for Alternative B1c*.

3.2 Secondary Impacts

In addition to direct impacts, the FAA assessed potential secondary impacts to wetlands that could occur with the implementation of Alternative B1c. A buffer zone extending 25 feet out from the limits of disturbance was used to assess for possible secondary impacts to wetlands in accordance with methodologies described in the SFWMD's *Basis of Review for Environmental Resource Permit Applications Within the South Florida Water Management District,* July 2007; the excerpted section is provided as **Attachment 3.2-1** to this conceptual mitigation plan. A secondary impact was generally assumed to be a decrease in value to wetlands occurring within 25 feet due to close proximity to disturbed areas. UMAM FG credits required to compensate for secondary impacts were calculated using the same scores as were used to assess direct impacts, deriving a conservative estimate of total mitigation required for the project.

Alternative B1c would include the construction of a retaining wall approximately 45 feet above mean sea level running adjacent to the affected wetlands to the south of Runway 9R/27L (W-N3a, W-N3b, and W-33). The proposed limits of disturbance include a temporary construction zone extending at least 25 feet from the edge of the retaining wall. The construction zone will be landscaped and maintained as open space at completion of the project, providing a buffer of at least 25 feet from the remaining areas of W-N3a, W-N3b, and W-33. Outside of this buffer, a 25-foot secondary impact area was defined and assessed. As a result, 0.22 acres of W-33, 0.09 acres of W-N3a, and 0.24 acres of W-N3b could receive possible secondary impacts due to their close proximity to the corridor. These impacts would result in 0.07, 0.03, and 0.10 FG credits needed for mitigation, respectively. **Attachment 3.2-2** graphically displays the secondary impact limits for W-N3a, W-N3b, and W-33. The short-term temporary realignment of US-1 during construction of Alternative B1c (also shown graphically in **Attachment 3.2-2**) would not result in secondary impacts to W-N2a or W-N2b, as these areas would be returned to pre-construction conditions.

The Proposed Action could also result in possible secondary impacts to wetlands W-25a, W-25b, and W-8 due to their proximity to the approach light system and associated access roads to the east and west of runway 9R/27L. The access roads are needed for maintenance of the approach light structures, including monthly visual operational inspections of all lights, as well as annual safety, technical, and alignment inspections. Other special activities that would occur less frequently include emergency lamp replacement and vegetation control.

To the east, the approach light structures would be accessed via a 12-foot-wide road constructed of crushed shell or gravel with an additional 9 feet on each side accommodating stormwater treatment. This 30-foot-wide corridor would extend into portions of W-25a and W-25b, resulting in the direct impacts addressed above. Secondary impacts to 0.39 acres of W-25a and 0.41 acres of W-25b could occur due to their proximity to the proposed lighting access corridor. **Table 3.3-1** provides a summary of this data. **Attachment 3.2-3** graphically displays the limits of the access corridor and secondary impacts to W-25a and W-25b. These secondary impacts would result in 0.23 and 0.30 FG credits needed for mitigation, respectively.

To the west, a similar road would be needed to access two light structures south of W-8. While this corridor would be constructed completely in uplands, it would be located within 25 feet of W-8, resulting in 0.07 acres of potential secondary impacts to this wetland and 0.04 FG credits needed for mitigation. **Attachment 3.2-4** graphically displays the limits of the access corridor and secondary impacts to W-8. Cables for the approach lights would be installed underground in PVC pipes. Crossing the Dania Cut-off Canal would be accomplished by directional drilling under the canal, adjacent water body, and shoreline wetlands, emerging at the surface at least 25 feet from the shoreline wetlands on either side, avoiding any impacts to these areas.

3.3 Total Wetland Impacts

Table 3.3-1 summarizes the wetlands that could receive direct and/or secondary impacts from implementation of Alternative B1c. This table includes the wetland type, the total acres of direct and secondary impacts, and the UMAM FG credits required to provide compensatory mitigation for impacts to each of the affected wetlands. UMAM score sheets for direct and secondary impacts to wetlands expected for the B1c Alternative are provided as **Attachments 3.3-1** and **3.3-2**, respectively. The UMAM FG credits needed shown in Table 3.3-1 are equivalent to the Functional Loss (FL) scores calculated in the UMAM score sheets.[4]

Table 3.3-1 Potential Wetland Impacts for the Proposed Action (Alternative B1c)

Wetland ID	Wetland Type	Total Acres	Impact Acres		UMAM Functional Gain (FG) Credits Needed	
			Direct Impact	Secondary Impact	Direct Impact	Secondary Impact
W-8	Mangrove	2.67	*0.00*	***0.07***	*0.00*	***0.04***
W-17a	Exotic	0.61	***0.61***	*0.00*	***0.16***	*0.00*
W-17b	Exotic	2.81	***2.81***	*0.00*	***1.03***	*0.00*
W-17c	Mangrove/Exotic	2.67	***2.67***	*0.00*	***1.25***	*0.00*
W-25a	Mangrove	8.92	***0.20***	***0.39***	***0.12***	***0.23***
W-25b	Mangrove	22.80	***0.18***	***0.41***	***0.13***	***0.30***
W-33	Exotic	8.59	***5.37***	***0.22***	***1.79***	***0.07***
W-N3a	Exotic	2.95	***2.83***	***0.09***	***0.85***	***0.03***
W-N3b	Tree Farm/Prairie	5.65	***0.74***	***0.24***	***0.30***	***0.10***
		Acres Total = 57.67	***Impact Acres Total = 16.83***		***UMAM FG Credits Needed Total = 6.40***	

Source: Sandra Walters Consultants, Inc., 2008.

[4] Other wetlands identified in the Detailed Study Area (i.e. W-N4, W-N5, W-N2a, and W-N2b) are not included in this analysis because no direct or secondary impacts are expected to occur to these wetlands as a result of the B1c Alternative.

4.0 CONCEPTUAL MITIGATION

Broward County has indicated to the FAA that the County intends to use mitigation credits established at West Lake Park, in USACE permit no. SAJ-2002-00072 and SFWMD permit no. 06-04016-P, to compensate for direct and secondary wetland impacts resulting from the Proposed Action.[5] [6] The permits include a project plan and the UMAM FG scores generated by the enhancement, creation, and restoration projects occurring at the park.[7]

West Lake Park is a 1,522-acre park located to the east and south of FLL and is currently managed by the Broward County Parks and Recreation Division (BCPRD). The park includes mangrove, seagrass, mud flat, upland, and open water communities as well as over 65 acres of exotic plant-dominated areas in addition to various recreational facilities. **Table 4-1** provides a summary of the estimated mangrove mitigation credits available according to the USACE permit.

Table 4-1 Estimated Mangrove Mitigation Credits Available at West Lake Park

Activity	Project Type	Size (acres)	Mitigation Credit (Functional Gain (FG) Credit)
Mangrove protection and enhancement by riprap placement	Enhancement	24.0	6.24
Mangrove protection by riprap supplement	Enhancement	8.0	2.08
Conversion of spoil island/exotic dominated upland area	Creation	22.2	10.43
Mangrove creation from Dania Cutoff Canal (open water)	Creation	2.0	0.42
Mangrove outparcel acquisition (outside of improvement areas)	Preservation	23.3	1.40
		Acres Total = 79.5	**Mangrove FG Credit Total = 20.57**

Source: U.S. Army Corps of Engineers, Permit SAJ-2002-00072, 2006

According to the USACE permit, there are an estimated 20.57 mangrove mitigation credits available for Broward County based on the creation, enhancement, and preservation projects permitted at West Lake Park. The assessment performed by the SFWMD resulted in a higher mangrove credit total (38.79 mangrove FG credits available); however, the USACE numbers are shown here as the minimum estimated credits available for the purposes of this conceptual plan.

[5] Source: Broward County Aviation Department (BCAD) letter to the FAA dated December 4, 2007 regarding the use of wetland mitigation credits at West Lake Park for Airport Sponsor's Proposed Project, 2007.

[6] USACE SAJ-2002-00072 issued March 2, 2006 and SFWMD 06-04016-P issued April 22, 2004.

[7] West Lake Park Mitigation Plan and UMAM scores were produced by Miller Legg and Associates and included in the USACE and SFWMD permits SAJ-2002-00072 and 06-04016-P, 2006.

Broward County proposes to use a portion of these credits to compensate for direct and secondary wetland impacts that would occur with the construction of Alternative B1c. No FG credits have yet been applied; therefore, all functional gain credits included in Table 4-1 remain available.[8]

As stated in the Draft EIS, Wetland 33 (W-33) is a freshwater wetland dominated by Brazilian Pepper. USACE and SFWMD staff agreed conceptually to the use of out-of-kind mitigation credit at West Lake Park to compensate for impacts to W-33.[9]

The permits for the West Lake Park mitigation project require an individual assessment of each County project involving impacts and a permit modification to the West Lake permits be acquired to apply FG credits to the specific UMAM functional loss scores. Therefore, in the case of wetland impacts resulting from the Proposed Action, environmental resource permit (ERP) applications would be submitted to the SFWMD and USACE along with an application for a West Lake Park permit modification to allocate 6.40 FG credits to compensate for the 16.83 acres of unavoidable direct and secondary impacts to wetlands from construction of Alternative B1c. Mitigation credits would then be assigned to this project upon approval of these applications by the regulatory agencies.

5.0 MITIGATION MONITORING

Monitoring plans for the ecological success of mitigation projects at West Lake Park is provided for in West Lake Park USACE Permit Special Condition 14 and in SFWMD Permit Special Condition 27. According to the permits, mitigation monitoring will take place for five years, with annual reports submitted to the USACE and SFWMD. At the end of the five-year monitoring period there must be 80 percent survival and 80 percent coverage of desirable plant species suitable to the mitigation area, and if this standard is not met, further restoration work will be required. Therefore, the monitoring plan that would be required for offsite compensatory mitigation for the Proposed Action is addressed by the existing West Lake Park special conditions specified in the USACE and SFWMD permits.

6.0 MITIGATION COMPLIANCE SCHEDULE

Table 6-1 provides a proposed compliance schedule for the monitoring plans included in the aforementioned USACE and SFWMD permits for West Lake Park. The original compliance schedule as described in the permits was adjusted based on discussions

[8] Source: January 22, 2008 telephone conference with West Lake Park Manager Pat Young. Information provided by Sandra Walters Consultants, Inc. 2008.

[9] Summary of a September 13, 2006 telephone conference with regulatory agency representatives to develop concurrence on UMAM scores for FLL runway extension EIS provided by Sandra Walters Consultants, Inc. 2006.

Conceptual Wetland Mitigation Plan
Fort Lauderdale-Hollywood International Airport

with Ms. Patricia Young, manager of West Lake Park. Ms. Young informed the FAA that mitigation projects at West Lake Park, in accordance with the USACE and SFWMD permits, are projected to begin in January 2009. [10]

Table 6-1 Proposed Permit Compliance Schedule

Permit Activities	Dates in Permit	Adjusted Dates
Begin Earthwork	6/2005	1/2009
Complete Earthwork	6/2008	1/2012
Begin Planting	7/2008	2/2012
Complete Planting	7/2009	2/2013
Submit Time-Zero Monitoring Report	8/2009	3/2013
Submit First Annual Monitoring Report	9/2010	4/2014
Submit Second Annual Monitoring Report	9/2011	4/2015
Submit Third Annual Monitoring Report	9/2012	4/2016
Submit Fourth Annual Monitoring Report	9/2013	4/2017
Submit Fifth Annual Monitoring Report	9/2014	4/2018

Source: Sandra Walters Consultants, Inc., 2008.

7.0 COMPLETION OF THE FAA EIS PROCESS AND PROPOSED CONSTRUCTION

The FAA anticipates issuing a Final EIS in the summer of 2008 with a Record of Decision later in the fall. The FAA will identify the Preferred Alternative in the Final EIS. Construction activities could begin upon completion of design work with construction occurring through 2012. The projected project opening date is the 2012-2013 timeframe.

[10] Source: January 22, 2008 telephone conference with West Lake Park Manager Pat Young. Information provided by Sandra Walters Consultants, Inc. 2008.

APPENDIX A

Description of the Installation of the Runway Approach Light System for Alternative B1c

Installation of Runway Approach Lights for Expanded Runway 9R

The proposed installation of cables beneath the Dania Cut-Off Canal to support the proposed approach runway lighting system to the west of Runway 9R would be done via horizontal drilling (or other comparable method) and would not penetrate the Dania Cut-Off Canal bottom. Each approach light tower would be connected with a series of electrical cables. The cabling would be encased in conduit and buried several feet beneath the ground surface. The cabling between light towers would be installed through open trenching in uplands. Horizontal or directional drilling, or similar method, would be used to install the cables under the Dania Cut-Off Canal. This installation method would avoid penetrating the bottom of the canal. Location of the cables in the vicinity of the Dania Cut-Off Canal would be coordinated with the USACE and the SFWMD due to their planned widening and deepening of the Dania Cut-Off Canal noted in the USACE EIS for the *Feasibility Study of Navigational Improvements at Port Everglades, Broward County, Florida*.

The separation between approach light towers would be adjusted to avoid placing the towers within the Dania Cut-Off Canal. In addition, the approach light towers, west of Runway 9R, would be located in uplands and/or attached to the Hilton (formerly Wyndham) Hotel parking garage. Therefore, expansion of Runway 9R would not impact the Dania Cut-Off Canal or W-8 for Alternative B1c.

The approach light system that supports Runway 9R would be accessed via an existing service road along the west bank of the Dania Cut-Off Canal and a newly constructed service road from the shoulder of I-95.

Installation of Runway Approach Lights for Expanded Runway 27L

The top of the approach light towers off the east end of Runway 27L and east of NE 7th Avenue, would be 35 to 40 feet above ground level. Due to their height, each light tower would need to be supported by three concrete foundations, each with a radius of three feet. These foundations would be constructed in a triangular configuration with approximately five feet of separation between the foundation centers. The placement of these light towers would impact W-25a. The installation of these approach light foundations would cause a temporary disturbance to W-25a. The disturbance resulting from construction of the foundations could extend approximately 15 to 30 feet beyond the foundations, due to excavation activities and the operation of construction equipment.

The service road for the approach light towers that support Runway 27L and located to the east of NE 7th Avenue would extend into W-25a. This service road would be equipped with drainage structures to allow tidal flows. The service road is typically constructed of gravel or asphalt and has a width of 12 to 15 feet, with an additional 25-foot diameter turnaround at the end.

Conceptual Wetland Mitigation Plan
Fort Lauderdale-Hollywood International Airport

APPENDIX B

Descriptions of Affected Wetlands in the Detailed Study Area for the B1c Alternative[11]

Wetland 8: Wetland 8 (W-8) is located south of the Dania Cut-Off Canal. W-8 was identified in previous documents as 0.24 acres. W-8 is now identified as being 2.67 acres, based on analysis and field investigations conducted for the Draft EIS. W-8 is a mangrove wetland (FLUCCS Code #612) dominated by white mangrove (*Laguncularia racemosa*) with some black mangroves (*Avicennia germinans*) present. The area immediately fringing the Dania Cut-Off Canal contains red mangroves (Rhizophora mangle). Because of shading from the overstory canopy, there is little or no understory growth typical of mangrove forests.

Since the November 2004 field investigation and calculation of the UMAM score, the mangroves have been trimmed down to reduce the canopy height within the existing approach to Runway 9R/27L. A large stormwater outfall presumably from the Hilton (formerly Wyndham) Hotel and parking garage discharges into the southeast corner of W-8. Tidal inundation of W-8 appears to be neither regular nor complete due to the presence of a partial berm between the wetland and the open waters of the Dania Cut-Off Canal. *A UMAM functional assessment score of 0.567 was calculated for W-8*.

Wetland 17: Wetland 17 (W-17) is located to the east of U.S. Highway 1 on-airport and is bounded by Taylor Road to the south and the airport entrance roadway ramp to the north. W-17 was identified in previous documents as 22.17 acres, but is identified in the Draft EIS as 6.09 acres. This reduction in size is assumed to be the result of impacts from previously permitted projects. W-17 still contains some mangroves within its eastern areas, but is primarily dominated by Brazilian pepper, and is currently severed from any tidal connection.

W-17 has been divided into sub-areas W-17a, W-17b, and W-17c to account for differences in wetland quality. The sizes of these three sub-areas were estimated to be: W-17a = 0.16 acres, W-17b = 2.81 acres and W-17c = 2.67 acres.

Current conditions within the sub-areas reflect a mix of vegetation indicative of a disturbed and hydrologically-poor wetland system. *UMAM functional assessment scores of 0.267, 0.367, and 0.467 were calculated for W-17a, W-17b, and W-17c, respectively*.

Wetland 25: Wetland 25 (W-25), the largest contiguous wetland within the Detailed Study Area, is a mangrove wetland (FLUCCS Code #612) located immediately east of NW 7th Avenue. W-25 is composed mainly of red mangrove, black mangrove, white mangrove, and to a lesser degree, buttonwood (*Conocarpus erectus*).

This wetland is interspersed with areas of Brazilian pepper, Australian pine (*Casuarina equisetifolia*), and other non-native invasive plant species, particularly within its

[11] Note: Descriptions and UMAM scores for affected wetlands are documented in the Final EIS

northwestern reaches and along its periphery. The presence of invasive species is the result of the construction of drainage ditches, soil disruption due to farming, and the diminished reach of tidal flushing toward the northwest corner of W-25. W-25 has been divided into two sub-areas, W-25a and W-25b, to account for the differences in wetland quality that were observed. The acreages for each sub-area were calculated as follows: W-25a = 8.92 acres, W-25b = 22.80 acres. *UMAM functional assessment scores of 0.600 and 0.733 were calculated for W-25a and W-25b, respectively*.

Wetland 33: Wetland 33 (W-33) is located to the east of FLL and south of Taylor Road. W-33 was identified in previous documents as 0.82 acres. Based on field investigations conducted for this Draft EIS, W-33 was expended to 8.59 acres. W-33 is a freshwater wetland, dominated by Brazilian pepper. Due to its low elevation, it receives and retains stormwater runoff from the surrounding areas and now maintains the requisite wetland characteristics of hydrology, soils, and plants. *A UMAM functional assessment score of 0.333 was calculated for W-33*.

Wetland N3: Wetland N3 (W-N3) is located immediately east of W-N2, and is bordered by NE 10th Street on the south, Taylor Road on the northwest, and the taxi parking area on the east. W-N3 is approximately 8.60 acres in size (FLUCCS Code #241 and #422). The majority of W-N3 is used as a tree nursery, but continues to exhibit wetland characteristics and harbor native wetland groundcover. Because of the differences in habitat types present within W-N3, it has been divided into two sub-areas: W-N3a (2.95 acres) and W-N3b (5.65 acres). *UMAM functional assessment scores of 0.300 and 0.400 were calculated for W-N3a and W-N3b, respectively*

ATTACHMENT 3.1

Summary of September 13, 2006 Teleconference with Regulatory Agencies to Develop Concurrence on UMAM Scores

November 15, 2006

M E M O R A N D U M

TO: FLL EIS file

FROM: Steve Carney

THROUGH: Sandra Walters

SUBJECT: Summary of September 13, 2006 telephone conference with regulatory agency representatives to develop concurrence on Uniform Mitigation Assessment Method (UMAM) scores for Ft. Lauderdale International Airport (FLL) runway extension Environmental Impact Statement (EIS)

Call Participants: Leah Oberlin, U.S. Army Corps of Engineers (USACE)
Rob Hopper, South Florida Water Management District (SFWMD)
Leslie Bertolotti, Broward County Environmental Protection Division (BCEPD)
Ron Miedema, Environmental Protection Agency (EPA)
Sandra Walters and Steve Carney, SWC

The following changes were made in the functional loss UMAM scores for the wetlands that could be affected by one or more project alternatives as a result of the interagency teleconference:

Wetland	Current UMAM Score	Changed UMAM Score
W-8	0.567	No change
W-17a	0.250	0.267
W-17b	0.300	0.367
W-17c	0.433	0.467
W-25a	0.500	0.600
W-25b	0.583	0.733
W-33	0.283	0.333
W-N1	0.450	0.267
(Note Wetland W-N1 will NOT be impacted by any alternative and research on stormwater permitting found that it is part of a stormwater system so is not jurisdictional)		
W-N2a	0.333	0.367
W-N2b	0.267	0.300
W-N3a	0.283	0.300
W-N3b	0.417	0.400
W-N5	0.383	0.400

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With few exceptions, all were increased mainly in the category of Location and Landscape Support. W-25 a/b went up in all three categories (Water Environment and Community Structure, as well). W-8 remained unchanged.

Leslie Bertolotti with BCEPD asked to shift the eastern boundary of W-25a slightly to the west, and will provide a sketch showing where she believes it should be. Therefore, this shape file and calculations will be reworked, and W-25b will, consequently, be increased by the equivalent amount.

All agencies agreed they want secondary impacts to W-25 to be considered in the overall impact scoring, as most of the south runway alternatives will be closer to/adjacent to the west side of W-25, causing W-25's current UMAM score to be less in the category of Location and Landscape Support. See SWC thoughts regarding approach to accomplishing this at the bottom of this memo.

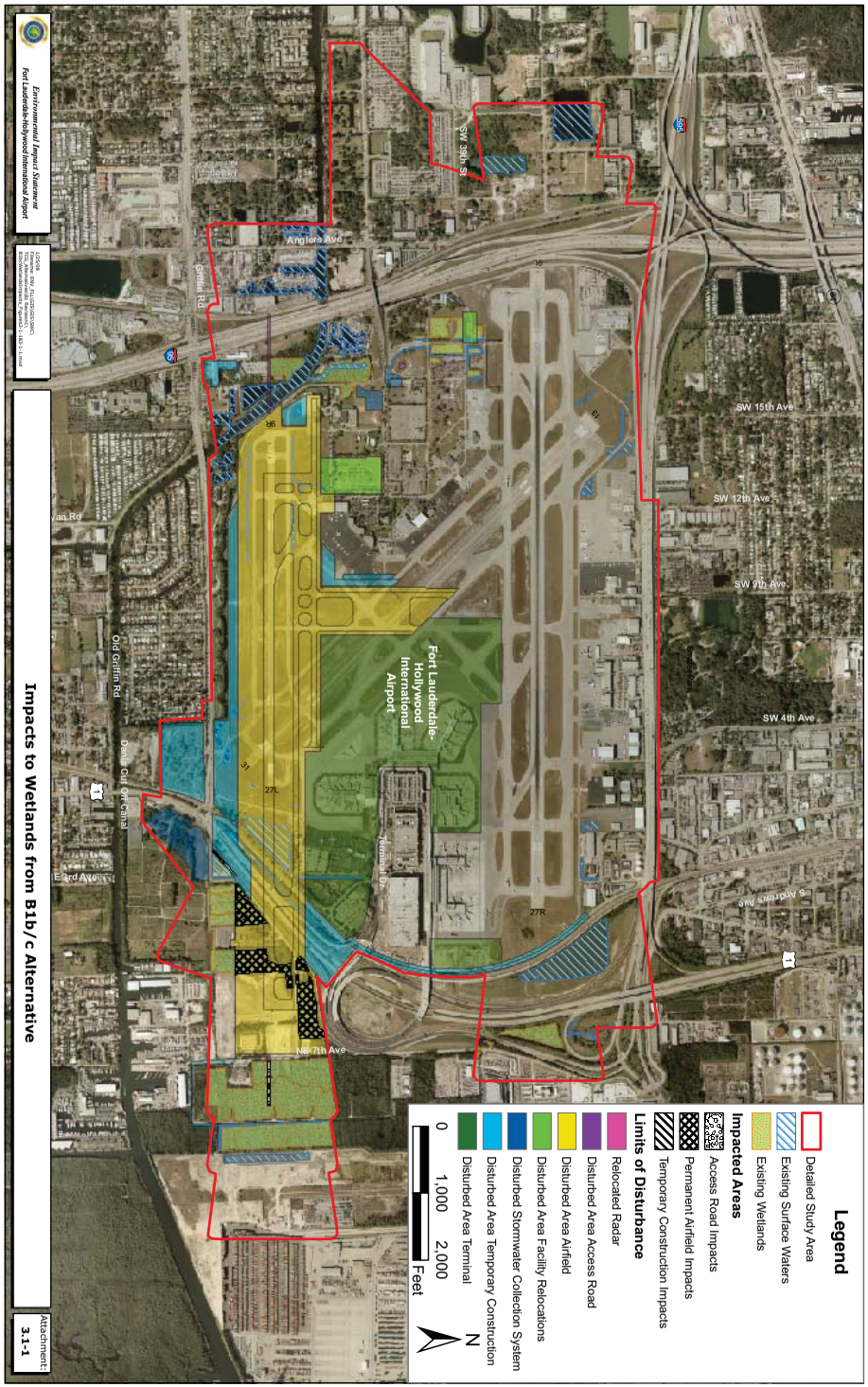
EPA, and then the others, requested that W-N4 be reincluded with its UMAM score because it will see some of the same secondary impacts described above. I suggested that its score would likely be identical to W-25b, and the agencies agreed—therefore, we can presume W-N4's UMAM score to be 0.733, as well.

All agencies wanted to see improvements/enhancements to W-25 included in the project, such as improvements to hydrologic exchange, particularly because of the potential for its lowered UMAM score as a result of the runway being much closer/adjacent to it.

We discussed the need for some out-of-kind mitigation for freshwater wetlands to be compensated with salt water habitat restoration at West Lake Park (i.e., W-33, which is freshwater, B pepper dominated), and a precedent for this kind of out-of-kind mitigation was approved by another FLL permit. Both the USACE and the SFWMD stated that, in conjunction with enhancements to W-25, this did not seem to be a problem.

ATTACHMENT 3.2-1

Secondary Impacts Section 4-2-7 from 2007 SFWMD Basis of Review for Environment Resource Permit Applications Within the South Florida Water Management District



7. any structures located over grassbeds shall be designed so as to allow for the maximum light penetration practicable.

4.2.6 Vertical seawalls

(a) The construction of vertical seawalls in estuaries or lagoons is prohibited unless one of the following conditions exists:

1. the proposed construction is located within a port as defined in Section 315.02, F.S., or Section 403.021, F.S.;

2. the proposed construction is necessary for the creation of a marina, the vertical seawalls are necessary to provide access to watercraft, or the proposed construction is necessary for public facilities;

3. the proposed construction is to be located within an existing manmade canal and the shoreline of such canal is currently occupied in whole or in part by vertical seawalls; or

4. the proposed construction is to be conducted by a public utility when such utility is acting in the performance of its obligation to provide service to the public.

(b) When considering an application for a permit to repair or replace an existing vertical seawall, the District shall generally require such seawall to be faced with riprap material, or to be replaced entirely with riprap material unless a condition specified in subparagraphs 1.-4. above exists. Nothing in this subsection shall be construed to hinder any activity previously exempt or permitted, or those activities permitted pursuant to Chapter 161, F.S.

4.2.7 Secondary Impacts

Pursuant to paragraph 4.1.1(f), an applicant must provide reasonable assurances that a regulated activity will not cause adverse secondary impacts to the water resource, as described in paragraphs (a) through (d), below. Aquatic or wetland dependent fish and wildlife are an integral part of the water resources which the District is authorized to protect under Part IV, Chapter 373, F.S. Those aquatic or wetland dependent species which are listed as threatened, endangered or of special concern are particularly in need of protection.

A proposed system shall be reviewed under this criterion by evaluating the impacts to: wetland and surface water functions identified in subsection 4.2.2; water quality; upland habitat for aquatic or wetland dependent listed species; and historical and archaeological resources. Deminimis or remotely related secondary impacts will not be

considered. Applicants may propose measures such as preservation to prevent secondary impacts. Such preservation shall comply with the land preservation provisions of subsection 4.3.8. If such secondary impacts can not be prevented, the applicant may propose mitigation measures as provided for in subsections 4.3 through 4.3.9. This secondary impact criterion consists of the following four parts:

(a) An applicant shall provide reasonable assurance that the secondary impacts from construction, alteration, and intended or reasonably expected uses of a proposed system will not cause violations of water quality standards or adverse impacts to the functions of wetlands or other surface waters, as described in subsection 4.2.2. Impacts such as boat traffic generated by a proposed dock, boat ramp or dry dock facility, which causes an increased threat of collision with manatees; impacts to wildlife from vehicles using proposed roads in wetlands or surface waters; impacts to water quality associated with the use of septic tanks or propeller dredging by boats and wakes from boats; and impacts associated with docking facilities as described in paragraphs 4.2.4.3(f) and (h), will be considered relative to the specific activities proposed and the potential for such impacts. Impacts of groundwater withdrawals upon wetlands and other surface waters that result from the use of wells permitted pursuant to Chapter 40E-2, F.A.C., shall not be considered under rules adopted pursuant to Part IV, Chapter 373, F.S., since these impacts are considered in the consumptive use permit application process.

Secondary impacts to the habitat functions of wetlands associated with adjacent upland activities will not be considered adverse if buffers, with a minimum width of 15' and an average width of 25', are provided abutting those wetlands that will remain under the permitted design, unless additional measures are needed for protection of wetlands used by listed species for nesting, denning, or critically important feeding habitat. The mere fact that a species is listed does not imply that all of its feeding habitat is critically important. Buffers shall remain in an undisturbed condition, except for drainage features such as spreader swales and discharge structures, provided the construction or use of these features does not adversely impact wetlands. Where an applicant elects not to utilize buffers of the above described dimensions, buffers of different dimensions, measures other than buffers or information may be proposed to provide the required reasonable assurance.

Deminimis or remotely related secondary impacts such as changes in air quality due to increased vehicular traffic associated with road construction will not be considered unacceptable.

(b) An applicant shall provide reasonable assurance that the construction, alteration, and intended or reasonably expected uses of a system will not

adversely impact the ecological value of uplands to aquatic or wetland dependent listed animal species for enabling existing nesting or denning by these species, but not including:

1. areas needed for foraging; or

2. wildlife corridors, except for those limited areas of uplands necessary for ingress and egress to the nest or den site from the wetlands or other surface water;

Table 4.2.7-1 identifies those aquatic or wetland dependent listed species that use upland habitats for nesting or denning.

For those aquatic or wetland dependent listed animal species for which habitat management guidelines have been developed by the U.S. Fish and Wildlife Service (USFWS) or the Florida Game and Fresh Water Fish Commission (FGFWFC), compliance with these guidelines will provide reasonable assurance that the proposed system will not adversely impact upland habitat functions described in paragraph (b). For those aquatic or wetland dependent listed animal species for which habitat management guidelines have not been developed or in cases where an applicant does not propose to use USFWS or FGFWFC habitat management guidelines, the applicant may propose measures to mitigate adverse impacts to upland habitat functions described in paragraph (b), provided to aquatic or wetland dependent listed animal species.

(c) In addition to evaluating the impacts in the area of any dredging and filling in, on, or over wetlands or other surface waters, and as part of the balancing review under subsection 4.2.3, the District will consider any other relevant activities that are very closely linked and causally related to any proposed dredging or filling which will cause impacts to significant historical and archaeological resources.

(d) An applicant shall provide reasonable assurance that the following future activities will not result in water quality violations or adverse impacts to the functions of wetlands and other surface waters as described in subsection 4.2.2.:

1. additional phases or expansion of the proposed system for which plans have been submitted to the District or other governmental agencies; and

2. on-site and off-site activities regulated under Part IV, Chapter 373, F.S., or activities described in section 403.813(2), F.S., that are very closely linked and causally related to the proposed system.

As part of this review, the District will also consider the impacts of the intended or reasonably expected uses of the future activities on water quality and wetland and other surface water functions.

In conducting the analysis under paragraph (d)2., above, the District will consider those future projects or activities which would not occur but for the proposed system, including where the proposed system would be considered a waste of resources should the future project or activities not be permitted.

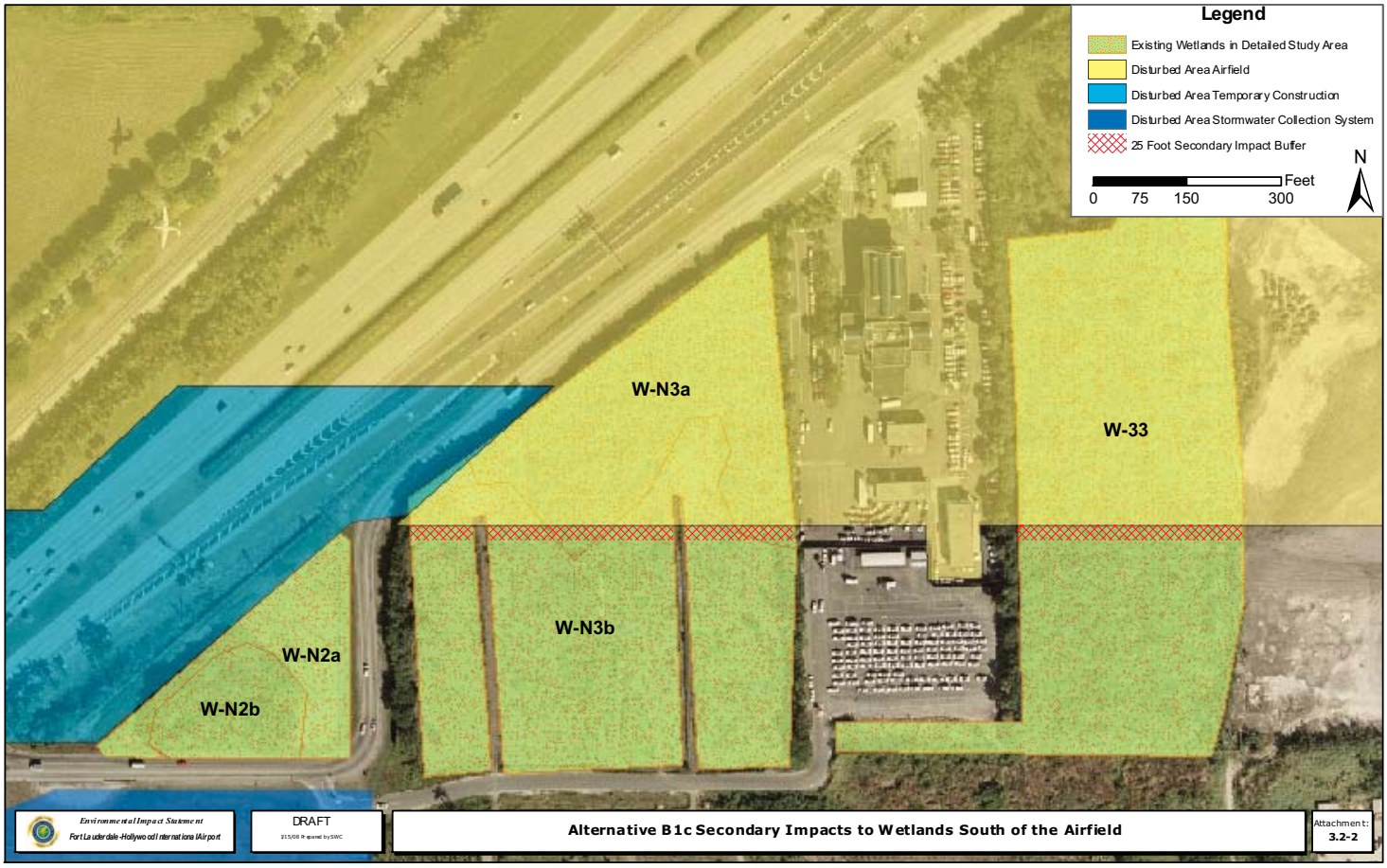
Where practicable, proposed systems shall be designed in a fashion which does not necessitate future impacts to wetland and other surface water functions. If future phases or project expansion have the potential to cause adverse secondary impacts, applicants must provide sufficient conceptual design information to provide reasonable assurance that these impacts can be successfully eliminated or offset.

System expansions and future system phases will be considered in the secondary impact analysis, and if the District determines that future phases of a system involve impacts that appear not to meet permitting criteria, the current application shall be denied unless the applicant can provide reasonable assurance that those future phases can comply with permitting criteria. One way for applicants to establish that future phases or system expansions do not have adverse secondary impacts is for the applicant to obtain a conceptual approval permit for the entire project.

4.2.8 Cumulative Impacts

Pursuant to paragraph 4.1.1(g), an applicant must provide reasonable assurances that a regulated activity will not cause unacceptable cumulative impacts upon wetlands and other surface waters within the same drainage basin as the regulated activity for which a permit is sought. The impact on wetlands and other surface waters shall be reviewed by evaluating the impacts to water quality as set forth in subsection 4.1.1(c) and by evaluating the impacts to functions identified in subsection 4.2.2. If an applicant proposes to mitigate these adverse impacts within the same drainage basin as the impacts, and if the mitigation fully offsets these impacts, the District will consider the regulated activity to have no unacceptable cumulative impacts upon wetlands and other surface water, and consequently the condition for issuance in section 4.1.1(g), will be satisfied. For purposes of performing a cumulative impact analysis, drainage basins shall be those depicted on Figure 4.4-1.

When adverse impacts to water quality or adverse impacts to the functions of wetlands and other surface water, as referenced in the paragraph above, are not fully offset within the same drainage basin as the impacts, then an applicant must provide reasonable assurance that the proposed system, when considered with the following activities, will not result in unacceptable cumulative impacts to water quality or the functions of wetlands and other surface waters, within the same drainage basin:


Legend
Existing Wetlands in Detailed Study Area
Disturbed Area Airfield
Disturbed Area Temporary Construction
Disturbed Area Stormwater Collection System
25 Foot Secondary Impact Buffer
N
Feet
0 75 150 300
W-N3a
W-33
W-N3b
W-N2a
W-N2b
Environmental Impact Statement
Fort Lauderdale-Hollywood International Airport
DRAFT
Alternative B1c Secondary Impacts to Wetlands South of the Airfield
Attachment:
3.2-2


Legend
Existing Wetlands in Detailed Study Area
Disturbed Area Airfield
Disturbed Area Access Road
25 Foot Secondary Impact Buffer
N
Feet
0 50 100 200
W-17c
W-25a
W-25b
W-N4
NE 7th Ave
Environmental Impact Statement
Fort Lauderdale-Hollywood International Airport
DRAFT
Alternative B1c Secondary Impacts to Wetlands East of the Airfield
Attachment:
3.2-3

DRAFT

Conceptual Wetland Mitigation Plan
Fort Lauderdale-Hollywood International Airport

ATTACHMENT 3.3-1

Direct Impact UMAM Wetland Score Sheets for Alternative B1c

PART I – Qualitative Description
(See Section 62-345.400, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
Ft Lauderdale-Hollywood International Airport (FLL)	Not Applicable	**W-17a**

FLUCCs code	Further classification (optional)	Impact or Mitigation Site?	Impact Area Size
619/612	Exotic Wetland Hardwood/Mangrove Forest	Direct Impact	**0.61 acres**

Basin/Watershed Name/Number	Affected Waterbody (Class)	Special Classification (i.e.OFW, AP, other local/state/federal designation of importance)
Not Applicable	Class III	None

Geographic relationship to and hydrologic connection with wetlands, other surface water, uplands

This assessment area (AA) is one of many fragmented former "mangrove" wetlands that still remain in the project area. It lies contiguous to other small, fragmented mangrove wetlands. It appears to be regionally isolated from significant wildlife corridors due to FLL and US-1 to the west, and Port Everglades to the east. Roadways, and lack of surface water connections have made this wetland hydrologically isolated.

Assessment area description

A triangular assessment area, approximately 0.61 acres in size retaining very few wetland characters. AA will be completely impacted by construction of the south runway. No significant wildlife usage was noted during the site visit. Ponding or open water areas (fresh water) limited to ditches and deep depressions. Prior to the mid-1980s area was in agriculture with disturbed soils, furrows, etc. Assessment area specifics are provided on the attached UMAM Part II.

Significant nearby features	Uniqueness (considering the relative rarity in relation to the regional landscape.)
No biologically significant upland features or significant wetland areas have been identified nearby the property - all current wetlands previously disturbed by agriculture and drainage ditches. Lies in a heavily urbanized area.	Not Applicable

Functions	Mitigation for previous permit/other historic use
This assessment area functions primarily for water storage/flow attenuation. Most wetland wildlife functions were not observed at the time of the field visit.	Not Applicable

Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected to be found)	Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area)
Wildlife use minimal because site is isolated/severed from any significant regional wildlife corridor. Movement between surrounding parcels possible but species limited by the various disturbed or exotic impacted ecosystems provided.	No anticipated utilization by Listed Species due to the type of habitats offered and land use practices. Regionally, the surrounding areas have become increasing developed with roads, highways, existing airport, existing seaport, and other new development.

Observed Evidence of Wildlife Utilization (List species directly observed, or other signs such as tracks, droppings, casings, nests, etc.):

During the site visit, no direct or indirect evidence of wildlife use was observed. Wading birds or other wetland wildlife were not observed; no prey base or evidence thereof was observed at the time of the field visit; dense canopy limits wading bird access. Dense canopy diminishes potential AA use for feeding by wading birds and raptors.

Additional relevant factors:

This wetland area has become hydrologically isolated; connection to W-25 to the east no longer exists. US-1 and FLL flanks the entire subject area to the west. To the north is a heavily impacted area with the relatively recent construction of the US-1 interchange accessing FLL. To the east lie NE 7th Avenue and W-25. To the south lies Taylor Road. These land uses essentially severe any wildlife corridors and reduce the probability that this site will receive meaningful wildlife use; species limited by the various disturbed or exotic impacted ecosystem available. W-17a is a sub-assessment area of former W-17. W-17is poor in quality, barely jurisdictional.

Assessment conducted by:	Assessment date(s):
Stephen W. Carney	January 20, 2005 & May 19, 2006
Finalized by:	**Date(s) finalized:**
Michael J. Tust	January 15, 2008

Form 62-345.900(1), F.A.C. [effective date]

PART II – Quantification of Assessment Area (impact or mitigation)
(See Sections 62-345.500 and .600, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
Ft Lauderdale-Hollywood International Airport (FLL)	Not Applicable	**W-17a**
Impact or Mitigation	**Assessment conducted by:**	**Assessment date:**
Direct Impact	Stephen W. Carney	January 20, 2005 & May 19, 2006
	Finalized by:	**Date finalized:**
	Michael J. Tust	January 15, 2008

Scoring Guidance	Optimal (10)	Moderate(7)	Minimal (4)	Not Present (0)
The scoring of each indicator is based on what would be suitable for the type of wetland or surface water assessed	Condition is optimal and fully supports wetland/surface water functions	Condition is less than optimal, but sufficient to maintain most wetland/surface waterfunctions	Minimal level of support of wetland/surface water functions	Condition is insufficient to provide wetland/surface water functions

	w/o pres or current	with	
.500(6)(a) Location and Landscape Support	3	0	Extremely limited support for many wetland wildlife species provided in the immediate surroundings. Extensive invasive pest plant cover (B. pepper) to the east. Immediately flanked by US-1 to the west and the FLL interchange to the north; fill pad and structure to the east further isolates this AA -- all create a significant deterrent for the movement of desireable wetland wildlife with the exception of avifauna. Both upstream and downstream hydrologic connectivity is substantially limited - no connection exists to tidally influenced mangroves or other wetlands. Its relative proximity to W-33 (south of Taylor Road), also a poor quality wetland, does not provide a functional landscape support component.
.500(6)(b)Water Environment (n/a for uplands)	2	0	No standing water present at the time of site visit other than in the remnant ditch at the south and within depressions created by downed trees. No surface water flows beyond the limits of AA possible -- drainage ditch culverts collapsed, and isolated on all sides by man-made uplands. No rafting of debris to indicate some episodic flooding. No evidence of extended hydroperiod. Presence of homeless camp indication of drier conditions. Water quality is presumed moderate - good, although possible runoff from surrounding roads may degrade water in AA with time. Further reductions in AA hydrology anticipated due to surrounding land use and long-term hydrologic isolation.
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community	3	0	Brazilian pepper occurred in moderation. Norfolk pine and date palms present -- assumed to be an artifact of past silviculture. Understory fairly sparse with the presence of leather fern and shield fern noted -- both obligate wetland species. Long term viability of community structure is considered poor due to presence of exotic pest plants and disrupted hydrology. Some vertical structure offered for roosting and nesting along the edges of the AA but none observed.

Score = sum of above scores/30 (if uplands, divide by 20)	current or w/o pres	with
	0.267	0

If preservation as mitigation,
Preservation adjustment factor = NA
Adjusted mitigation delta = NA

For impact assessment areas
FL = delta x impact acres = 0.16

Delta = [with-current]
0.267

If mitigation
Time lag (t-factor) = NA
Risk factor = NA

For mitigation assessment areas
RFG = delta/(t-factor x risk) = NA

Form 62-345.900(2), F.A.C. [effective date]

PART I – Qualitative Description
(See Section 62-345.400, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
Ft Lauderdale-Hollywood International Airport (FLL)	Not Applicable	**W-17b**

FLUCCs code	Further classification (optional)	Impact or Mitigation Site?	Impact Area Size
619/612	Exotic Wetland Hardwood/Mangrove Forest	Direct Impact	**2.81 acres**

Basin/Watershed Name/Number	Affected Waterbody (Class)	Special Classification (i.e.OFW, AP, other local/state/federal designation of importance)
Not Applicable	Class III	None

Geographic relationship to and hydrologic connection with wetlands, other surface water, uplands

This assessment area (AA) is one of many fragmented former "mangrove" wetlands that still remain in the project area. It lies contiguous to other small, fragmented mangrove/exotic hardwood wetlands. It appears to be regionally isolated from significant wildlife corridors due to FLL and US-1 to the west, and Port Everglades to the east. Roadways, and lack of surface water connections have made this wetland hydrologically isolated.

Assessment area description

A somewhat rectangular assessment area, approximately 2.81 acres in size that is predominated by Brazilian pepper, an exotic pest plant. AA will be completely impacted from construction of the south runway. No significant wildlife usage was noted during the site visit. Ponding or open water areas (fresh water) limited to ditch along Taylor Road. Prior to the mid-1980s area was used in agriculture with disturbed soils, furrows, etc.
Assessment area specifics are provided on the attached UMAM Part II.

Significant nearby features	Uniqueness (considering the relative rarity in relation to the regional landscape.)
No biologically significant upland features or significant wetland areas have been identified nearby the property - all current wetlands previously disturbed by agriculture and drainage ditches. Lies in a heavily urbanized area.	Not Applicable

Functions	Mitigation for previous permit/other historic use
This assessment area functions primarily for water storage/flow attenuation. Most wetland wildlife functions were not observed at the time of the field visit.	Not Applicable

Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected to be found)	Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area)
Wildlife use minimal because site is isolated/severed from any significant regional wildlife corridor. Movement between surrounding parcels possible but species limited by the various disturbed or exotic impacted ecosystems provided.	No anticipated utilization by Listed Species due to the type of habitats offered and land use practices. Regionally, the surrounding areas have become increasing developed with roads, highways, existing airport, existing seaport, and other new development.

Observed Evidence of Wildlife Utilization (List species directly observed, or other signs such as tracks, droppings, casings, nests, etc.):

During the site visit, no direct or indirect evidence of wildlife use was observed. Wading birds or other wetland wildlife were not observed; no prey base or evidence thereof was observed at the time of the field visit; dense canopy limits wading bird access. Dense canopy diminishes potential AA use for feeding by wading birds and raptors; species limited by the various disturbed or exotic impacted ecosystem available -- raccoons, black rats likely inhabitants.

Additional relevant factors:

This wetland area has become hydrologically isolated; connection to W-25 to the east no longer exists. US-1 and FLL flanks the entire subject area to the west. To the north is a heavily impacted area with the relatively recent construction of the US-1 interchange accessing FLL. To the east lie NE 7th Avenue and W-25. To the south lies Taylor Road. These land uses essentially severe any wildlife corridors and reduce the probability that this site will receive meaningful wildlife use; species limited by the various disturbed or exotic impacted ecosystem available. W-17b is a sub-assessment area of former W-17. It is predominated by dense Brazilian pepper with little or no understory.

Assessment conducted by:	Assessment date(s):
Stephen W. Carney	January 20, 2005
Finalized by:	**Date(s) finalized:**
Michael J. Tust	January 15, 2008

PART II – Quantification of Assessment Area (impact or mitigation)
(See Sections 62-345.500 and .600, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
Ft Lauderdale-Hollywood International Airport (FLL)	Not Applicable	**W-17b**
Impact or Mitigation	**Assessment conducted by:**	**Assessment date:**
Direct Impact	Stephen W. Carney	January 20, 2005
	Finalized by:	**Date finalized:**
	Michael J. Tust	January 15, 2008

Scoring Guidance	Optimal (10)	Moderate(7)	Minimal (4)	Not Present (0)
The scoring of each indicator is based on what would be suitable for the type of wetland or surface water assessed	Condition is optimal and fully supports wetland/surface water functions	Condition is less than optimal, but sufficient to maintain most wetland/surface waterfunctions	Minimal level of support of wetland/surface water functions	Condition is insufficient to provide wetland/surface water functions

	w/o pres or current	with	
.500(6)(a) Location and Landscape Support	4	0	Limited support for many wetland wildlife species provided in the immediate surroundings. Extensive invasive pest plant cover (B. pepper) over the majority of the assessment area (AA). Presence of major road systems and urbanization surrounding the assessment area are deterrents and greatly limit the movement of desireable wetland wildlife with the exception of avifauna. Both upstream and downstream hydrologic connectivity is substantially limited - no connection exists to tidally influenced mangroves.
.500(6)(b)Water Environment (n/a for uplands)	4	0	No standing water present at the time of site visit. No surface water flows beyond the limits of AA possible -- drainage ditch culverts collapsed, and presence of berm to the south. Mucky soils are present -- some rafting of debris and damps soils indicate some episodic flooding. No evidence of extended hydroperiod. Water quality is presumed moderate - good, although possible runoff from surrounding roads may degrade water in AA with time. Further reductions in AA hydrology anticipated due to surrounding land use and long-term hydrologic isolation. Ditch culverts fringing the south edge of the AA blocked or collapsed.
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community	3	0	AA predominated by Brazilian pepper with little or no understory. Long term viability of site is poor due to heavy canopy shading and allelopathy. Some vertical structure offered for roosting and nesting along the edges of the AA but none observed.

Score = sum of above scores/30 (if uplands, divide by 20)	current or w/o pres	with
	0.367	0

If preservation as mitigation,
Preservation adjustment factor = NA
Adjusted mitigation delta = NA

For impact assessment areas
FL = delta x impact acres = 1.03

Delta = [with-current]
0.367

If mitigation
Time lag (t-factor) = NA
Risk factor = NA

For mitigation assessment areas
RFG = delta/(t-factor x risk) = NA

PART I – Qualitative Description
(See Section 62-345.400, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
CEMEX Florida City Quarry Access Road	Not Applicable	**W-17c**

FLUCCs code	Further classification (optional)	Impact or Mitigation Site?	Impact Area Size
619/612	Exotic Wetland Hardwood/Mangrove Forest	Direct Impact	**2.67 acres**

Basin/Watershed Name/Number	Affected Waterbody (Class)	Special Classification (i.e.OFW, AP, other local/state/federal designation of importance)
Not Applicable	Class III	None

Geographic relationship to and hydrologic connection with wetlands, other surface water, uplands

This assessment area (AA) lies contiguous to other small, fragmented mangrove wetlands. It appears to be regionally isolated from significant wildlife corridors due to FLL and US1 to the west, and Port Everglades to the east. Roadways, and loss of surface water connections have made this wetland hydrologically isolated.

Assessment area description

A somewhat square assessment area, approximately 2.67 acres in size that is predominated by an artificial open water area fringed by mangrove. AA will be completely impacted from construction of the south runway. No significant wildlife usage was noted during the site visit. Pond or open water areas around prop roots (fresh water- duckweed) with forage fish noted . Prior to the mid-1980s area was used in agriculture with disturbed soils, furrows, etc. Assessment area specifics are provided on the attached UMAM Part II.

Significant nearby features	Uniqueness (considering the relative rarity in relation to the regional landscape.)
No biologically significant upland features or significant wetland areas have been identified nearby the property. Open water feature of this AA most significant for the immediate area - all current wetlands previously disturbed by agriculture and drainage ditches. Lies in a heavily urbanized area. area.	Not Applicable

Functions	Mitigation for previous permit/other historic use
This assessment area functions primarily for water storage/flow attenuation. Most wetland wildlife functions (e.g., wading birds foraging) were not observed at the time of the field visit; but prey base (forage fish) observed within this AA.	Not Applicable

Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected to be found)	Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area)
Wildlife use minimal because site is isolated/severed from any significant regional wildlife corridor. Movement between surrounding parcels possible but species limited by the various disturbed or exotic impacted ecosystems surrounding the area. Open water area provides possible foraging habitat for wading birds.	Limited utilization by Listed Species due to the type of habitats offered and land use practices. Regionally, the surrounding areas have become increasing developed with roads, highways, existing airport, existing seaport, and other new development.

Observed Evidence of Wildlife Utilization (List species directly observed, or other signs such as tracks, droppings, casings, nests, etc.):

During the site visit, no direct or indirect evidence of wildlife use was observed. Wading birds or other wetland wildlife were not observed; however, a potential prey base (sheepshead minnow) was observed at the time of the field visit; dense canopy limits wading bird access at the periphery, but open water areas may offer aerial access for wetland dependent birds looking for forage.

Additional relevant factors:

This wetland area has become hydrologically isolated; connection to W-25 to the east no longer exists. US-1 and FLL flanks the entire subject area to the west. To the north is a heavily impacted area with the relatively recent construction of the US-1 interchange accessing FLL. To the east lie NE 7th Avenue and W-25. To the south lies Taylor Road. These land uses essentially severe any wildlife corridors and reduce the probability that this site will receive meaningful wildlife use. W-17c is a sub-assessment area of former W-17.

Assessment conducted by:	Assessment date(s):
Stephen W. Carney	January 20, 2005
Finalized by:	**Date(s) finalized:**
Michael J. Tust	January 15, 2008

PART II – Quantification of Assessment Area (impact or mitigation)
(See Sections 62-345.500 and .600, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
Ft Lauderdale-Hollywood International Airport (FLL)	Not Applicable	**W-17c**
Impact or Mitigation	**Assessment conducted by:**	**Assessment date:**
Direct Impact	Stephen W. Carney	January 20, 2005
	Finalized by:	**Date finalized:**
	Michael J. Tust	January 15, 2008

Scoring Guidance	Optimal (10)	Moderate(7)	Minimal (4)	Not Present (0)
The scoring of each indicator is based on what would be suitable for the type of wetland or surface water assessed	Condition is optimal and fully supports wetland/surface water functions	Condition is less than optimal, but sufficient to maintain most wetland/surface waterfunctions	Minimal level of support of wetland/surface water functions	Condition is insufficient to provide wetland/surface water functions

	w/o pres or current	with	
.500(6)(a) Location and Landscape Support	4	0	Minimal support for many wetland wildlife species provided in the immediate surroundings. Extensive invasive pes plant cover intergrading from the West and periphery. Presence of major road systems and urbanization surrounding the assessment area [AA] are deterrents and greatly limit the movement of desireable wetland wildlife with the exception of avifauna. Both upstream and downstream hydrologic connectivity is substantially limited - no connection exists to tidally influenced mangroves. Presence of minnows within the AA provides opportunity for foraging by birds.
.500(6)(b)Water Environment (n/a for uplands)	5	0	Water levels appear artificially high likely due to past land use practices - open ponded area containing freshwater fringed by mangroves - disturbed soils fringe the open water feature. Presence of duckweed and cat-tail indicate a freshwater environment not typical of mangrove habitat. No surface water flows beyond the limits of AA possible -- drainage ditch culverts collapsed, and presence of berm to the south -- precluding the active passage of fish and passive passage of plankton. Mucky soils are present. Water quality is presumed moderate - good, although possible runoff from surrounding roads may degrade water in AA with time. Further reductions in AA hydrology anticipated due to surrounding land use and hydrologic isolation.
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community	5	0	Mangrove species (red, white, and black) associated with open water feature. Brazilian pepper intruding from the periphery, particularly from the west. Cat-tail and duckweed observed within the open water area indicative of freshwater ecosystem. Little understory associated with mangroves. Primrose and salt bush observed near the fringes to the northeast indicative of soil disturbance. Poor long-term viability, with time the AA will likely be overtaken with B. pepper as it encroaches from the periphery. With time the open water area may be further reduced as it is further colonized by cat-tail.

Score = sum of above scores/30 (if uplands, divide by 20)	current or w/o pres	with
	0.467	0

If preservation as mitigation,
Preservation adjustment factor = NA
Adjusted mitigation delta = NA

For impact assessment areas
FL = delta x impact acres = 1.25

Delta = [with-current]
0.467

If mitigation
Time lag (t-factor) = NA
Risk factor = NA

For mitigation assessment areas
RFG = delta/(t-factor x risk) = NA

PART I – Qualitative Description
(See Section 62-345.400, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
Ft Lauderdale-Hollywood International Airport (FLL)	Not Applicable	**W-25a**

FLUCCs code	Further classification (optional)	Impact or Mitigation Site?	Impact Area Size
612	Mangrove Forest	Direct Impact	**0.20 acres**

Basin/Watershed Name/Number	Affected Waterbody (Class)	Special Classification (i.e.OFW, AP, other local/state/federal designation of importance)
Not Applicable	Class III	None

Geographic relationship to and hydrologic connection with wetlands, other surface water, uplands

This assessment area (AA) a large relatively isolated mangrove wetland that lies contiguous to other similar mangrove wetlands. It appears to be regionally isolated from significant wildlife corridors due to FLL facilities and roads to the west, and Port Everglades to the east. It is hydrologically connected to the Dania Cut-off Canal by a series of canals, culverts, and ditches.

Assessment area description

A somewhat triangular assessment area, with a total acreage of 8.92 acres. Of this, 0.20 acres will be directly impacted by the construction of approach lights and associated access road. This AA was separated from W-25b to the south due to observed differences in vegetation signature. Little wildlife usage was noted within this AA during the site visit. Prior to the mid-1980s, area was used in agriculture with disturbed soils, furrows, drainage ditches, etc. Assessment area specifics are provided on the attached UMAM Part II.

Significant nearby features	Uniqueness (considering the relative rarity in relation to the regional landscape.)
No biologically significant upland features or significant wetland areas have been identified nearby the property. AA intergrades into W-25b to the south and is connected to tidal flows by a series of culverts running from a canal to the east - area previously disturbed by agriculture.	Not Applicable
Functions	**Mitigation for previous permit/other historic use**
This assessment area functions primarily for water storage/flow attenuation. Some wetland wildlife functions (e.g., wading birds foraging) were not observed at the time of the field visit; but prey base (forage fish) observed within this AA; less than found in W-25b however.	Not Applicable
Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected to be found)	Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area)
Wading bird use appears moderate due to dense canopy. While at upper reaches of daily tidal extent, AA provides opportunity for marine/estuarine fish, crustaceans, and plankton.	Limited utilization by Listed Species due to the type of habitats offered and land use practices. Regionally, the surrounding areas have become increasing developed with roads, highways, existing airport, existing seaport, and other new development.

Observed Evidence of Wildlife Utilization (List species directly observed, or other signs such as tracks, droppings, casings, nests, etc.):

During the site visit, use by small forage fish was noted. Wading birds or other wetland wildife were not observed likely due to dense canopy, but might use this AA periodically where conditions are favorable. Red-winged black birds were noted singing within this AA.

Additional relevant factors:

This wetland area has remained hydrologically connected to diurnal tides due to placement of a series of culverts along the FPL access road. This AA is considered slightly less functional relative to W-25b to the south because it appears to lie at the upper limit of tidal exchange, appears to be more disturbed, and has a greater proportion of exotic pest plants within is interior. The vegetative signature in the field and denoted on the aerial lead to the separation of this AA from W-25b.

Assessment conducted by:	Assessment date(s):
Stephen W. Carney	November 15/16, 2004 & May 19, 2006
Finalized by:	**Date(s) Finalized:**
Michael J. Tust	January 15, 2008

Form 62-345.900(1), F.A.C. [effective date]

PART II – Quantification of Assessment Area (impact or mitigation)
(See Sections 62-345.500 and .600, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
Ft Lauderdale-Hollywood International Airport (FLL)	Not Applicable	**W-25a**
Impact or Mitigation	**Assessment conducted by:**	**Assessment date:**
Direct Impact	Stephen W. Carney	November 15/16, 2004 & May 19, 2006
	Finalized by:	**Date finalized:**
	Michael J. Tust	January 15, 2008

Scoring Guidance	Optimal (10)	Moderate(7)	Minimal (4)	Not Present (0)
The scoring of each indicator is based on what would be suitable for the type of wetland or surface water assessed	Condition is optimal and fully supports wetland/surface water functions	Condition is less than optimal, but sufficient to maintain most wetland/surface waterfunctions	Minimal level of support of wetland/surface water functions	Condition is insufficient to provide wetland/surface water functions

	w/o pres or current	with	
.500(6)(a) Location and Landscape Support	6	0	Moderate support for many wetland wildlife species provided in the immediate surroundings. Regionally, assessment area (AA) is isolated and highly compartmentalized due the presence of FLL, Port Everglades, and similar urban infrastructure. Invasive pest plant cover intergrading from the western periphery and within this AA. Tidally influenced (artificial) mangrove wetlands contiguous to north (W-25b) and beyond the FPL transmission corridor to the east (W-N4) allowing for some movement and exchange of aquatic fauna. Both upstream and downstream hydrologic connectivity is provided with flows/flushing less pronounced farther north in the AA. Its location from Dania Cut-off Canal reduces the landscape support relative to W-25b
.500(6)(b)Water Environment (n/a for uplands)	6	0	Water levels and tidal flushing dependent on culverts (artificial system with some reduced flows, however allows fo the active passage of fish and passive passage of plankton among others). Surface water flows extend beyond the limits of AA to north but diminishes with distance. Mucky soils are present. Remnant drainage ditchs affect surface water sheet flow. Areas of soil disturbance/mounds affect surface water flow. Water quality is presumed moderate - good, although possible runoff from surrounding roads may degrade water in AA with time.
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community	6	0	Mangrove species (red, white, and black) and buttonwood characterize AA. Brazilian pepper and Australian pine intruding from the periphery, particularly from the west and provide for a change in the vegetation signature - most appear associated with noted soil disturbance. Little understory associated with mangroves; areas of B. pepper more brushy. Other non-native species noted at the western extreme of the AA -- bowstring hemp, date palms etc. that may have been the result of past disposal. Reduced long-term viability relative to W-25b, with further colonization of B. pepper as the salinity regime allows.

Score = sum of above scores/30 (if uplands, divide by 20)	current or w/o pres	with
	0.600	0

If preservation as mitigation,
Preservation adjustment factor = NA
Adjusted mitigation delta = NA

For impact assessment areas
FL = delta x impact acres = 0.12

Delta = [with-current]
0.600

If mitigation
Time lag (t-factor) = NA
Risk factor = NA

For mitigation assessment areas
RFG = delta/(t-factor x risk) = NA

Form 62-345.900(2), F.A.C. [effective date]

PART I – Qualitative Description
(See Section 62-345.400, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
Ft Lauderdale-Hollywood International Airport (FLL)	Not Applicable	**W-25b**

FLUCCs code	Further classification (optional)	Impact or Mitigation Site?	Impact Area Size
612	Mangrove Forest	Direct Impact	**0.18 acres**

Basin/Watershed Name/Number	Affected Waterbody (Class)	Special Classification (i.e.OFW, AP, other local/state/federal designation of importance)
Not Applicable	Class III	None

Geographic relationship to and hydrologic connection with wetlands, other surface water, uplands

This assessment area (AA) is a large relatively isolated mangrove wetland that lies contiguous to other similar mangrove wetlands. It appears to be regionally isolated from significant wildlife corridors due to FLL facilities and roads to the west, and Port Everglades to the east. It is hydrologically connected to the Dania Cut-off Canal by a series of canals, culverts, and ditches.

Assessment area description

A somewhat triangular assessment area, with a total acreage of 22.80 acres. Of this 0.18 acres will be directly impacted by the construction of approach lights and associated access road. This AA was separated from W-25a to the north due to observed differences in vegetation signature. Some wildlife usage (crabs, fish, some birds) was noted within this AA during the site visit. Prior to the mid-1980s area was used in agriculture with disturbed soils, furrows, drainage ditches, etc. Assessment area specifics are provided on the attached UMAM Part II.

Significant nearby features	Uniqueness (considering the relative rarity in relation to the regional landscape.)
No biologically significant upland features or significant wetland areas have been identified nearby the property. AA intergrades into W-25a to the north and is connected to tidal flows by a series of culverts running from a canal to the east. Area previously disturbed by agriculture.	Not Applicable

Functions	Mitigation for previous permit/other historic use
This AA experiences daily tidal inundation and provides refugia for aquatic fauna transported via the culvert system. Some wetland wildlife functions (e.g., wading birds foraging) were not observed at the time of the field visit; but prey base (forage fish, mullet, crabs) observed within this AA.	Not Applicable

Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected to be found)	Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area)
Wading bird use appears moderate due to dense canopy. While at upper reaches of daily tidal extent, AA provides opportunity for marine/estuarine fish, crustaceans, and plankton -- mullet, killifish, fiddler crabs and some wading birds can be expected, particularly at its edges.	Limited utilization by Listed Species due to the type of habitats offered and land use practices. Regionally, the surrounding areas have become increasing developed with roads, highways, existing airport, existing seaport, and other new development.

Observed Evidence of Wildlife Utilization (List species directly observed, or other signs such as tracks, droppings, casings, nests, etc.):

During the site visit, use by small forage fish (e.g., Fundulus Cyprinodon) were noted. A mangrove water snake was observed within a remnant drainage ditch. Wading birds or other wetland wildlife were not observed likely due to dense canopy, but might use this AA periodically where conditions are favorable. Red-winged black birds were noted singing within this AA.

Additional relevant factors:

This wetland area has remained hydrologically connected to diurnal tides due to placement of a series of culverts along the FPL access road. This AA is considered slightly more functional relative to W-25a to the north because it appears to subject to a better tidal exchange, appears to be more less disturbed within, and has a smaller proportion of exotic pest plants within is interior. The vegetative signature in the field and denoted on the aerial lead to the separation of this AA from W-25a.

Assessment conducted by:	Assessment date(s):
Stephen W. Carney	November 15/16, 2004 & May 19, 2006
Finalized by:	**Date(s) finalized:**
Michael J. Tust	January 15, 2008

Form 62-345.900(1), F.A.C. [effective date]

PART II – Quantification of Assessment Area (impact or mitigation)
(See Sections 62-345.500 and .600, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
Ft Lauderdale-Hollywood International Airport (FLL)	Not Applicable	**W-25b**
Impact or Mitigation	**Assessment conducted by:**	**Assessment date:**
Direct Impact	Stephen W. Carney	November 15/16, 2004 & May 19, 2006
	Finalized by:	**Date finalized:**
	Michael J. Tust	January 15, 2008

Scoring Guidance	Optimal (10)	Moderate(7)	Minimal (4)	Not Present (0)
The scoring of each indicator is based on what would be suitable for the type of wetland or surface water assessed	Condition is optimal and fully supports wetland/surface water functions	Condition is less than optimal, but sufficient to maintain most wetland/surface waterfunctions	Minimal level of support of wetland/surface water functions	Condition is insufficient to provide wetland/surface water functions

	w/o pres or current	with	
.500(6)(a) Location and Landscape Support	7	0	Moderate support for many wetland wildlife species provided in the immediate surroundings. Regionally, assessment area (AA) is isolated and highly compartmentalized due the presence of FLL, Port Everglades, and similar urban infrastructure. Tidally influenced (artificial) mangrove wetlands contiguous to north (W-25a) and beyond the FPL transmission corridor to the east (W-N4) allowing for some movement and exchange of aquatic fauna -- mullet, killifish, mangrove crabs, fiddler crabs noted. Both upstream and downstream hydrologic connectivity is provided with flows/flushing less pronounced farther north in the AA as evidenced by the change in vegetation in W-25b. Its location from Dania Cut-off Canal slightly increaes the landscape support relative to W-25a.
.500(6)(b)Water Environment (n/a for uplands)	7	0	Water levels and tidal flushing dependent on culverts (artificial system with some reduced flows), however allows for the active passage of fish and passive passage of plankton among others. Surface water flows extends beyond the limits of AA to north into W-25b but diminishes with distance. Mucky soils are present. Remnant drainage ditchs affect surface water sheet flow. Water quality is presumed moderate - good. Water flows, flushing dependen upon culvert system therefore sheetflow not uniform or natural, but is scored slightly higher than W-25a due to better/stronger tidal flushing.
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community	8	0	Mangrove species (red, white, and black) and buttonwood characterize AA. Brazilian pepper and Australian pine intruding from the western periphery, but seem to be limited by tidal flushing and salinity regime. Little understory typical of mangrove communities. Leather fern, sea oxeye daisy in openings at edges of AA.

Score = sum of above scores/30 (if uplands, divide by 20)	current or w/o pres	with
	0.733	0

If preservation as mitigation,
Preservation adjustment factor = NA
Adjusted mitigation delta = NA

For impact assessment areas
FL = delta x impact acres = 0.13

Delta = [with-current]
0.733

If mitigation
Time lag (t-factor) = NA
Risk factor = NA

For mitigation assessment areas
RFG = delta/(t-factor x risk) = NA

Form 62-345.900(2), F.A.C. [effective date]

PART I – Qualitative Description
(See Section 62-345.400, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
Ft Lauderdale-Hollywood International Airport (FLL)	Not Applicable	**W-33**

FLUCCs code	Further classification (optional)	Impact or Mitigation Site?	Impact Area Size
619	Exotic Wetland Hardwood (Brazilian pepper)	Direct Impact	**5.37 acres**

Basin/Watershed Name/Number	Affected Waterbody (Class)	Special Classification (i.e.OFW, AP, other local/state/federal designation of importance)
Not Applicable	Class III	None

Geographic relationship to and hydrologic connection with wetlands, other surface water, uplands

This assessment area (AA) lies in low lying area that has reverted to wetland predominated by Brazilian pepper. It lies between a large fill area to the east, and parking lots for rental cars/taxi cabs. A portion of it appears to be part of a stormwater treatment facility. It is regionally isolated from significant wildlife corridors due to FLL and US-1 to the west, and Port Everglades to the east.

Assessment area description

A somewhat rectangular assessment area, approximately 8.92 acres in size that is predominated by Brazilian pepper, an exotic pest plant. Of this, 5.37 acres will be directly impacted from the construction of the south runway. No significant wildlife usage was noted during the site visit. Standing water occured nearly throughout with somewhat open water areas along the eastern and southern fringes. Assessment area specifics are provided on the attached UMAM Part II.

Significant nearby features	Uniqueness (considering the relative rarity in relation to the regional landscape.)
No biologically significant upland features or significant wetland areas have been identified near the property - all current wetlands previously disturbed by agriculture and drainage ditches. Lies in a heavily urbanized area. Appears to receive runoff from surrounding properties.	Not Applicable

Functions	Mitigation for previous permit/other historic use
This assessment area functions primarily for water storage/flow attenuation. Most wetland wildlife functions were not observed at the time of the field visit although portions of the site may be used episodically.	Not Applicable

Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected to be found)	Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area)
Wildlife use minimal because site is isolated/severed from any significant regional wildlife corridor. Movement between surrounding parcels possible but species limited by the various disturbed or exotic impacted ecosystems provided.	No anticipated utilization by Listed Species due to the type of habitats offered and land use practices. Regionally, the surrounding areas have become increasingly developed with roads, highways, existing airport, existing seaport, and other new development.

Observed Evidence of Wildlife Utilization (List species directly observed, or other signs such as tracks, droppings, casings, nests, etc.):

During the site visit, no direct or indirect evidence of wildlife use was observed other than a feral cat. Wading birds or other wetland wildlife were not observed; no prey base or evidence thereof was observed at the time of the field visit; dense canopy limits wading bird/raptor access over the majority of the AA;species limited by the various disturbed or exotic impacted ecosystem available -- raccoons, black rats, and such are likely inhabitants.

Additional relevant factors:

Based on historic aerials it appears that this area had been previously disturbed and reverted to B. pepper wetland over time. Two paved facilities immediately flank the AA to the west; to the north lies Taylor Road; to the east a FLL facility and fill/upland area; to the south lies the FPL corridor and silviculture. The AA appears to receive runoff from these properties furthering its wetland character. These land uses and the heavy urbanization regionally, essentially sever any wildlife corridors and reduce the probability that this site will receive meaningful wildlife use; species limited by the various disturbed or exotic impacted ecosystem available.

Assessment conducted by:	Assessment date(s):
Stephen W. Carney	January 20, 2005 & May 19, 2006
Finalized by:	**Date(s) finalized:**
Michael J. Tust	January 15, 2008

Form 62-345.900(1), F.A.C. [effective date]

PART II – Quantification of Assessment Area (impact or mitigation)
(See Sections 62-345.500 and .600, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
Ft Lauderdale-Hollywood International Airport (FLL)	Not Applicable	**W-33**
Impact or Mitigation	**Assessment conducted by:**	**Assessment date:**
Direct Impact	Stephen W. Carney	January 20, 2005 & May 19, 2006
	Finalized by:	**Date finalized:**
	Michael J. Tust	January 15, 2008

Scoring Guidance	Optimal (10)	Moderate(7)	Minimal (4)	Not Present (0)
The scoring of each indicator is based on what would be suitable for the type of wetland or surface water assessed	Condition is optimal and fully supports wetland/surface water functions	Condition is less than optimal, but sufficient to maintain most wetland/surface waterfunctions	Minimal level of support of wetland/surface water functions	Condition is insufficient to provide wetland/surface water functions

	w/o pres or current	with	
.500(6)(a) Location and Landscape Support	3	0	Extremely limited support for many wetland wildlife species provided in the immediate surroundings. Extensive invasive pest plant cover (B. pepper) over the majority of the assessment area (AA). Presence of major road systems and urbanization surrounding the AA are deterrent and greatly limit the movement of desireable wetland wildlife with the exception of avifauna. Downstream hydrologic connectivity is substantially limited - no dowstream hydrologic connection is apparent to surrounding habitats. Upstream hydrologic connectivity appears to be inflow of stormwater runoff.
.500(6)(b)Water Environment (n/a for uplands)	4	0	Standing water present at the time of site visit. No surface water outflows beyond the limits of AA possible. Mucky soils are present -- some rafting of debris. Water quality is presumed moderate, although possible runoff from surrounding pavement and uplands may degrade water in AA with time. AA hydrology/hydroperiod appears artificially enhanced due to runoff from surrounding land.
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community	3	0	AA predominated by Brazilian pepper with little or no understory beneath. Long term viability of site is poor due to heavy canopy shading and allelopathy. Some vertical structure offered for roosting and nesting along the edges of the AA but none observed. Associated with the more open areas at the periphery were leather fern, cat-tail, love vine, hempvine, salt bush, broom sedge, purple sedge, wedelia. Long term viability of site is poor due to heavy canopy shading and allelopathy of B pepper.

Score = sum of above scores/30 (if uplands, divide by 20)	current or w/o pres	with
	0.333	0

If preservation as mitigation,
Preservation adjustment factor = NA
Adjusted mitigation delta = NA

For impact assessment areas
FL = delta x impact acres = 1.79

Delta = [with-current]
0.333

If mitigation
Time lag (t-factor) = NA
Risk factor = NA

For mitigation assessment areas
RFG = delta/(t-factor x risk) = NA

Form 62-345.900(2), F.A.C. [effective date]

PART I – Qualitative Description
(See Section 62-345.400, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
Ft Lauderdale-Hollywood International Airport (FLL)	Not Applicable	**W-N3a**

FLUCCs code	Further classification (optional)	Impact or Mitigation Site?	Impact Area Size
619	Exotic Wetland Hardwood	Direct Impact	**2.83 acres**

Basin/Watershed Name/Number	Affected Waterbody (Class)	Special Classification (i.e.OFW, AP, other local/state/federal designation of importance)
Not Applicable	Class III	None

Geographic relationship to and hydrologic connection with wetlands, other surface water, uplands

This assessment area (AA) lies in an area of former agriculture that has reverted to wetland predominated by Brazilian pepper. It lies between parking lots for rental cars/taxi cabs to the east; Taylor Road to the north; and a tree farm (W-N3b) to the south. It is regionally isolated from significant wildlife corridors due to FLL and US-1 to the west, and Port Everglades to the east.

Assessment area description

A somewhat triangular assessment area, approximately 2.95 acres in size that is predominated by Brazilian pepper, an exotic pest plant. Of this, 2.83 acres will be directly impacted from construction of the south runway. No significant wildlife usage was noted during the site visit. Standing water occured within wide linear depressions oriented N-S through the AA; minor soil ridges were associated with these features. Assessment area specifics are provided on the attached UMAM Part II.

Significant nearby features	Uniqueness (considering the relative rarity in relation to the regional landscape.)
No biologically significant upland features or significant wetland areas have been identified nearby the property - all current wetlands previously disturbed by agriculture and drainage ditches. Lies in a heavily urbanized area.	Not Applicable

Functions	Mitigation for previous permit/other historic use
This assessment area functions primarily for water storage/flow attenuation. Most wetland wildlife functions were not observed at the time of the field visit.	Not Applicable

Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected to be found)	Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area)
Wildlife use minimal because site is isolated/severed from any significant regional wildlife corridor. Movement between surrounding parcels possible but species limited by the various disturbed or exotic impacted ecosystems provided.	No anticipated utilization by Listed Species due to the type of habitats offered and land use practices. Regionally, the surrounding areas have become increasing developed with roads, highways, existing airport, existing seaport, and other new development.

Observed Evidence of Wildlife Utilization (List species directly observed, or other signs such as tracks, droppings, casings, nests, etc.):

During the site visit, no direct or indirect evidence of wildlife use was observed. Wading birds or other wetland wildlife were not observed; no prey base or evidence thereof was observed at the time of the field visit; dense canopy limits wading bird/raptor access over the majority of the AA;species limited by the various disturbed or exotic impacted ecosystem available -- raccoons, black rats, and such are likely inhabitants.

Additional relevant factors:

Based on historic aerials it appears that this area had been previously cleared and used for agriculture/silviculture. Along the northwest side lies Taylor Road; to the east parking for car rental; to the south lies active silviculture. These land uses and the heavy urbanization regionally, essentially severe any wildlife corridors and reduce the probability that this site will receive meaningful wildlife use; species limited by the various disturbed or exotic impacted ecosystem available.

Assessment conducted by:	Assessment date(s):
Stephen W. Carney	January 20, 2005 & May 19, 2006
Finalized by:	**Date(s) finalized:**
Michael J. Tust	January 15, 2008

Form 62-345.900(1), F.A.C. [effective date]

PART II – Quantification of Assessment Area (impact or mitigation)
(See Sections 62-345.500 and .600, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
Ft Lauderdale-Hollywood International Airport (FLL)	Not Applicable	**W-N3a**
Impact or Mitigation	**Assessment conducted by:**	**Assessment date:**
Direct Impact	Stephen W. Carney	January 20, 2005 & May 19, 2006
	Finalized by:	**Date finalized:**
	Michael J. Tust	January 15, 2008

Scoring Guidance	Optimal (10)	Moderate(7)	Minimal (4)	Not Present (0)
The scoring of each indicator is based on what would be suitable for the type of wetland or surface water assessed	Condition is optimal and fully supports wetland/surface water functions	Condition is less than optimal, but sufficient to maintain most wetland/surface waterfunctions	Minimal level of support of wetland/surface water functions	Condition is insufficient to provide wetland/surface water functions

	w/o pres or current	with	
.500(6)(a) Location and Landscape Support	3	0	Extremely limited support for many wetland wildlife species provided in the immediate surroundings. Extensive invasive pest plant cover (B. pepper) over the majority of the assessment area (AA). Presence of major road systems and urbanization surrounding the assessment area are deterrents and greatly limit the movement of desireable wetland wildlife. Downstream hydrologic connectivity is substantially limited - W-N3b (tree farm) to the south is connected, but provides little landscape support. Upstream hydrologic connectivity appears to be inflow of stormwater runoff but limited.
.500(6)(b)Water Environment (n/a for uplands)	4	0	Standing water present at the time of site visit. Limited surface water outflows beyond the limits of AA possible via drainage ditches leading south into tree farm (W-N3b). Mucky soils are present -- some rafting of debris. Water quality is presumed moderate, although possible runoff from Taylor Road and parking lot. AA hydrology/hydroperiod likely affected by ditching to south and linear depressional areas within.
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community	2	0	AA predominated by Brazilian pepper with little or no understory beneath. Long term viability of site is poor due to heavy canopy shading and allelopathy. Some vertical structure offered for roosting and nesting along the edges of the AA but none observed. Long term viability of site is poor due to heavy canopy shading and allelopathy of B. pepper. Without maintenance of the tree farm to the south, B. pepper will continue to expand southward into W-N3b.

Score = sum of above scores/30 (if uplands, divide by 20)	current or w/o pres	with
	0.300	0

If preservation as mitigation,
Preservation adjustment factor = NA
Adjusted mitigation delta = NA

For impact assessment areas
FL = delta x impact acres = 0.85

Delta = [with-current]
0.300

If mitigation
Time lag (t-factor) = NA
Risk factor = NA

For mitigation assessment areas
RFG = delta/(t-factor x risk) = NA

Form 62-345.900(2), F.A.C. [effective date]

PART I – Qualitative Description
(See Section 62-345.400, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
Ft Lauderdale-Hollywood International Airport (FLL)	Not Applicable	**W-N3b**

FLUCCs code	Further classification (optional)	Impact or Mitigation Site?	Impact Area Size
241	Tree Nursery	Direct Impact	**0.74 acres**

Basin/Watershed Name/Number	Affected Waterbody (Class)	Special Classification (i.e.OFW, AP, other local/state/federal designation of importance)
Not Applicable	Class III	None

Geographic relationship to and hydrologic connection with wetlands, other surface water, uplands

This assessment area (AA) lies east of US-1 between NE 10 Street and Taylor Road. While managed as a tree farm, this AA it harbors emergent herbaceous/graminoid wetland species and is at times inundated. It is regionally isolated from significant wildlife corridors due to its position next to US-1 and within heavy urbanization.

Assessment area description

A roughly square assessment area, approximately 5.65 acres total in size that is an emergent/graminoid wetland growing within a tree nursery. Of this, 0.74 acres will be directly impacted from construction of the south runway. AA may provide temporary habitat to aquatic species or forage to wetland dependent species during periods of extreme inundation. AA appears to be marginally maintained - without more aquatic plant species colonize.

Significant nearby features	Uniqueness (considering the relative rarity in relation to the regional landscape.)
A series of drainage ditches within the AA, a Brazilian pepper thicket (W-N3a) resides at the north end. Large parking facility for taxis and rental cars to the east. Generally in an heavily urbanized area.	Not Applicable

Functions	Mitigation for previous permit/other historic use
This assessment area functions primarily for water storage/flow attenuation seasonally and during significant rainfall events. Limited wetland wildlife functions were observed at the time of the field visit, but may be available during periods of inundation.	Not Applicable

Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected to be found)	Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area)
Except for drainage ditches within the AA, aquatic wildlife use minimal because site is isolated/severed from any significant regional wildlife corridor. Movement between surrounding areas limited due to heavy urbanization and heavy traffic. Wading birds, raccoons, rats possible.	No anticipated utilization by Listed Species due to the type of habitats offered and land use practices. Regionally, the surrounding areas have become increasing developed with roads, highways, existing airport, existing seaport, and other new development.

Observed Evidence of Wildlife Utilization (List species directly observed, or other signs such as tracks, droppings, casings, nests, etc.):

During the site visit, no evidence of wildlife use was observed; no prey base or evidence thereof was observed at the time of the field visit - but may be available within the ditches and as the site floods; species limited by isolation and intense land use surrounding this AA. Wading birds and similar wetland dependent species might be expected as occasional visitors as conditions warrant.

Additional relevant factors:

Based on historic aerials, it appears that this area had been previously cleared for agriculture and later impacted with the shifting of US-1 to the east. It continues to be used as a tree farm. Area appears to be periodically, but minimally, maintained/mowed -- when left fallow open areas colonize with wetland vegetation

Assessment conducted by:	Assessment date(s):
Stephen W. Carney	January 20, 2005 & May 19, 2006
Assessment conducted by:	Assessment date(s):
Michael J. Tust	January 15, 2008

Form 62-345.900(1), F.A.C. [effective date]

PART II – Quantification of Assessment Area (impact or mitigation)
(See Sections 62-345.500 and .600, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
Ft Lauderdale-Hollywood International Airport (FLL)	Not Applicable	**W-N3b**
Impact or Mitigation	Assessment conducted by:	Assessment date:
Direct Impact	Stephen W. Carney	January 20, 2005 & May 19, 2006
	Finalized by:	Date finalized:
	Michael J. Tust	January 15, 2008

Scoring Guidance	Optimal (10)	Moderate(7)	Minimal (4)	Not Present (0)
The scoring of each indicator is based on what would be suitable for the type of wetland or surface water assessed	Condition is optimal and fully supports wetland/surface water functions	Condition is less than optimal, but sufficient to maintain most wetland/surface waterfunctions	Minimal level of support of wetland/surface water functions	Condition is insufficient to provide wetland/surface water functions

	w/o pres or current	with	
.500(6)(a) Location and Landscape Support	3	0	Limited support for many wetland wildlife species provided in the immediate surroundings due to maintenance/mowing of the area, and surrounding land usage. Upstream component linked to the overtopping of ditch and stormwater runoff. No apparent downstream connection - area lower than surroundings to allow water movement off-site. Provides some habitat for refuge with the ditches, seasonal forage etc. within assessment (AA) Heavily travelled roadways encircle this small AA. Exotic vegetation in an adjacent wetland (B. pepper) and some cat-tail affect score.
.500(6)(b)Water Environment (n/a for uplands)	4	0	Presence of standing water, highly dependent on time of visit/season. Standing water present in ditches, but variable in open areas of planting. Limited surface water outflows beyond the limits of AA possible during extreme rain/flood conditions. Mucky soils are present -- soils soggy at time of visit. Water quality is presumed fair - moderate because subject to flooding from stormwater drainage ditch adjacent to US-1. Also possible impacts due to on-site use of pesticides, herbicides, fertilizers.
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community	5	0	A variety herbaceous wetland plants were observed growing between the rows of trees/palms and in association with the drainage ditches. Some observed included: barnyard grass, purple sedge, camphor weed, hurricane grass, tassel flower, water hyssop, cat-tail; Asiatic coinwort; frog-fruit; Cyperus spp. Area maintained/mowed - does not appear to be done on irregular basis. It is not known if herbicide/pesticide/fertilizers are applied within AA

Score = sum of above scores/30 (if uplands, divide by 20)	current or w/o pres	with
	0.400	0

If preservation as mitigation,
Preservation adjustment factor = NA
Adjusted mitigation delta = NA

For impact assessment areas
FL = delta x impact acres = 0.30

Delta = [with-current]
0.400

If mitigation
Time lag (t-factor) = NA
Risk factor = NA

For mitigation assessment areas
RFG = delta/(t-factor x risk) = NA

Form 62-345.900(2), F.A.C. [effective date]

ATTACHMENT 3.3-2

Secondary Impact UMAM Wetland Score Sheets for Alternative B1c

PART I – Qualitative Description
(See Section 62-345.400, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
Ft Lauderdale-Hollywood International Airport (FLL)	Not Applicable	**W-8**

FLUCCs code	Further classification (optional)	Impact or Mitigation Site?	Impact Area Size
612	Mangrove Forest	Secondary Impact	**0.07 acres**

Basin/Watershed Name/Number	Affected Waterbody (Class)	Special Classification (i.e.OFW, AP, other local/state/federal designation of importance)
Not Applicable	Class III	None

Geographic relationship to and hydrologic connection with wetlands, other surface water, uplands

This Assessment Area (AA) is a relatively small rectangular mangrove wetland that abuts the Dania Cut-off Canal along its north side. It is regionally isolated from significant wildlife corridors due to I-95 and associated fill to the west, FLL to the east and north, and commercialization to the south.

Assessment area description

This rectangular assessment area is predominated by white mangrove and has a total acreage of 2.67 acres. Of this, 0.07 acres may be may receive secondary impacts as a result of construction of the approach lights and associated access road. Some wildlife usage (crabs, fish, some birds) is expected but none was noted within this AA during the site visit. Assessment area specifics are provided on the attached UMAM Part II.

Significant nearby features	Uniqueness (considering the relative rarity in relation to the regional landscape.)
No biologically significant upland features or significant wetland areas have been identified nearby the property. W-8 lies adjacent to the Dania Cut-off Canal and experiences some tidal flooding on a diurnal basis.	Not Applicable

Functions	Mitigation for previous permit/other historic use
This AA experiences daily tidal inundation and may provide limited refugia for aquatic fauna temporarily transported onto the site. Some wetland wildlife functions (e.g., wading birds foraging) were not observed at the time of the field visit.	Not Applicable

Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected to be found)	Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area)
Wading bird use appears limited due to dense canopy and the limited duration of flooding. While at upper reaches of daily tidal extent, AA provides temporary opportunity for marine/estuarine fish, crustaceans, and plankton, but the site appears to drain completely at low tide, except at the shore of the Canal. Fiddler crabs were noted at low tide.	Limited utilization by Listed Species due to the type of habitats offered and land use practices. Regionally, the surrounding areas have become increasing developed with roads, highways, existing airport, existing seaport, and other new development.

Observed Evidence of Wildlife Utilization (List species directly observed, or other signs such as tracks, droppings, casings, nests, etc.):

During the site visit, only fiddler crabs were observed. Wading birds or other wetland wildife were not observed likely due to dense canopy and the limited duration/extent of flooding, but might use this AA periodically where conditions are favorable.

Additional relevant factors:

Based on field observations of flotsam, it appeared that tidal inundation of W-8 is neither regular or complete; the extreme southern limits likely are inundated during extreme storm conditions; also a berm near the northeast corner likely further limits the extent of inundation.

Assessment conducted by:	Assessment date(s):
Stephen W. Carney	January 21, 2005
Finalized by:	**Date(s) finalized:**
Michael J. Tust	January 15, 2008

Form 62-345.900(1), F.A.C. [effective date]

PART II – Quantification of Assessment Area (impact or mitigation)
(See Sections 62-345.500 and .600, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
Ft Lauderdale-Hollywood International Airport (FLL)	Not Applicable	**W-8**
Impact or Mitigation	Assessment conducted by:	Assessment date:
Secondary Impact	Stephen W. Carney	January 21, 2005
	Finalized by:	Date finalized:
	Michael J. Tust	January 15, 2008

Scoring Guidance	Optimal (10)	Moderate(7)	Minimal (4)	Not Present (0)
The scoring of each indicator is based on what would be suitable for the type of wetland or surface water assessed	Condition is optimal and fully supports wetland/surface water functions	Condition is less than optimal, but sufficient to maintain most wetland/surface waterfunctions	Minimal level of support of wetland/surface water functions	Condition is insufficient to provide wetland/surface water functions

	w/o pres or current	with	
.500(6)(a) Location and Landscape Support	4	0	Moderate support for many wetland wildlife species provided in the immediate surroundings that may enter from the Canal. Regionally, assessment area (AA) is isolated, highly compartmentalized due the presence of FLL, I-95, and similar high density urbanization. Tidally influenced by the Dania Cut-off Canal allowing for some movement and exchange of aquatic fauna -- fiddler crabs noted. Connectivity is limited to the northern edge at the Cut-off Canal; isolated on the remaining three sides.
.500(6)(b)Water Environment (n/a for uplands)	6	0	Based on field observations of flotsam, it appeared that tidal inundation of W-8 is neither regular or complete; the extreme southern limits likely are inundated during extreme storm conditions; nonetheless, such inundations allow for the temporary passage of fish and plankton among others. Mucky soils are present. Water quality is presumed moderate - good, as dictated by the Canal water quality. Areal extent of surface water flows, flushing dependent upon seasonal/weather tides, and generally floods the extreme northern portion of this AA. Uncertain whether stormwater received from hotel and garage at south edge.
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community	7	0	Mangrove species (predominantly white mangrove with red mangrove at the Canal shore) characterize the AA. Brazilian pepper and Australian pine and other exotics lie in the upland at the west but seem to be limited within the AA by tidal flushing and salinity regime. Little understory typical of mangrove communities. White mangroves appear to be very tall and thin as though somewhat stressed - salinity may not be optimal for species.

Score = sum of above scores/30 (if uplands, divide by 20)	
current or w/o pres	with
0.567	0

If preservation as mitigation,
Preservation adjustment factor = NA
Adjusted mitigation delta = NA

For secondary impact assessment areas
FL = delta x impact acres = 0.04

Delta = [with-current]
0.567

If mitigation
Time lag (t-factor) = NA
Risk factor = NA

For mitigation assessment areas
RFG = delta/(t-factor x risk) = NA

Form 62-345.900(2), F.A.C. [effective date]

PART I – Qualitative Description
(See Section 62-345.400, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
Ft Lauderdale-Hollywood International Airport (FLL)	Not Applicable	**W-25a**

FLUCCs code	Further classification (optional)	Impact or Mitigation Site?	Impact Area Size
612	Mangrove Forest	Secondary Impact	**0.39 acres**

Basin/Watershed Name/Number	Affected Waterbody (Class)	Special Classification (i.e.OFW, AP, other local/state/federal designation of importance)
Not Applicable	Class III	None

Geographic relationship to and hydrologic connection with wetlands, other surface water, uplands

This assessment area (AA) is a large relatively isolated mangrove wetland that lies contiguous to other similar mangrove wetlands. It appears to be regionally isolated from significant wildlife corridors due to FLL facilities and roads to the west, and Port Everglades to the east. It is hydrologically connected to the Dania Cut-off Canal by a series of canals, culverts, and ditches.

Assessment area description

A somewhat triangular assessment area, with a total acreage of 8.92 acres. Of this, 0.39 acres may receive secondary impacts from construction of the approach lights and associated access road. This AA was separated from W-25b to the south due to observed differences in vegetation signature. Little wildlife usage was noted within this AA during the site visit. Prior to the mid-1980s, area was used in agriculture with disturbed soils, furrows, drainage ditches, etc. Assessment area specifics are provided on the attached UMAM Part II.

Significant nearby features	Uniqueness (considering the relative rarity in relation to the regional landscape.)
No biologically significant upland features or significant wetland areas have been identified nearby the property. AA intergrades into W-25b to the south and is connected to tidal flows by a series of culverts running from a canal to the east - area previously disturbed by agriculture.	Not Applicable
Functions This assessment area functions primarily for water storage/flow attenuation. Some wetland wildlife functions (e.g., wading birds foraging) were not observed at the time of the field visit; but prey base (forage fish) observed within this AA; less than found in W-25b however.	**Mitigation for previous permit/other historic use** Not Applicable
Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected to be found) Wading bird use appears moderate due to dense canopy. While at upper reaches of daily tidal extent, AA provides opportunity for marine/estuarine fish, crustaceans, and plankton.	Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area) Limited utilization by Listed Species due to the type of habitats offered and land use practices. Regionally, the surrounding areas have become increasing developed with roads, highways, existing airport, existing seaport, and other new development.

Observed Evidence of Wildlife Utilization (List species directly observed, or other signs such as tracks, droppings, casings, nests, etc.):

During the site visit, use by small forage fish was noted. Wading birds or other wetland wildlife were not observed likely due to dense canopy, but might use this AA periodically where conditions are favorable. Red-winged black birds were noted singing within this AA.

Additional relevant factors:

This wetland area has remained hydrologically connected to diurnal tides due to placement of a series of culverts along the FPL access road. This AA is considered slightly less functional relative to W-25b to the south because it appears to lie at the upper limit of tidal exchange, appears to be more disturbed, and has a greater proportion of exotic pest plants within is interior. The vegetative signature in the field and denoted on the aerial lead to the seperation of this AA from W-25b.

Assessment conducted by:	Assessment date(s):
Stephen W. Carney	November 15/16, 2004 & May 19, 2006
Finalized by:	Date(s) finalized:
Michael J. Tust	January 15, 2008

Form 62-345.900(1), F.A.C. [effective date]

PART II – Quantification of Assessment Area (impact or mitigation)
(See Sections 62-345.500 and .600, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
Ft Lauderdale-Hollywood International Airport (FLL)	Not Applicable	**W-25a**
Impact or Mitigation	Assessment conducted by:	Assessment date:
Secondary Impact	Stephen W. Carney	November 15/16, 2004 & May 19, 2006
	Finalized by:	Date finalized:
	Michael J. Tust	January 15, 2008

Scoring Guidance	Optimal (10)	Moderate(7)	Minimal (4)	Not Present (0)
The scoring of each indicator is based on what would be suitable for the type of wetland or surface water assessed	Condition is optimal and fully supports wetland/surface water functions	Condition is less than optimal, but sufficient to maintain most wetland/surface waterfunctions	Minimal level of support of wetland/surface water functions	Condition is insufficient to provide wetland/surface water functions

	w/o pres or current	with	
.500(6)(a) Location and Landscape Support	6	0	Moderate support for many wetland wildlife species provided in the immediate surroundings. Regionally, assessment area (AA) is isolated, highly compartmentalized due the presence of FLL, Port Everglades, and similar urban infrastructure. Invasive pest plant cover intergrading from the western periphery and within this AA. Tidally influenced (artificial) mangrove wetlands contiguous to south (W-25b) and beyond the FPL transmission corridor to the east (W-N4) allowing for some movement and exchange of aquatic fauna. Both upstream and downstream hydrologic connectivity is provided with flows/flushing less pronounced farther north in the AA. Its location from Dania Cut-off Canal reduces the landscape support relative to W-25b
.500(6)(b)Water Environment (n/a for uplands)	6	0	Water levels and tidal flushing dependent on culverts (artificial system with some reduced flows, however allows for the active passage of fish and passive passage of plankton among others. Surface water flows extends beyond the limits of AA to north but diminishes with distance. Mucky soils are present. Remnant drainage ditchs affect surface water sheet flow. Areas of soil disturbance/mounds affect surface water flow. Water quality is presumed moderate - good, although possible runoff from surrounding roads may degrade water in AA with time.
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community	6	0	Mangrove species (red, white, and black) and buttonwood characterize this AA. Brazilian pepper and Australian pine intrude from the periphery, particularly from the west and provide for a change in the vegetation signature - most appear associated with noted soil disturbance. Little understory associated with mangroves; areas of B. pepper more brushy. Other non-native species noted at the western extreme of the AA -- bowstring hemp, date palms etc. that may have been the result of past disposal. Reduced long-term viability relative to W-25b, with the AA being subject to further colonization by B. pepper as the salinity regime allows.

Score = sum of above scores/30 (if uplands, divide by 20)	current or w/o pres	with
	0.600	0

If preservation as mitigation,
Preservation adjustment factor = NA
Adjusted mitigation delta = NA

For secondary impact assessment areas
FL = delta x impact acres = 0.23

Delta = [with-current]
0.600

If mitigation
Time lag (t-factor) = NA
Risk factor = NA

For mitigation assessment areas
RFG = delta/(t-factor x risk) = NA

Form 62-345.900(2), F.A.C. [effective date]

PART I – Qualitative Description
(See Section 62-345.400, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
Ft Lauderdale-Hollywood International Airport (FLL)	Not Applicable	**W-25b**

FLUCCs code	Further classification (optional)	Impact or Mitigation Site?	Impact Area Size
612	Mangrove Forest	Secondary Impact	**0.41 acres**

Basin/Watershed Name/Number	Affected Waterbody (Class)	Special Classification (i.e.OFW, AP, other local/state/federal designation of importance)
Not Applicable	Class III	None

Geographic relationship to and hydrologic connection with wetlands, other surface water, uplands

This assessment area (AA) is a large relatively isolated mangrove wetland that lies contiguous to other similar mangrove wetlands. It appears to be regionally isolated from significant wildlife corridors due to FLL facilities and roads to the west, and Port Everglades to the east. It is hydrologically connected to the Dania Cut-off Canal by a series of canals, culverts, and ditches.

Assessment area description

A somewhat triangular assessment area, with a total acreage of 22.80 acres. Of this, 0.41 acres may receive secondary impacts from construction of the approach lights and associated access road. This AA was separated from W-25a to the north due to observed differences in vegetation signature. Some wildlife usage (crabs, fish, some birds) was noted within this AA during the site visit. Prior to the mid-1980s area was used in agriculture with disturbed soils, furrows, drainage ditches, etc. Assessment area specifics are provided on the attached UMAM Part II.

Significant nearby features	Uniqueness (considering the relative rarity in relation to the regional landscape.)
No biologically significant upland features or significant wetland areas have been identified nearby the property. AA intergrades into W-25a to the north and is connected to tidal flows by a series of culverts running from a canal to the east. Area previously disturbed by agriculture.	Not Applicable
Functions This AA experiences daily tidal inundation and provides refugia for aquatic fauna transported via the culvert system. Some wetland wildlife functions (e.g., wading birds foraging) were not observed at the time of the field visit; but prey base (forage fish, mullet, crabs) observed within this AA.	**Mitigation for previous permit/other historic use** Not Applicable
Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected to be found) Wading bird use appears moderate due to dense canopy. While at upper reaches of daily tidal extent, AA provides opportunity for marine/estuarine fish, crustaceans, and plankton -- mullet, killifish, fiddler crabs, and some wading birds can be expected, particularly at its edges.	Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area) Limited utilization by Listed Species due to the type of habitats offered and land use practices. Regionally, the surrounding areas have become increasing developed with roads, highways, existing airport, existing seaport, and other new development.

Observed Evidence of Wildlife Utilization (List species directly observed, or other signs such as tracks, droppings, casings, nests, etc.):

During the site visit, use by small forage fish (e.g., Fundulus Cyprinodon) were noted. A mangrove water snake was observed within a remnant drainage ditch. Wading birds or other wetland wildlife were not observed likely due to dense canopy, but might use this AA periodically where conditions are favorable. Red-winged black birds were noted singing within this AA.

Additional relevant factors:

This wetland area has remained hydrologically connected to diurnal tides due to placement of a series of culverts along the FPL access road. This AA is considered slightly more functional relative to W-25a to the north because it appears to subject to a better tidal exchange, appears to be more less disturbed within, and has a smaller proportion of exotic pest plants within is interior. The vegetative signature in the field and denoted on the aerial lead to the separation of this AA from W-25a.

Assessment conducted by:	Assessment date(s):
Stephen W. Carney	November 15/16, 2004 & May 19, 2006
Finalized by:	Date(s) finalized:
Michael J. Tust	January 15, 2008

Form 62-345.900(1), F.A.C. [effective date]

PART II – Quantification of Assessment Area (impact or mitigation)
(See Sections 62-345.500 and .600, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
Ft Lauderdale-Hollywood International Airport (FLL)	Not Applicable	**W-25b**
Impact or Mitigation	Assessment conducted by:	Assessment date:
Secondary Impact	Stephen W. Carney	November 15/16, 2004 & May 19, 2006
	Finalized by:	Date finalized:
	Michael J. Tust	January 15, 2008

Scoring Guidance	Optimal (10)	Moderate(7)	Minimal (4)	Not Present (0)
The scoring of each indicator is based on what would be suitable for the type of wetland or surface water assessed	Condition is optimal and fully supports wetland/surface water functions	Condition is less than optimal, but sufficient to maintain most wetland/surface waterfunctions	Minimal level of support of wetland/surface water functions	Condition is insufficient to provide wetland/surface water functions

	w/o pres or current	with	
.500(6)(a) Location and Landscape Support	7	0	Moderate support for many wetland wildlife species provided in the immediate surroundings. Regionally, assessment area (AA) is isolated and highly compartmentalized due the presence of FLL, Port Everglades, and similar urban infrastructure. Tidally influenced (artificial) mangrove wetlands contiguous to north (W-25a) and beyond the FPL transmission corridor to the east (W-N4) allowing for some movement and exchange of aquatic fauna -- mullet, killifish, mangrove crabs, fiddler crabs noted. Both upstream and downstream hydrologic connectivity is provided with flows/flushing less pronounced farther north in the AA as evidenced by the change in vegetation in W-25a. Its location from Dania Cut-off Canal slightly increaes the landscape support relative to W25-a.
.500(6)(b)Water Environment (n/a for uplands)	7	0	Water levels and tidal flushing dependent on culverts (artificial system with some reduced flows); however, AA allows for the active passage of fish and passive passage of plankton among others. Surface water flows extends beyond the limits of AA to north into W-25b but diminishes with distance. Mucky soils are present. Remnant drainage ditchs affect surface water sheet flow. Water quality is presumed moderate - good. Water flows, flushing dependent upon culvert system; therefore, sheetflow is not uniform or natural, but is scored slightly higher than W-25a due to better/stronger tidal flushing.
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community	8	0	Mangrove species (red, white, and black) and buttonwood characterize AA. Brazilian pepper and Australian pine intrude from the western periphery, but seem to be limited by tidal flushing and salinity regime. Little understory typical of mangrove communities. Leather fern, sea oxeye daisy in openings at edges of AA.

Score = sum of above scores/30 (if uplands, divide by 20)		
current or w/o pres	with	
0.733	0	

If preservation as mitigation,
Preservation adjustment factor = NA
Adjusted mitigation delta = NA

For secondary impact assessment areas
FL = delta x impact acres = 0.30

Delta = [with-current]
0.733

If mitigation
Time lag (t-factor) = NA
Risk factor = NA

For mitigation assessment areas
RFG = delta/(t-factor x risk) = NA

Form 62-345.900(2), F.A.C. [effective date]

PART I – Qualitative Description
(See Section 62-345.400, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
Ft Lauderdale-Hollywood International Airport (FLL)	Not Applicable	**W-33**

FLUCCs code	Further classification (optional)	Impact or Mitigation Site?	Impact Area Size
619	Exotic Wetland Hardwood (Brazilian pepper)	Secondary Impact	**0.22 acres**

Basin/Watershed Name/Number	Affected Waterbody (Class)	Special Classification (i.e.OFW, AP, other local/state/federal designation of importance)
Not Applicable	Class III	None

Geographic relationship to and hydrologic connection with wetlands, other surface water, uplands

This assessment area (AA) lies in low lying area that has reverted to wetland predominated by Brazilian pepper. It lies between a large fill area to the east, and parking lots for rental cars/taxi cabs. A portion of it appears to be part of a stormwater treatment facility. It is regionally isolated from significant wildlife corridors due to FLL and US-1 to the west, and Port Everglades to the east.

Assessment area description

A somewhat rectangular assessment area, approximately 8.92 acres in size that is predominated by Brazilian pepper, an exotic pest plant. Of this, 0.22 acres may receive secondary impacts from construction of the south runway. No significant wildlife usage was noted during the site visit. Standing water occured nearly throughout with somewhat open water areas along the eastern and southern fringes. Assessment area specifics are provided on the attached UMAM Part II.

Significant nearby features	Uniqueness (considering the relative rarity in relation to the regional landscape.)
No biologically significant upland features or significant wetland areas have been identified near the property - all current wetlands previously disturbed by agriculture and drainage ditches. Lies in a heavily urbanized area. Appears to receive runoff from surrounding properties.	Not Applicable
Functions This assessment area functions primarily for water storage/flow attenuation. Most wetland wildlife functions were not observed at the time of the field visit although portions of the site may be used episodically.	**Mitigation for previous permit/other historic use** Not Applicable
Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected to be found) Wildlife use minimal because site is isolated/severed from any significant regional wildlife corridor. Movement between surrounding parcels possible but species limited by the various disturbed or exotic impacted ecosystems provided.	Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area) No anticipated utilization by Listed Species due to the type of habitats offered and land use practices. Regionally, the surrounding areas have become increasingly developed with roads, highways, existing airport, existing seaport, and other new development.

Observed Evidence of Wildlife Utilization (List species directly observed, or other signs such as tracks, droppings, casings, nests, etc.):

During the site visit, no direct or indirect evidence of wildlife use was observed other than a feral cat. Wading birds or other wetland wildlife were not observed; no prey base or evidence thereof was observed at the time of the field visit; dense canopy limits wading bird/raptor access over the majority of the AA;species limited by the various disturbed or exotic impacted ecosystem available -- raccoons, black rats, and such are likely inhabitants.

Additional relevant factors:

Based on historic aerials it appears that this area had been previously disturbed and reverted to B. pepper wetland over time. Two paved facilities immediately flank the AA to the west; to the north lies Taylor Road; to the east a FLL facility and fill/upland area; to the south lies the FPL corridor and silviculture. The AA appears to receive runoff from these properties furthering its wetland character. These land uses and the heavy urbanization regionally, essentially sever any wildlife corridors and reduce the probability that this site will receive meaningful wildlife use; species limited by the various disturbed or exotic impacted ecosystem available.

Assessment conducted by:	Assessment date(s):
Stephen W. Carney	January 20, 2005 & May 19, 2006
Finalized by:	Date(s) finalized:
Michael J. Tust	January 15, 2008

Form 62-345.900(1), F.A.C. [effective date]

PART II – Quantification of Assessment Area (impact or mitigation)
(See Sections 62-345.500 and .600, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
Ft Lauderdale-Hollywood International Airport (FLL)	Not Applicable	**W-33**
Impact or Mitigation	Assessment conducted by:	Assessment date:
Secondary Impact	Stephen W. Carney	January 20, 2005 & May 19, 2006
	Finalized by:	Date finalized:
	Michael J. Tust	January 15, 2008

Scoring Guidance	Optimal (10)	Moderate(7)	Minimal (4)	Not Present (0)
The scoring of each indicator is based on what would be suitable for the type of wetland or surface water assessed	Condition is optimal and fully supports wetland/surface water functions	Condition is less than optimal, but sufficient to maintain most wetland/surface waterfunctions	Minimal level of support of wetland/surface water functions	Condition is insufficient to provide wetland/surface water functions

	w/o pres or current	with	
.500(6)(a) Location and Landscape Support	3	0	Extremely limited support for many wetland wildlife species provided in the immediate surroundings. Extensive invasive pest plant cover (B. pepper) over the majority of the assessment area (AA). Presence of major road systems and urbanization surrounding the AA are deterrent and greatly limit the movement of desireable wetland wildlife with the exception of avifauna. Downstream hydrologic connectivity is substantially limited - no dowstream hydrologic connection is apparent to surrounding habitats. Upstream hydrologic connectivity appears to be inflow of stormwater runoff.
.500(6)(b)Water Environment (n/a for uplands)	4	0	Standing water present at the time of site visit. No surface water outflows beyond the limits of AA possible. Mucky soils are present -- some rafting of debris. Water quality is presumed moderate, although possible runoff from surrounding pavement and uplands may degrade water in AA with time. AA hydrology/hydroperiod appears artificially enhanced due to runoff from surrounding land.
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community	3	0	AA predominated by Brazilian pepper with little or no understory beneath. Long term viability of site is poor due to heavy canopy shading and allelopathy. Some vertical structure offered for roosting and nesting along the edges of the AA but none observed. Associated with the more open areas at the periphery were leather fern, cat-tail, love vine, hempvine, salt bush, broom sedge, purple sedge, wedelia. Long term viability of site is poor due to heavy canopy shading and allelopathy of B pepper.

Score = sum of above scores/30 (if uplands, divide by 20)	current or w/o pres	with
	0.333	0

If preservation as mitigation,
Preservation adjustment factor = NA
Adjusted mitigation delta = NA

For secondary impact assessment areas
FL = delta x impact acres = 0.07

Delta = [with-current]
0.333

If mitigation
Time lag (t-factor) = NA
Risk factor = NA

For mitigation assessment areas
RFG = delta/(t-factor x risk) = NA

Form 62-345.900(2), F.A.C. [effective date]

PART I – Qualitative Description
(See Section 62-345.400, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
Ft Lauderdale-Hollywood International Airport (FLL)	Not Applicable	**W-N3a**

FLUCCs code	Further classification (optional)	Impact or Mitigation Site?	Impact Area Size
619	Exotic Wetland Hardwood	Secondary Impact	**0.09 acres**

Basin/Watershed Name/Number	Affected Waterbody (Class)	Special Classification (i.e.OFW, AP, other local/state/federal designation of importance)
Not Applicable	Class III	None

Geographic relationship to and hydrologic connection with wetlands, other surface water, uplands

This assessment area (AA) lies in an area of former agriculture that has reverted to wetland predominated by Brazilian pepper. It lies between parking lots for rental cars/taxi cabs to the east; Taylor Road to the north; and a tree farm (W-N3b) to the south. It is regionally isolated from significant wildlife corridors due to FLL and US-1 to the west, and Port Everglades to the east.

Assessment area description

A somewhat triangular assessment area, approximately 2.95 acres in size that is predominated by Brazilian pepper, an exotic pest plant. Of this, 0.09 acres may receive secondary impacts from construction of the south runway. No significant wildlife usage was noted during the site visit. Standing water occured within wide linear depressions oriented N-S through the AA; minor soil ridges were associated with these features. Assessment area specifics are provided on the attached UMAM Part II.

Significant nearby features	Uniqueness (considering the relative rarity in relation to the regional landscape.)
No biologically significant upland features or significant wetland areas have been identified nearby the property - all current wetlands previously disturbed by agriculture and drainage ditches. Lies in a heavily urbanized area.	Not Applicable
Functions	**Mitigation for previous permit/other historic use**
This assessment area functions primarily for water storage/flow attenuation. Most wetland wildlife functions were not observed at the time of the field visit.	Not Applicable
Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected to be found)	Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area)
Wildlife use minimal because site is isolated/severed from any significant regional wildlife corridor. Movement between surrounding parcels possible but species limited by the various disturbed or exotic impacted ecosystems provided.	No anticipated utilization by Listed Species due to the type of habitats offered and land use practices. Regionally, the surrounding areas have become increasing developed with roads, highways, existing airport, existing seaport, and other new development.

Observed Evidence of Wildlife Utilization (List species directly observed, or other signs such as tracks, droppings, casings, nests, etc.):

During the site visit, no direct or indirect evidence of wildlife use was observed. Wading birds or other wetland wildlife were not observed; no prey base or evidence thereof was observed at the time of the field visit; dense canopy limits wading bird/raptor access over the majority of the AA;species limited by the various disturbed or exotic impacted ecosystem available -- raccoons, black rats, and such are likely inhabitants.

Additional relevant factors:

Based on historic aerials it appears that this area had been previously cleared and used for agriculture/silviculture. Along the northwest side lies Taylor Road; to the east parking for car rental; to the south lies active silviculture. These land uses and the heavy urbanization regionally, essentially severe any wildlife corridors and reduce the probability that this site will receive meaningful wildlife use; species limited by the various disturbed or exotic impacted ecosystem available.

Assessment conducted by:	Assessment date(s):
Stephen W. Carney	January 20, 2005 & May 19, 2006
Finalized by:	Date(s) finalized:
Michael J. Tust	January 15, 2008

Form 62-345.900(1), F.A.C. [effective date]

PART II – Quantification of Assessment Area (impact or mitigation)
(See Sections 62-345.500 and .600, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
Ft Lauderdale-Hollywood International Airport (FLL)	Not Applicable	**W-N3a**
Impact or Mitigation	Assessment conducted by:	Assessment date:
Secondary Impact	Stephen W. Carney	January 20, 2005 & May 19, 2006
	Finalized by:	Date finalized:
	Michael J. Tust	January 15, 2008

Scoring Guidance	Optimal (10)	Moderate(7)	Minimal (4)	Not Present (0)
The scoring of each indicator is based on what would be suitable for the type of wetland or surface water assessed	Condition is optimal and fully supports wetland/surface water functions	Condition is less than optimal, but sufficient to maintain most wetland/surface waterfunctions	Minimal level of support of wetland/surface water functions	Condition is insufficient to provide wetland/surface water functions

	w/o pres or current	with	
.500(6)(a) Location and Landscape Support	3	0	Extremely limited support for many wetland wildlife species provided in the immediate surroundings. Extensive invasive pest plant cover (B. pepper) over the majority of the assessment area (AA). Presence of major road systems and urbanization surrounding the assessment area are deterrents and greatly limit the movement of desireable wetland wildlife. Downstream hydrologic connectivity is substantially limited - W-N3b (tree farm) to the south is connected, but provides little landscape support. Upstream hydrologic connectivity appears to be inflow of stormwater runoff but limited.
.500(6)(b)Water Environment (n/a for uplands)	4	0	Standing water present at the time of site visit. Limited surface water outflows beyond the limits of AA possible via drainage ditches leading south into tree farm (W-N3b). Mucky soils are present -- some rafting of debris. Water quality is presumed moderate, although possible runoff from Taylor Road and parking lot. AA hydrology/hydroperiod likely affected by ditching to south and linear depressional areas within.
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community	2	0	AA predominated by Brazilian pepper with little or no understory beneath. Long term viability of site is poor due to heavy canopy shading and allelopathy. Some vertical structure offered for roosting and nesting along the edges of the AA but none observed. Long term viability of site is poor due to heavy canopy shading and allelopathy of B. pepper. Without maintenance of the tree farm to the south, B. pepper will continue to expand southward into W-N3b.

Score = sum of above scores/30 (if uplands, divide by 20)	current or w/o pres	with
	0.300	0

If preservation as mitigation,
Preservation adjustment factor = NA
Adjusted mitigation delta = NA

For secondary impact assessment areas
FL = delta x impact acres = 0.03

Delta = [with-current]
0.300

If mitigation
Time lag (t-factor) = NA
Risk factor = NA

For mitigation assessment areas
RFG = delta/(t-factor x risk) = NA

PART I – Qualitative Description
(See Section 62-345.400, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
Ft Lauderdale-Hollywood International Airport (FLL)	Not Applicable	**W-N3b**

FLUCCs code	Further classification (optional)	Impact or Mitigation Site?	Impact Area Size
241	Tree Nursery	Secondary Impact	**0.24 acres**

Basin/Watershed Name/Number	Affected Waterbody (Class)	Special Classification (i.e.OFW, AP, other local/state/federal designation of importance)
Not Applicable	Class III	None

Geographic relationship to and hydrologic connection with wetlands, other surface water, uplands

This assessment area (AA) lies east of US-1 between NE 10 Street and Taylor Road. While managed as a tree farm, this AA it harbors emergent herbaceous/graminoid wetland species and is at times inundated. It is regionally isolated from significant wildlife corridors due to its position next to US-1 and within heavy urbanization.

Assessment area description

A roughly square assessment area, approximately 5.65 acres total in size that is an emergent/graminoid wetland growing within a tree nursery. Of this, 0.24 acres may receive secondary impacts from construction of the south runway. AA may provide temporary habitat to aquatic species or forage to wetland dependent species during periods of extreme inundation. AA appears to be marginally maintained - without more aquatic plant species colonize.

Significant nearby features	Uniqueness (considering the relative rarity in relation to the regional landscape.)
A series of drainage ditches within the AA, a Brazilian pepper thicket (W-N3a) resides at the north end. Large parking facility for taxis and rental cars to the east. Generally in an heavily urbanized area.	Not Applicable
Functions	**Mitigation for previous permit/other historic use**
This assessment area functions primarily for water storage/flow attenuation seasonally and during significant rainfall events. Limited wetland wildlife functions were observed at the time of the field visit, but may be available during periods of inundation.	Not Applicable
Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected to be found)	Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area)
Except for drainage ditches within the AA, aquatic wildlife use minimal because site is isolated/severed from any significant regional wildlife corridor. Movement between surrounding areas limited due to heavy urbanization and heavy traffic. Wading birds, raccoons, rats possible.	No anticipated utilization by Listed Species due to the type of habitats offered and land use practices. Regionally, the surrounding areas have become increasing developed with roads, highways, existing airport, existing seaport, and other new development.

Observed Evidence of Wildlife Utilization (List species directly observed, or other signs such as tracks, droppings, casings, nests, etc.):

During the site visit, no evidence of wildlife use was observed; no prey base or evidence thereof was observed at the time of the field visit - but may be available within the ditches and as the site floods; species limited by isolation and intense land use surrounding this AA. Wading birds and similar wetland dependent species might be expected as occasional visitors as conditions warrant.

Additional relevant factors:

Based on historic aerials, it appears that this area had been previously cleared for agriculture and later impacted with the shifting of US-1 to the east. It continues to be used as a tree farm. Area appears to be periodically, but minimally, maintained/mowed -- when left fallow open areas colonize with wetland vegetation

Assessment conducted by:	Assessment date(s):
Stephen W. Carney	January 20, 2005 & May 19, 2006
Assessment conducted by:	Assessment date(s):
Michael J. Tust	January 15, 2008

PART II – Quantification of Assessment Area (impact or mitigation)
(See Sections 62-345.500 and .600, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
Ft Lauderdale-Hollywood International Airport (FLL)	Not Applicable	**W-N3b**
Impact or Mitigation	Assessment conducted by:	Assessment date:
Secondary Impact	Stephen W. Carney	January 20, 2005 & May 19, 2006
	Finalized by:	Date finalized:
	Michael J. Tust	January 15, 2008

Scoring Guidance	Optimal (10)	Moderate(7)	Minimal (4)	Not Present (0)
The scoring of each indicator is based on what would be suitable for the type of wetland or surface water assessed	Condition is optimal and fully supports wetland/surface water functions	Condition is less than optimal, but sufficient to maintain most wetland/surface waterfunctions	Minimal level of support of wetland/surface water functions	Condition is insufficient to provide wetland/surface water functions

		w/o pres or current	with
.500(6)(a) Location and Landscape Support	Limited support for many wetland wildlife species provided in the immediate surroundings due to maintenance/mowing of the area, and surrounding land usage. Upstream component linked to the overtopping of ditch and stormwater runoff. No apparent downstream connection - area lower than surroundings to allow water movement off-site. Provides some habitat for refuge with the ditches, seasonal forage etc. within assessment (AA). Heavily travelled roadways encircle this small AA. Exotic vegetation in an adjacent wetland (B. pepper) and some cat-tail affect score.	3	0
.500(6)(b)Water Environment (n/a for uplands)	Presence of standing water, highly dependent on time of visit/season. Standing water present in ditches, but variable in open areas of planting. Limited surface water outflows beyond the limits of AA possible during extreme rain/flood conditions. Mucky soils are present -- soils soggy at time of visit. Water quality is presumed fair - moderate because subject to flooding from stormwater drainage ditch adjacent to US-1. Also possible impacts due to on-site use of pesticides, herbicides, fertilizers.	4	0
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community	A variety herbaceous wetland plants were observed growing between the rows of trees/palms and in association with the drainage ditches. Some observed included: barnyard grass, purple sedge, camphor weed, hurricane grass, tassel flower, water hyssop, cat-tail; Asiatic coinwort; frog-fruit; Cyperus spp. Area maintained/mowed - does not appear to be done on irregular basis. It is not known if herbicide/pesticide/fertilizers are applied within AA.	5	0

Score = sum of above scores/30 (if uplands, divide by 20)	current or w/o pres	with
	0.400	0

If preservation as mitigation,
Preservation adjustment factor = NA
Adjusted mitigation delta = NA

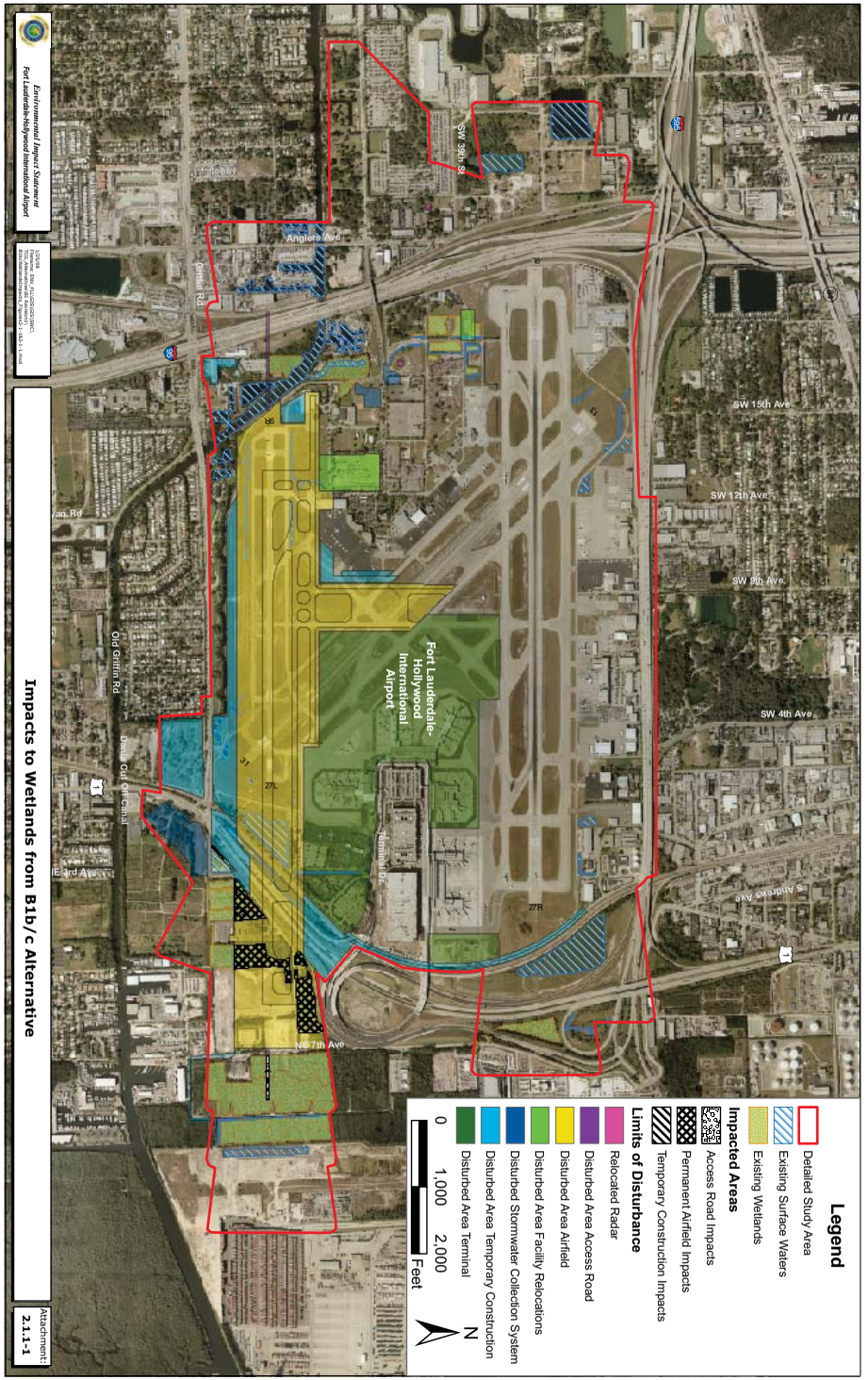
For secondary impact assessment areas
FL = delta x impact acres = 0.10

Delta = [with-current]
0.400

If mitigation
Time lag (t-factor) = NA
Risk factor = NA

For mitigation assessment areas
RFG = delta/(t-factor x risk) = NA

Form 62-345.900(2), F.A.C. [effective date]



BROWARD COUNTY
FLORIDA

AVIATION DEPARTMENT - Fort Lauderdale/Hollywood International Airport
100 Aviation Boulevard • Fort Lauderdale, Florida 33315 • 954-359-6100

Dean Stringer, Manager
FAA Orlando Airports District Office
5950 Hazeltine National Drive, Citadel International
Suite 400, Orlando FL 32822-5024

September 31, 2008

Re: Certification as to Public Hearing, Airport Management Board, Coordination with MPO, and Airport Zoning

In connection with the proposed runway extension at Fort Lauderdale-Hollywood International Airport ("Airport"), this letter hereby certifies the following:

1. An opportunity for a public hearing was given to consider the economic, social, and environmental effects of the proposed project and the project's consistency with the objectives of any planning that the community has carried out;

2. The airport management board has voting representation from the communities in which the project is located or has advised the communities that they have the right to petition the Secretary about a proposed project;

3. The airport sponsor has made available to and has provided upon request to the metropolitan planning organization in the area in which the airport is located, if any, a copy of the proposed amendment to the airport layout plan to depict the project and a copy of any airport master plan in which the project is described or depicted; and

4. To the extent reasonable, the airport sponsor has taken or will take actions to restrict land uses in the airport vicinity, including the adoption of zoning laws, to ensure the uses are compatible with airport operations.

As to Item 1, there have been numerous opportunities for public input, including but not limited to the following:

March 31, 2005: A public meeting and workshop was held at the Broward Convention Center.

May 1, 2007: The FAA conducted a workshop and hearing at the Broward County Convention Center.

June 5, 2007: The Broward County Aviation Department ("BCAD") and the Broward County Board of County Commissioners ("County Commission") held a public hearing at the Broward County Convention Center.

Regarding Item 2, the Airport is entirely located within Broward County, Florida, and the County Commission is the airport management board for the Airport. The County Commission is comprised of nine members elected by districts located in Broward County. Therefore, there is voting representation on the County Commission from the communities within which the project is located.

Regarding Item 3, BCAD participates in the Metropolitan Planning Organization ("MPO"). BCAD representatives have attended the MPO throughout the time of the Airport Master Plan and EIS processes and presented information concerning the proposed runway to the MPO members. The proposed south runway project is also included in the MPO's Transportation Improvement Program ("TIP"). The airport sponsor has made available to and will provide upon request to the metropolitan planning organization in the area in which the airport is located, if any, a copy of the proposed amendment to the airport layout plan to depict the project and a copy of any airport master plan in which the project is described or depicted.

With respect to Item 4, the Airport Sponser hereby provides written assurance that appropriate action, including the adoption of zoning laws, has been or will be taken to the extent reasonable to restrict the use of land next to or near the Airport to uses that are compatible with normal Airport operations.

Please advise if you require any further information regarding the matters addressed hereby.

Sincerely,

Kent G. George,
Director of Aviation

Cc: Bart Vernace, P.E., Assistant Manager, Federal Aviation Administration
Virginia Lane, FAA Project Manager
Mark Perryman, Landrum & Brown
Suzie Kleymeyer, Landrum & Brown, Project Manager
James McCluskie, Director of Planning, BCAD
Christine Lee, Senior Assistant County Attorney

"Pace.Wilber"
<Pace.Wilber@noaa
.gov>
11/25/2008 09:59
AM

To
Virginia Lane/ASO/FAA@FAA
cc
Jocelyn.Karazsia@noaa.gov, Robin
Wiebler <Robin.Wiebler@noaa.gov>
Subject
Re: Fwd: Excerpt from FLL Record of
Decision - NMFS text

Hello Virginia.

By including the highlighted text in the attached excerpt from the Record of Decision (e.g., "the FAA will ensure that the Airport Sponsor, in consultation with NMFS Habitat Conservation Division [HCD], will develop a mitigation and monitoring plan as part of the Section 404 permit process"), we can close the EFH consultation for the purpose of the project's EIS. We remain prepared to work diligently with the local sponsor and FAA to complete the mitigation plan to avoid delays during the 404 permitting process and during the continuation of the EFH consultation that the 404 permitting process will trigger.

Thanks,
Pace Wilber

Subject: Excerpt from FLL Record of Decision - NMFS text

From: Virginia.Lane@faa.gov

Date: Fri, 21 Nov 2008 13:59:27 -0500

To: Jocelyn.Karazsia@noaa.gov

To: Jocelyn.Karazsia@noaa.gov

CC: jackie.sweatt-essick@faa.gov

Jocelyn, based on our telephone discussion today, I have attached a word document with excerpts from the FLL ROD with the referenced NMFS sections per your email. Please have your supervisor,Mr. Wilber, send us an email confirming that FAA has completed the EFH process on Monday November 24. Thanks.

Virginia Lane, A.I.C.P.
Federal Aviation Administration
Orlando Airports District Office
5950 Hazeltine National Drive
Orlando, FL 32822
Tel: 407/812/6331 Ext. 129
Fax: 407/812/6978

Pace Wilber, Ph.D.
Atlantic Branch Chief, Charleston (F/SER47)
Southeast Regional Office, NOAA Fisheries
PO Box 12559
Charleston, SC 29422-2559

843-953-7200
FAX 843-953-7205
pace.wilber@noaa.gov

http://sero.nmfs.noaa.gov/dhc/habitat.htm

(See attached file: Excerpt from FLL Record of Decision -NMFS text.doc)

Excerpt from FLL Record of Decision- SECTION 4 SUMMARY OF MITIGATION MEASURES……NMFS recommended text in blue.

Broward County, as the applicant, will apply for all required permits. Broward County has obtained permits from the USACE and the SFWMD that allow for habitat restoration and enhancement within West Lake Park.[1] Broward County has provided a letter indicating their commitment to implement the wetland mitigation that would be required for project impacts.[2] A Department of the Army permit under Section 404 of the Clean Water Act will be required for this project and a modification to the SFWMD Environmental Resource Permit (ERP) No. 06-00339-S for impacts to jurisdictional wetlands. In response to the NMFS Conservation Recommendations[3], the FAA will ensure that the Airport Sponsor, in consultation with NMFS Habitat Conservation Division (HCD), will develop a mitigation and monitoring plan as part of the Section 404 permit process.

Excerpt from FLL Record of Decision- SECTION 6 FINDINGS AND DETERMINATIONS……NMFS recommended text in blue.

The FAA provided an Essential Fish Habitat (EFH) assessment in accordance with 50 CFR Section 600.920(e) for an EFH assessment in the Draft EIS. In response to their comments on the Draft EIS, the NMFS provided Conservation Recommendations in accordance with Section 305(b)(4)(A) of the Magnuson-Stevens Act, and also requested additional information in order to fully evaluate the proposed project.[4] The FAA provided the requested additional information and the FAA's response to the NMFS EFH Conservation Recommendations.[5] The FAA has fully considered the EFH Conservation Recommendations in accordance with the requirements of Section 305(b)(4)(B) of the Magnuson-Stevens Act. Consistent with the NMFS EFH Conservation Recommendations, a *Conceptual Wetland Mitigation Plan* to compensate for unavoidable impacts to wetlands and EFH is provided in the Final EIS, Appendix M, B*iological Resources*. The *Conceptual Wetland Mitigation Plan* references a monitoring plan for the ecological success of the off-site compensatory mitigation as described in Section Five of the *Conceptual Wetland Mitigation Plan*. Further refinement of the *Conceptual Wetland Mitigation Plan* and the monitoring plan are to be addressed by Broward County and the USACE during the Section 404 permitting process.

NMFS provided comments on the Final EIS regarding the additional information referenced above.[6] The FAA resubmitted the additional information to NMFS for their review and comment and conducted further coordination with NMFS regarding their Conservation Recommendations.[7]

In response to the NMFS Conservation Recommendations, the FAA will ensure that the Airport Sponsor, in consultation with NMFS HCD, will develop a mitigation and monitoring plan as part of the 404 permit process. Based on the preceding, NMFS has indicated that the FAA has completed its coordination in accordance with the Magnuson-Stevens Act. [Email from NMFS will confirm this per Jocelyn 11-21-2008]

Excerpt from FLL Record of Decision SECTION 8 CONDITIONS OF APPROVAL, Subsection 8.2 IMPLEMENTATION OF MITIGATION…..

In approving this ROD, the FAA is identifying mitigation measures that it deems necessary to avoid or minimize significant environmental impacts associated with approval of the selected alternative.

Section 4 (*Summary of Mitigation Measures)* of this ROD discusses the mitigation actions that are made conditions of approval of this ROD. (These mitigation measures are discussed greater detail in the Final EIS, Chapter Eight, *FAA's Preferred Alternative* and for wetland mitigation in Appendix M.3 *Conceptual Wetland Mitigation Plan*). The approvals contained in this ROD are specifically conditioned upon full implementation of these mitigation measures.

In accordance with 40 CFR § 1505.3, the FAA will take appropriate steps, through federal grant assurances and conditions, airport layout plan approvals, and contract plans and specifications, to ensure that the mitigation actions outlined in this ROD are implemented during project development, and will monitor the implementation of these mitigation actions as necessary to assure that representations made in the Final EIS with respect to mitigation are carried out. These mitigation measures will be made the subject of special conditions included in any future grants of federal financial assistance to the Airport Sponsor.

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1 United States Army Corps of Engineers (USACE) Permit Number SAJ-2002-00072 and South Florida Water Management District (SFWMD) Permit Number 06 04016 P.

2 Letter from Marc Gambrill, Broward County Aviation Department, to Virginia Lane, FAA Orlando Airports District Office. Dated December 4, 2007

3 Letter from Paul Weller for Miles M. Croom, Assistant Regional Administrator, Habitat Conservation Division, National Marine Fisheries Service, to Virginia Lane, FAA Orlando Airports District Office. Dated: May 17, 2007

4 Letter from Paul Weller for Miles M. Croom, Assistant Regional Administrator, Habitat Conservation Division, National Marine Fisheries Service, to Virginia Lane, FAA Orlando Airports District Office, RE: F/SER4:JK/pw. Dated: May 17, 2007

5 Letter from Virginia Lane, FAA Orlando Airports District Office, to Jocelyn Karazsia, National Marine Fisheries Service, with enclosure Direct, Secondary, and Cumulative Effects on Essential Fish Habitat. Dated: September 29, 2008.

6 Letter from Paul Weller for Miles M. Croom, Assistant Regional Administrator, Habitat Conservation Division, National Marine Fisheries Service, to Virginia Lane, FAA Orlando Airports District Office, RE: F/SER4:JK/pw. Dated: July 25, 2008

7 Letter from Virginia Lane, FAA Orlando Airports District Office, to Jocelyn Karazsia, National Marine Fisheries Service, with enclosure *Direct, Secondary, and Cumulative Effects on Essential Fish Habitat*. Dated: September 29, 2008.

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The primary responsibility for implementation of the mitigation measures that are conditions of approval of this ROD lies with the Airport Sponsor. The FAA will have oversight responsibility to ensure the mitigation measures are implemented. The FAA finds that these measures constitute all reasonable steps to minimize harm and that they represent all practicable means to avoid or minimize harm to wetlands and other environmental harms from the selected alternative and proposed federal actions.

AVIATION DEPARTMENT • Fort Lauderdale/Hollywood International Airport
100 Aviation Boulevard • Fort Lauderdale, Florida 33315 • 954-359-6100

December 12, 2008

Mr. Bart Vernace
Assistant Manager
Federal Aviation Administration
Orlando Airports District Office
5950 Hazeltine National Drive, Suite 400
Orlando, FL 32822

RE: Broward County's Mitigation of the Environmental Impacts Resulting from Runway Expansion in Accordance with the Conditions of the Record of Decision.

Dear Mr. Vernace:

You have asked this office to address Broward County's mitigation of noise impacts and wetlands mitigation pursuant to the conditions anticipated to be included in a Record of Decision from the FAA incorporating the FAA's Preferred Alternative (B1b) that was identified in the Final Environmental Impact Statement (EIS).

We have reviewed the mitigation measures as disclosed in the Final EIS and we understand that the FAA will require mitigation measures as a condition of the Record of Decision.

The Final EIS identified three environmental categories where adverse environmental impacts would occur: noise, compatible land use and wetlands.

Noise and Compatible Land Use Mitigation
In the Final EIS, the FAA has identified mitigation measures for incompatible land use located within the 65 DNL noise exposure contour of the FAA's Preferred Alternative (B1b). Those measures were based on Broward County's seven proposed noise mitigation principles.[1] Once the Record of Decision is issued, Broward County will address the conditions of the ROD, including implementation of a Noise and Compatible Land Use Mitigation Program which may include any one or a combination of the following measures:

- The mitigation measures (sound insulation, purchase assurance/sales guarantee and mobile home mitigation) will address a neighborhood/subdivision area as a whole to ensure, to the extent practicable, that community cohesion will be maintained when the mitigation strategies are applied; thus, mitigation areas may extend beyond the 65 DNL noise contour to follow natural geographic boundaries, street patterns and contiguous neighborhood boundaries

- Acquisition of mobile home units and the relocation of residents in accordance with the *Uniform Relocation Assistance and Real Property Acquisition Policies Act* (49 CFR Part 24) with the FAA's recommendation that the future use of the acquired property be controlled by recorded restrictive covenants

- Sound insulation of eligible single-family and multi-family units with the FAA's recommendation that an avigation easement be acquired

- Purchase guarantee/sales assistance (with sound insulation) for eligible single-family and multi-family units with the FAA's recommendation that an avigation easement be acquired

Wetlands
We acknowledge that the Record of Decision will contain conditions pertaining to wetlands mitigation. Broward County will offset these impacts as appropriate through one or more of the following measures: encumbering existing mitigation credits previously developed by Broward County at existing mitigation sites, by performing on-site mitigation if necessary, and by using mitigation credits identified in the U.S. Army Corps of Engineers (USACE) Permit No. SAJ-2002-00072 (IP-LAO) and the South Florida Water Management District (SFWMD) Individual Resource Permit No. 06-04016-P. This includes obtaining a USACE Section 404 Permit and a SFWMD Environmental Resource Permit (ERP) for the development of the FAA's Preferred Alternative (B1b).[2]

Mitigation measures discussed in this letter have previously been addressed by the County Commission in numerous meetings and workshops and the measures to implement specific programs will be taken by the Commission following issuance of a ROD.

Sincerely,

Kent G. George, A.A.E.
Director of Aviation

KGG/ml

C: Bertha Henry, County Administrator
Dick Brossard, Interim Deputy County Administrator
Jamie McCluskie, Director of Airport Planning, Aviation
Mark Perryman, Landrum & Brown

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[1] Letter from Kent G. George, A.A.E., Director of Aviation, Broward County Aviation Department, to Virginia Lane, FAA Orlando Airports District Office, Subject: Broward County Proposed Noise Mitigation Principles. Dated November 9, 2007.

[2] United States Army Corps of Engineers (USACE) Permit Number SAJ-2002-00072 and South Florida Water Management District (SFWMD) Permit Number 06 04016 P.