This is an Agreement ("Agreement") between Broward County, a political subdivision of the State of Florida ("County"), and Ricondo and Associates, Inc. a corporation authorized to transact business in the State of Florida ("Consultant") (collectively referred to as the "Parties").

IN CONSIDERATION of the mutual terms, conditions, promises, covenants, and payments hereinafter set forth, the Parties agree as follows:

ARTICLE 1. DEFINITIONS AND IDENTIFICATIONS

For the purposes of this Agreement, reference to one gender shall include the other, use of the plural shall include the singular, and use of the singular shall include the plural. The following definitions and identifications set forth below apply unless the context in which the word or phrase is used requires a different definition:

1.1 **Airport** means the Fort Lauderdale-Hollywood International Airport (FLL) and North Perry Airport (HWO), located in Broward County, Florida, as described in the Master Plan Update, including such additional property that may be acquired to implement development as described therein.

1.2 **Aviation Department or BCAD** means the Broward County Aviation Department (BCAD), or any successor agency.

1.3 **Board or Commission** means the Board of County Commissioners of Broward County, Florida.

1.4 **Contract Administrator** means the Director of the Broward County Aviation Department, or his or her designee, pursuant to written delegation by the Director of the Broward County Aviation Department, or some other employee expressly designated as Contract Administrator in writing by the County Administrator.

1.5 **County Administrator** means the administrative head of the County pursuant to Sections 3.02 and 3.03 of the Broward County Charter.

1.6 **County Attorney** means the chief legal counsel for County appointed by the Board.

1.7 **County Business Enterprise ("CBE")** means a small business located in Broward County, Florida, which meets the criteria and eligibility requirements of Broward County's CBE Program and must be certified by Broward County's Office of Economic and Small Business Development.
1.8 Disadvantaged Business Enterprise ("DBE") means as defined in Title 49 CFR Part 26 or other applicable federal law in connection with a contract which is funded in whole or in part from federal governmental sources as specified in Title 49 CFR Part 26 Sec. 26.3.

1.9 Lump Sum means when the method of compensation is that of "Lump Sum," such phrase means that Consultant shall perform or cause to be performed the described services for total compensation in the stated amount.

1.10 Master Plan Update means the then current Master Plan Update for the Airport, as it may be amended from time to time.

1.11 Maximum Amount Not-To-Exceed means when the method of compensation is that of "Maximum Amount Not-To-Exceed" or "Maximum Not-To-Exceed Amount," such phrase means that Consultant shall perform or cause to be performed all services during the period set forth for total compensation based on actual hours and costs incurred, in the amount of, or less than, the stated amount.

1.12 Notice To Proceed means a written notice to proceed, authorizing the Consultant to commence work under this Agreement, or to proceed with a subsequent phase or task of work under this Agreement. The written Notice to Proceed that authorizes the Consultant to commence work under this Agreement shall be issued by the Contract Administrator. The written Notice(s) to Proceed for subsequent phases or tasks of the Project shall be issued by the Contractor Administrator.

1.13 Project means Airport Master Plan Update Consultant Services

1.14 Scope of Services means the work and services described in Article 3, and on Exhibit A and other applicable exhibits hereto, or in a Work Authorization, as applicable.

1.15 Subconsultant means a firm, partnership, corporation, independent contractor (including 1099 individuals) or combination thereof providing services to the County through the Consultant for all or any portion of the advertised work.

1.16 Work Authorization means a written order issued by the Contract Administrator directing Consultant to perform services and detailing the terms of payment and scope of work.

ARTICLE 2. PREAMBLE

In order to establish the background, context, and frame of reference for this Agreement and to generally express the objectives and intentions of the respective parties hereto, the following statements, representations, and explanations shall be accepted as predicates for the undertakings and commitments included within the provisions which follow and may be relied upon by the parties as essential elements of the mutual considerations upon which this Agreement is based.
2.1 County has budgeted funds for the Project. It is anticipated that the Project may be eligible for federal grant funds and State of Florida grant funds.

2.2 Award of this Agreement does not guarantee work will be authorized. A failure by the County to authorize work under this Agreement or to issue a Notice to Proceed shall not be deemed a breach of this Agreement.

2.3 Negotiations pertaining to the services to be performed by Consultant were undertaken between Consultant and members of County staff, and this Agreement incorporates the results of such negotiations.

2.4 If the term of this Agreement extends beyond a single fiscal year of County, the continuation of this Agreement beyond the end of any fiscal year shall be subject to the availability of funds from County in accordance with Chapter 129, Florida Statutes, as it may be amended.

ARTICLE 3. SCOPE OF SERVICES

3.1 Consultant's services shall consist of the phases and tasks set forth in Exhibit A and any Work Authorization, including all necessary, incidental, and related activities and services. The parties recognize that additional work may subsequently be identified that falls within the Project due to scheduling or other requirements. If the County determines in its sole and exclusive discretion that such additional work may be included in this Agreement, then subject to negotiation and agreement of the parties as to the terms thereof, any such additional work shall be reflected in an amendment to this Agreement, or a Work Authorization, as appropriate.

3.2 The Scope of Services does not delineate every detail and minor work task required to be performed by Consultant to complete the Project. If, during the course of the performance of the services included in this Agreement, Consultant determines that work should be performed to complete the Project which is in Consultant's opinion outside the level of effort originally anticipated, whether or not the Scope of Services identifies the work items, Consultant shall notify Contract Administrator in writing in a timely manner before proceeding with the work. If Consultant proceeds with said work without notifying the Contract Administrator, said work shall be deemed to be within the original level of effort, whether or not specifically addressed in the Scope of Services. Notice to Contract Administrator does not constitute authorization or approval by County to Consultant to perform the work. Performance of work by Consultant outside the originally anticipated level of effort without prior written County approval is at Consultant's sole risk.

3.3 County and Consultant acknowledge that Exhibit A and any Work Authorizations issued hereunder are for services related to the Project. The County may elect to negotiate for additional services needed for the Project that are beyond those described in Exhibit A. The County may procure said additional services from another vendor or consultant or the County...
may negotiate with the Consultant for additional scopes of services, compensation, time of performance and other related matters at County's sole option. County shall have the right at any time to immediately terminate any negotiations with Consultant for additional services at no cost to County and procure services from another source. Nothing in these provisions or this Agreement shall in any way be deemed to obligate the County to procure additional services from Consultant. In addition, the County shall have the right, at its sole and exclusive discretion, to terminate any one or more tasks or phases of service described in Exhibit A, or in this Agreement, from this Agreement, and to procure services from another source. In such event: (i) Consultant shall be paid for services performed through the date of termination, subject to other applicable provisions hereof; and (ii) any phases or tasks not terminated by such written notice shall continue to be covered by this Agreement and Consultant shall perform the services required by such phases or tasks pursuant to the terms and conditions of this Agreement.

3.4 Codes/Regulations. Consultant, as it relates to the services required to be performed under this Agreement, represents and acknowledges to the County that it and its subconsultants are knowledgeable as to any and all codes, rules and regulations applicable in the jurisdictions in which the Project is located and the funding sources for the Project, including without limitation, County and local ordinances and codes, Florida laws, rules, regulations and grant requirements, and Federal laws, rules, regulations, advisory circulars and grant requirements, including without limitation, PFC requirements, requirements of the Americans with Disabilities Act, and requirements of the Federal Aviation Administration ("FAA"), and the Federal Transportation Security Administration ("TSA") and the Florida Department of Transportation ("FDOT"). In the performance of services under this Agreement, the Consultant and its subconsultants shall comply with all such laws, codes, rules, regulations, advisory circulars and requirements now in effect and as may be amended or adopted at any time during the term of this Agreement, and shall further take into account in the performance of its services hereunder, all known or publicly announced pending changes to the foregoing. The Consultant and its subconsultants shall provide any and all certifications to the County as to compliance with such laws, codes, rules, regulations, advisory circulars and requirements, as may be required by any governmental body, including FAA, TSA, FDOT and County agencies, or as may be requested by the Aviation Department. The Consultant shall insert all required FAA, TSA and FDOT provisions in its subconsultant agreements for the Project. Consultant shall review all documents for conflicts between the rules, regulations and codes and provide a summary report of any conflicts and recommend a solution for review and approval by the Contract Administrator. The Consultant will incorporate the provisions of this Section without modification into all agreements with its subconsultants.

3.5 Licensing. Consultant represents that it and its subconsultants are experienced and fully qualified to perform the services contemplated by this Agreement, and that it and its subconsultants are properly licensed pursuant to all applicable laws, rules and regulations to perform such services.

3.6 Knowledge and Skills. Consultant represents that it and its subconsultants have the knowledge and skills, either by training, experience, education, or a combination thereof, to
completely and competently perform the duties, obligations, and services to be provided pursuant to this Agreement and to provide and perform such services to County's satisfaction for the agreed compensation.

3.6.1 Consultant shall perform its duties, obligations, and services under this Agreement in a skillful and professional manner, and shall cause its subconsultants to also perform their duties, obligations and services under this Agreement in a skillful and professional manner.

3.6.2 The quality of Consultant's and its subconsultants' performance and all interim and final product(s) provided to or on behalf of County shall be comparable to the best local and national standards.

3.6.3 Nothing in this Agreement shall relieve the Consultant of its prime and sole responsibility for the performance of the work under this Agreement. In addition to all other rights and remedies that County may have under this Agreement, Contract Administrator may require the Consultant to correct any deficiencies which result from Consultant's failure to perform in accordance with the above standards.

3.7 In order to avoid a duplication of effort or expense, Consultant agrees to utilize any County-provided information, including but not limited to, plans, specifications, information, data, reports or analyses that may be prepared or generated by other consultants retained by the County that may be required in connection with Consultant's services hereunder, subject to Consultant's independent review and revalidation, if necessary. In addition, County may provide any plans, specifications or any information, obtained or prepared by Consultant, including, but not limited to data, reports or analyses to other consultants retained by the County or to any other party. Consultant shall perform due diligence in connection with the use of such information.

3.8 The County shall have the right, at any time and in its sole discretion, to submit for review to other consultants engaged by the County any or all parts of the work performed by the Consultant, and the Consultant shall cooperate fully in such review.

3.9 Work Authorizations. All services identified in Exhibit A and any Optional Services to be performed under this Agreement shall be authorized through the issuance of Work Authorizations. The issuance of a Work Authorization by the Contract Administrator in substantially the form of Exhibit E shall be required before services may begin. Such services may be authorized by the Contract Administrator, in his or her sole discretion, subject to the Maximum-Not-To-Exceed or Lump Sum amounts established for each item (as may be increased pursuant to the provisions hereof) and the maximum amount set forth in the Work Authorization.

3.9.1 Before any service is commenced pursuant to a Work Authorization, Consultant shall supply the Contract Administrator with a written proposal for all charges expected
to be incurred for such service, which proposal shall be reviewed by the Contract Administrator.

3.9.2 All Work Authorizations shall contain, at a minimum, the following information and requirements:

3.9.2.1 A description of the work to be undertaken (which description must specify in detail the individual tasks and other activities to be performed by Consultant), a reference to this Agreement pursuant to which the work to be undertaken is authorized, and a statement of the method of compensation.

3.9.2.2 A budget establishing the amount of compensation, which amount shall constitute a maximum and shall not be exceeded unless prior written approval of Contract Administrator is obtained. The information contained in the budget shall be in sufficient detail so as to identify the various elements of costs.

3.9.2.2.a Salary costs in effect at the time of negotiation for each Work Authorization shall remain in effect throughout the life of the Work Authorization, regardless of authorized Consumer Price Index (CPI) increases at the time of any amendment or Consultant's annual salary increases.

3.9.2.2.b With respect to any Maximum Not-To-Exceed service item, if additional work is required over the amount set forth in the Work Authorization, any additional compensation must be reflected in an amendment to the Work Authorization signed by the Contract Administrator and the Consultant, so long as the maximum amount established pursuant to this Agreement for such item is not exceeded. In the event the County does not approve an increase in the amount, and the need for such action is not the fault of the Consultant, the authorization shall be terminated and Consultant shall be paid in full for all work completed to that point, but, in no case, shall the Maximum-Not-To-Exceed amount be exceeded.

3.9.2.3 A time established for completion of the work or services undertaken by Consultant or for the submission to County of documents, reports, and other information pursuant to this Agreement.

3.9.2.4 Any other additional instructions or provisions relating to the work authorized pursuant to this Agreement.

3.9.2.5 Work Authorizations shall be dated, serially numbered, and signed.
3.9.3 At the conclusion of the term of this Agreement, no further Work Authorizations shall be issued. The Consultant shall be required however to complete all services under open Work Authorizations in accordance with the schedule for completion for each then outstanding Work Authorization. Pursuant to the Administrative Code, Section 21.31.g., a Work Authorization shall not extend a contract beyond the contract term without the approval of the Board.

ARTICLE 4. TIME FOR PERFORMANCE; DAMAGES FOR DELAY

4.1 The initial term of this Agreement shall be for the period beginning on the date of execution of this Agreement by the Board and ending three years from that date ("Initial Term"). At its option, the County may renew this Agreement for two (2) additional one (1) year periods. The option to renew may be exercised by the County's Director of Purchasing by written notice of renewal to Consultant.

4.2 Consultant shall perform the services described in Exhibit A or any Work Authorization within the time periods specified therein. Such time periods shall commence from the date of the Notice to Proceed for such services.

4.3 Time of the Essence. Time shall be deemed to be of the essence in performing the duties, obligations and responsibilities required by this Agreement.

4.4 Prior to the commencement of any services under this Agreement (including commencing services under a Work Authorization), Consultant must receive a written Notice to Proceed from the Contract Administrator. Thereafter, Consultant must receive a written Notice to Proceed from the Contract Administrator prior to beginning the performance of services for any other phases or tasks under this Agreement. Prior to granting approval for Consultant to proceed to a subsequent phase or task, the Contract Administrator may, at his or her sole option, require Consultant to submit itemized deliverables/documents for the Contract Administrator's review. The Consultant acknowledges and agrees that (1) the Project covered by this Agreement is one of several projects being administered at the Airport; (2) there must be coordination in the scheduling and implementation of all projects being administered at the Airport; and (3) in some circumstances, the commencement of certain phases or tasks associated with one or more of the projects will be tied to the completion of, or the schedules of, one or more phases or tasks of other projects. Accordingly, the Consultant acknowledges and agrees that the Contract Administrator may refuse to issue a Notice to Proceed with any phase or task of the Project or under a Work Authorization described by this Agreement, if such is deemed necessary in the coordination of other projects or in the implementation and scheduling of any other project. The parties acknowledge that, due to the nature and complexity of the Project, the Project schedule may require revision based upon subsequent circumstances. Therefore, the Project schedule may be revised with the prior written consent of the Contract Administrator. The Contract Administrator retains the final discretion to adjust the Project schedule or not.

4.5 In the event Consultant is unable to complete any services because of delays resulting
from untimely review by County or other governmental authorities having jurisdiction over the Project, and such delays are not the fault of Consultant, or because of delays which were caused by factors outside the control of Consultant, County shall grant a reasonable extension of time for completion of the services and shall provide reasonable compensation, if appropriate. It shall be the responsibility of Consultant to notify the Contract Administrator promptly in writing whenever a delay in approval by a governmental agency is anticipated or experienced, and to inform the Contract Administrator of all facts and details related to the delay.

4.6 In the event Consultant fails to complete the phases and tasks of services identified in Exhibit A or identified in any Work Authorization, on or before the applicable time for performance, County shall deduct from monies otherwise due the Consultant the sum that is established in each Work Authorization for each calendar day after the specified time for performance, plus approved time extensions thereof, until completion of the phase or task.

These amounts are not penalties but are liquidated damages to County due to Consultant's inability to proceed with, and complete, the applicable tasks or services in a timely manner pursuant to the agreed upon Project schedule. Liquidated damages are hereby fixed and agreed upon by the parties, recognizing the impossibility of precisely ascertaining the amount of damages that will be sustained by County as a consequence of such delay, and both parties desiring to obviate any question or dispute concerning the amount of said damages and the cost and effect of the failure of Consultant to complete the respective phases or tasks within the applicable time for performance. This provision shall not affect the rights and obligations of either party as set forth in Section 10.11, Indemnification of County.

ARTICLE 5. COMPENSATION AND METHOD OF PAYMENT

Absent amendment, the total cumulative amount authorized for all Work Authorizations issued under this Agreement to CONSULTANT may not exceed a total maximum not to exceed Agreement amount of $4,290,603.00. The method of compensation to be paid under each individual Work Authorization shall be pursuant to one or a combination of the following:

5.1 AMOUNT AND METHOD OF COMPENSATION

5.1.1 Maximum Amount Not-To-Exceed Compensation. Compensation to Consultant for the performance of Basic Services identified in Exhibit A as payable on a "Maximum Amount Not-To-Exceed" basis, and as otherwise required by this Agreement, shall be based upon the Salary Costs as described in Section 5.2 up to a maximum amount not-to-exceed as approved in Work Authorizations. Consultant shall perform all services designated as Maximum Amount Not-To-Exceed set forth herein for total compensation in the amount of or less than that stated above.

For any phase or task that is identified as a Maximum Amount Not-To-Exceed, the Contract Administrator may transfer funds to any other phase or task. Notwithstanding, the receiving item may not be increased by an aggregate amount that is greater than the
Director of Aviation's change order authority (as provided in Section 21.73(c) of the Administrative Code) unless Board approval is first obtained.

5.1.2 **Lump Sum Compensation.** Compensation to Consultant for the performance of all Basic Services identified in Exhibit A as payable on a "Lump Sum" basis, and as otherwise required by this Agreement, shall be not more than a total lump sum of amount as approved in Work Authorizations $3,990,603.00.

5.1.3 **Optional Services.** County has established an amount of $300,000.00 for potential Optional Services identified in Exhibit F which may be utilized pursuant to Article 6. Unused amounts of these Optional Services monies shall be retained by County.

5.1.4 **Reimbursable Expenses.** County has not established an amount for potential reimbursable expenses which may be utilized pursuant to Section 5.3 as those items are included in the Lump Sum. If required with Optional Services, an amount for potential reimbursable expenses may be established at that time. Unused amounts of those monies established for reimbursable expenses shall be retained by County.

5.1.5 **Salary Rate.** The maximum hourly rates payable by County for each of Consultant's employee categories are shown on Exhibit B and are further described in Section 5.2. County shall not pay Consultant any additional sum for reimbursable expenses, additional or optional services, if any, unless otherwise stated in Section 5.3 and Article 6.

If, for services designated as payable on a Maximum Amount Not-To-Exceed basis, Consultant has "lump sum" agreements with any subconsultant(s), then Consultant shall bill all "lump sum" subconsultant fees with no "markup." Likewise, Consultant shall bill, with no mark-up, all maximum not to exceed subconsultant fees using the employee categories for Salary Costs on Exhibit B as defined in Section 5.2 and Reimbursables defined in Section 5.3. All Subconsultant fees shall be billed in the actual amount paid by Consultant.

5.1.6 The dollar limitation set forth in Section 5.1 is a limitation upon, and describes the maximum extent of, County's obligation to Consultant, but does not constitute a limitation, of any sort, upon Consultant's obligation to incur such expenses in the performance of services hereunder.

5.2 **SALARY COSTS.** The term Salary Costs as used herein shall mean the hourly rate actually paid to all personnel engaged directly on the Project, as adjusted by an overall multiplier which consists of the following: 1) a fringe benefits factor; 2) an overhead factor; and, 3) an operating profit margin, as set forth on Exhibit B. Said Salary Costs are to be used only for time directly attributable to the Project. The fringe benefit and overhead factors shall be certified by an independent Certified Public Accountant in accordance with the Federal Acquisition Regulation ("FAR") guidelines. Said certification shall be dated within one hundred eighty (180) days after
Consultant's most recently completed fiscal year. If the certification for the most recently completed fiscal year is not available at the time of contracting, the certification shall be provided when it becomes available, provided however, Consultant certifies that the rates and factors set forth herein are accurate, complete, and consistent with the FAR guidelines at the time of contracting. If applicable, Exhibit B(s) shall be modified to reflect any reduction in the FAR audited overhead and fringe benefit rates from the rates provided at the time of contracting. The modified Exhibit B shall be effective retroactive to the date of execution of the Agreement, and if applicable, the Consultant shall reimburse the County for any overbilling.

5.2.1 Consultant shall require all of its subconsultants to comply with the requirements of Section 5.2. Subconsultants may be exempted from the FAR audit requirements of Section 5.2 upon application to, and written approval by, the County Auditor.

5.2.2 Salary Costs for Consultant and subconsultants as shown in Exhibit B are the Maximum Billing Rates which are provisional, subject to audit of actual costs, and if the audit discloses that the actual costs are less than the costs set forth on Exhibit B for the Consultant or any subconsultant, the Consultant shall reimburse the County based upon the actual costs determined by the audit.

5.2.3 Unless otherwise noted, the Salary Costs stated above are based upon the Consultant's "home office" rates. Should it become appropriate during the course of the agreement that a "field office" rate be applied, then it is incumbent upon the Consultant to submit a supplemental Exhibit B reflective of such rates for approval by Contract Administrator and invoice the County accordingly.

5.2.4 The total hours payable by the County for any "exempt" or "non-exempt" personnel shall not exceed forty (40) hours in any week. In no event shall Consultant be paid additional compensation for exempt employees. In the event the work requires non-exempt personnel to work in excess of 40 hours per week (overtime), any additional hours must be authorized in advance, in writing, by the Contract Administrator. In such an event, Salary Costs for overtime hours shall be payable at no more than one and one half of the maximum hourly rate as shown on Exhibit B, adjusted by a multiplier reflective of applicable overhead and fringe costs, if any, and the agreed upon operating profit margin.

5.2.5 Consultant and any of its subconsultants may alternatively use a "Safe Harbor" combined fringe benefit and overhead rate of 110% in lieu of providing fringe benefit and overhead cost factors certified by an independent Certified Public Accountant in accordance with the Federal Acquisition Regulation ("FAR") guidelines. The Safe Harbor rate, once elected, shall remain in place for the entire term of the Agreement, and be applicable for use as "home" and "field" fringe benefit and overhead rates, if applicable, and shall not be subject to audit under this Agreement. All other provisions of Section 5.2 remain in place.
5.2.6 The maximum hourly rates shown on Exhibit B are subject to change annually beginning on the second anniversary of the contract execution date and on each contract year thereafter upon written request thirty (30) days prior to the anniversary date by Consultant and approval by the Contract Administrator. Any increase in these rates shall be limited to the lesser of the change in cost of living or three percent (3%). The increase or decrease in CPI shall be calculated as follows: the difference of CPI current period less CPI previous period, divided by CPI previous period, times 100. The CPI current period shall mean the most recent published monthly index prior to contract anniversary. The CPI previous period shall mean for the same month of the prior year. All CPI indices shall be obtained from the U.S. Department of Labor table for Consumer Price Index - All Urban Consumers (Series ID CUURA320SA0) for the area of Miami-Fort Lauderdale, FL (All Items), with a base period of 1982-84 = 100. Any changes to the hourly rates shall be set forth on an amended Exhibit B executed by the Contract Administrator and the Consultant.

5.3 REIMBURSABLES. For reimbursement of any travel costs, travel-related expenses, or other direct nonsalary expenses directly attributable to this Project permitted under this Agreement, Consultant agrees to adhere to Section 112.061, Florida Statutes, except to the extent, if any, that Exhibit B expressly provides to the contrary. County shall not be liable for any such expenses that have not been approved in advance, in writing, by the Contract Administrator. Reimbursable subconsultant expenses are limited as described herein when the subconsultant agreement provides for reimbursable expenses.

5.4 METHOD OF BILLING

5.4.1 For Maximum Amount Not-To-Exceed Compensation under Section 5.1.1, Consultant shall submit billings which are identified by the specific project number on a monthly basis in a timely manner for all Salary Costs and Reimbursables attributable to the Project. These billings shall identify the nature of the work performed, the total hours of work performed and the employee category of the individuals performing same. Billings shall itemize and summarize Reimbursables by category and identify same as to the personnel incurring the expense and the nature of the work with which such expense was associated. Where prior written approval by Contract Administrator is required for Reimbursables, a copy of said approval shall accompany the billing for such reimbursable. Billings shall also indicate the cumulative amount of CBE/DBE participation to date. The statement shall show a summary of Salary Costs and Reimbursables with accrual of the total and credits for portions paid previously. External Reimbursables and subconsultant fees must be documented by copies of invoices or receipts which describe the nature of the expenses and contain a project number or other identifier which clearly indicates the expense is identifiable to the Project. Subsequent addition of the identifier to the invoice or receipt by Consultant is not acceptable except for meals and travel expenses. Internal expenses must be documented by appropriate Consultant's cost accounting forms with a summary of charges by category. When requested, Consultant shall provide backup for
past and current invoices that records hours and Salary Costs by employee category, Reimbursables by category, and subcontractor fees on a task basis, so that total hours and costs by task may be determined.

5.4.2 For Lump Sum Compensation under Section 5.1.2. Consultant shall submit billings which are identified by the specific project number on a monthly basis in a timely manner. These billings shall identify the nature of the work performed, the phase of work, and the estimated percent of work accomplished. Billings for each phase shall not exceed the amounts allocated to said phase. Billings shall also indicate the cumulative amount of DBE participation to date. The statement shall show a summary of fees with accrual of the total and credits for portions paid previously. When requested, Consultant shall provide backup for past and current invoices that record hours, salary costs, and expense costs on a task basis, so that total hours and costs by task may be determined.

5.5 METHOD OF PAYMENT

5.5.1 County shall pay Consultant within thirty (30) calendar days from receipt of Consultant’s proper statement, as defined by County’s Prompt Payment Ordinance, ninety percent (90%) of the total shown to be due on such statement. When the services to be performed on each phase of the Project are fifty percent (50%) complete and upon written request by Consultant and written approval by the Contract Administrator that the Project is progressing in a satisfactory manner, the Contract Administrator, in his or her sole discretion, may authorize that subsequent payments for each phase may be increased to ninety-five percent (95%) of the total shown to be due on subsequent statements. Where practicable, and upon request, County may make incremental acceptance of a portion of the work and release applicable retainage. No amount shall be withheld from payments for Reimbursables.

5.5.2 Upon Consultant’s satisfactory completion of any task or phase of the Project or within a Work Authorization, and after the Contract Administrator’s review and approval, and following receipt of all applicable deliverables, County shall remit to Consultant the amounts previously withheld. Final payment for the Project must be approved by the Director of the Broward County Purchasing Division.

5.5.3 Notwithstanding any provision of this Agreement to the contrary, the Consultant shall not be entitled to payment of any pay application unless the Contract Administrator is satisfied that the pay application reflects a level of effort and stage of completion of the respective deliverables that is in accordance with the schedules previously agreed to by the Consultant and the Contract Administrator, as set forth in Exhibit A, or in a Work Authorization.

5.5.4 Payment will be made to Consultant at: Ricondo and Associates, Inc. Attention: Accounting Department
5.5.5 Except as otherwise provided in Article 9, Consultant shall pay its subconsultants and suppliers within fifteen (15) calendar days following receipt of payment from the County for such work or supplies. Consultant agrees that if it withholds an amount as retainage from its subconsultants or suppliers, that it will release such retainage and pay same within fifteen (15) calendar days following receipt of payment of retained amounts from County.

5.5.6 Consultant agrees that nonpayment of any of its subconsultants or suppliers as required by this Article shall be a material breach of this Agreement and that County may, at its option, increase allowable retainage or withhold progress payments unless and until Consultant demonstrates timely payments of sums due to such subconsultants or suppliers. Consultant agrees that the presence of a "pay when paid" provision in a subconsultant contract shall not preclude County's inquiry into allegations of nonpayment. The foregoing remedies shall not be employed when Consultant demonstrates that failure to pay results from a bona fide dispute with its subconsultant or supplier.

ARTICLE 6. OPTIONAL AND ADDITIONAL SERVICES; CHANGES IN SCOPE OF SERVICES

6.1 County or Consultant may request changes that would increase, decrease, or otherwise modify the Scope of Services to be provided under this Agreement. Such changes must be made in accordance with the provisions of the Broward County Procurement Code and must be contained in a written amendment executed by the parties hereto, with the same formality and of equal dignity herewith, prior to any deviation from the terms of this Agreement including the initiation of any additional services.

6.2 Costs of additional services identified by the Contract Administrator during the life of this agreement and as contained in a written amendment will be compensated on an hourly basis, or an agreed upon lump sum, or as a reimbursable, as provided in Article 5. Additional services authorized by the Contract Administrator shall include a required completion date for Consultant's performance of those additional services.

6.3 In the event a dispute between the Contract Administrator and Consultant arises over whether requested services constitute additional services and such dispute cannot be resolved by the Contract Administrator and Consultant, such dispute shall be promptly presented to County's committee which negotiated this Agreement, for resolution. The committee's decision shall be final and binding on the parties. The resolution shall be set forth in a written document in accordance with Section 6.1 above. During the pendency of any dispute, Consultant shall promptly perform the disputed services.
6.4 Consultant may, at Contract Administrator's discretion, be authorized to perform the Optional Services delineated in Exhibit F, Optional Services, up to the maximum fee amount established for Optional Services under Article 5 and in Exhibit F. Any Optional Services to be performed by Consultant pursuant to the terms of this Agreement shall first be authorized by the Contract Administrator in writing by a "Work Authorization" in accordance with this Article. Prior to issuing a Work Authorization, the Contract Administrator must provide the County Attorney's Office with the written description of the work to be undertaken as required by Section 6.4 and obtain a written concurrence from the County Attorney's Office that the work proposed to be performed pursuant to the Work Authorization is within the scope of services of this Agreement. Before any Optional Service that is contained within Section 5.1.3 and Exhibit F is commenced, Consultant shall supply the Contract Administrator with a written estimate for all charges expected to be incurred for such Optional Service.

6.4.1 For Optional Services not already within the scope of Section 5.1.3 and Exhibit F, Work Authorizations shall be required as follows:

6.4.1.1 Any Optional Services Work Authorization that will cost County less than Thirty Thousand Dollars ($30,000.00) may be signed by Contract Administrator and Consultant.

6.4.1.2 Any Optional Services Work Authorization that will cost County at least Thirty Thousand Dollars ($30,000.00) but not more than $100,000.00 may be signed by County's Purchasing Director, and Consultant.

6.4.1.3 Any Work Authorization above the County's Purchasing Director's authority must be approved by the Board.

6.5 As provided in Article 9, each proposed contract modification request that, by itself or aggregated with previous modification requests, increases the contract value by ten percent (10%) or more of the initial contract value shall be reviewed by County for opportunities to include or increase DBE participation. Consultant shall demonstrate good faith efforts to include DBE participation in modified work and shall report such efforts to the Broward County Office of Economic and Small Business Development (OESBD).

ARTICLE 7. COUNTY'S RESPONSIBILITIES

7.1 Consultant may review public records relevant to the Scope of Work and request to review other information pertinent to the Project. County, in making information and documents available to the Consultant, does not certify the accuracy or completeness of such data. Any conclusions or assumptions drawn thereof by Consultant shall be the sole responsibility of the Consultant and subject to verification by Consultant.

7.2 Consultant shall arrange for access to, and make all provisions to enter upon public and private property as required for Consultant to perform its services.
ARTICLE 8. INSURANCE

8.1 Consultant at its sole cost, shall maintain at all times during the term of this Agreement (unless a different time period is otherwise stated herein), the minimum insurance coverage designated in Exhibit D in accordance with the terms and conditions stated in this Article.

8.2 Such policies shall be issued by companies authorized to do business in the State of Florida, with a minimum AM Best financial rating of A-. Coverage shall be afforded on a form no more restrictive than the latest edition of the respective Insurance Services Office policy. Consultant shall name Broward County as an additional insured under the primary and non-contributory Commercial General Liability policy, Business Automobile Liability policy as well as on any Excess Liability policy. The official title of the certificate holder is Broward County. This official title shall be used in all insurance documentation.

8.2.1 Prior to the entrance into the airside area of the Airport by Consultant, its subconsultants and/or their employees, the limit of liability for automobile and commercial or comprehensive general liability insurance will be increased to $5,000,000.00 each occurrence bodily injury and property damage combined single limit.

8.3 Consultant shall provide to County proof of insurance in form of Certificates of Insurance and endorsements evidencing all insurance required by this Article within fifteen (15) days of notification of award. County reserves the right to obtain a certified copy of any policies required by this Article upon request. Coverage is not to cease and is to remain in force until final acceptant by County. County shall be notified of any restriction or cancellation of coverage within thirty (30) days. If any of the insurance coverage will expire prior to the completion of the work, proof of insurance renewal shall be provided to County upon expiration.

8.4 County reserves the right to review and revise any insurance requirements at the time of renewal or amendment of this Agreement, including, but not limited to, deductibles, limits, coverage, and endorsements.

8.5 If Consultant uses a subconsultant, Consultant shall require subconsultant to name "Broward County" as an additional insured on any Commercial General Liability and the Business Automobile Liability policies.

ARTICLE 9. EEO AND DBE COMPLIANCE

9.1 DISADVANTAGED BUSINESS ENTERPRISE (DBE).

Project Funding: This Project will be funded in part by one or more grants from the Federal Aviation Administration (FAA) Airport Improvement Program (AIP) and this Project must comply with the FAA and United States Department of Transportation (USDOT) Rule 49 CFR Part 26 pertaining to compliance with DBE requirements.
Projects receiving such funding must comply with USDOT Code of Federal Regulations 49 CFR Part 26, the implementing rules of the above-noted agency, and with Broward County's Disadvantaged Business Enterprise Program and the Broward County Business Opportunity Act of 2012, Ordinance 2012-33, as may be amended from time to time.

The Consultant agrees that it shall not discriminate on the basis of race, color, national origin, or sex in the performance of this Agreement. The Consultant shall carry out applicable requirements of 49 CFR Part 26 in the award and administration of USDOT-assisted contracts. Failure by the Consultant to carry out these requirements is a material breach of this Contract, which may result in the termination of this Consultant or such other remedy as Broward County may deem appropriate.

Since this Project is funded at least in part using FAA funds, it is the policy of Broward County to ensure that Disadvantaged Business Enterprises (DBEs), as defined in 49 CFR Part 26, can compete fairly for opportunities to participate as subconsultants and suppliers on all contracts awarded by the County to ensure a level playing field.

Broward County fully supports the federal government's Disadvantaged Business Enterprises Program.

**The Consultant has committed to fifteen percent (15%) DBE Participation.**

9.1.1 Prior approval of OESBD must be obtained to add or change a DBE subconsultant.

9.1.2 County shall review each proposed modification to this Agreement that, by itself or aggregated with previous modifications, increases the total contract price by ten percent (10%) or more of the initial total contract price or Fifty Thousand Dollars ($50,000.00), whichever is less, for opportunities to include or increase participation of DBE already involved in the Contract. The Consultant shall demonstrate that it makes good faith efforts to include DBE participation in work resulting from any such modification, and shall report such efforts to the OESBD.

9.1.3 On-site reviews to monitor the Consultant's progress in achieving and maintaining contractual DBE obligations will be carried out by the Contract Administrator in conjunction with the Broward County Office of Economic and Small Business Development ("OESBD").

9.1.4 Nothing herein shall be construed to require the Consultant to award a subcontract to a DBE if the DBE did not submit the lowest responsive bid.

9.2 **Contract Assurances.** The following clauses pertaining to compliance with 49 CFR Part 26 are incorporated into and are a part of this Agreement, upon its award by the County, and are hereby incorporated into the terms of the Consultant's solicitations, subcontracts, material supply contracts and purchase orders. In the event the following clauses conflict with any other terms or provisions of this Agreement, or any of the terms of the Consultant's solicitations,
subcontracts, material supply contracts and purchase orders, the clauses set forth in this Section shall control.

9.2.1 Compliance monitoring will be conducted to determine if the Consultant and its subconsultants are complying with the requirements of the DBE Program. Failure of the Consultant to comply with this provision may result in the County imposing penalties or sanctions pursuant to the provisions of the DBE regulation, 49 CFR Part 26 and the County's Business Opportunity Act of 2012, Ordinance 2012-33, as may be amended from time to time. Contract compliance will encompass monitoring for contract dollar achievement and DBE utilization. The OESBD shall have the authority to audit and monitor all contracts and contract related documents pertaining to Broward County projects.

9.2.2 The Consultant shall be responsible for ensuring proper documentation with regard to its utilization and payment of DBE subconsultants.

9.2.3 The Consultant agrees to submit a Monthly DBE Utilization Report, Exhibit C-3, to the Contract Administrator with a copy to the OESBD, on DBE participation, which shall contain a record of payments made to its DBE subconsultants.

9.2.4 The Consultant agrees to submit a Final DBE Utilization Report, Exhibit C-4, containing the total amount paid to its DBE subconsultants. This report must be submitted with the Consultant's request for final payment and release of retainage.

9.2.5 Nondiscrimination – The Consultant or subconsultant shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The Consultant shall carry out applicable requirements of 49 CFR Part 26 in the award and administration of USDOT-assisted contracts. Failure by the Consultant to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy as the recipient deems appropriate.

9.2.6 Prompt Payment – The Consultant hereby agrees to pay its DBE subconsultants, subcontractors and suppliers within thirty (30) calendar days following receipt of payment from the County for work satisfactorily completed by the subconsultants. Further, if Consultant has withheld retainage from its DBE subconsultants, subcontractors and suppliers, it shall release and pay such retainage within thirty (30) calendar days of the date the work was satisfactorily completed if County did not withhold retainage from Consultant or within thirty (30) calendar days after receipt of payment of the retained amounts from County. A finding of nonpayment to subconsultants and suppliers is a material breach of this contract.
ARTICLE 10. MISCELLANEOUS

10.1 Ownership Of Documents

10.1.1 All finished or unfinished documents, data, studies, surveys, drawings, maps, models, photographs, specifications and reports prepared or provided by Consultant in connection with this Agreement shall become the property of County, whether the Project for which they are made is completed or not, and shall be delivered by Consultant to County within fifteen (15) days of the receipt of the written request from the Contract Administrator or written notice of termination.

10.1.2 If any funding for this Agreement is provided by the Federal Aviation Administration (FAA) or any other federal agency, then all rights to inventions and materials generated under this contract are subject to regulations issued by the FAA or any such other federal agency, and the sponsor of any grant under which this contract is executed. Information regarding these rights is available from the FAA and the sponsor.

10.1.3 Tangible items of non-consumed equipment, materials, supplies and furnishings purchased by the Consultant and its subconsultants, the costs of which have been reimbursed to the Consultant as a direct cost, shall be turned over to the County at completion or earlier termination of this Agreement, or disposed of as directed by the Contract Administrator, and the proceeds of any such disposal shall be credited to, or paid to, the County.

10.1.4 County may withhold any payments then due to Consultant until Consultant complies with the provisions of this Section.

10.2 Termination

10.2.1 This Agreement or any Work Authorization issued under this Agreement may be terminated for cause by the aggrieved party, if the party in breach has not corrected the breach within ten (10) days after written notice from the aggrieved party identifying the breach. This Agreement and any Work Authorization issued hereunder, or any part thereof, may also be terminated for convenience by County. Termination for convenience by County shall be effective on the termination date stated in written notice provided by County, which termination date shall be not less than thirty (30) days after the date of such written notice. If this Agreement or Work Authorization was entered into on behalf of County by someone other than the Board, termination by County may be by action of the County Administrator or the County representative (including his or her successor) who entered in this Agreement on behalf of County. This Agreement may also be terminated by the County Administrator upon such notice as the County Administrator deems appropriate under the circumstances in the event the County Administrator determines that termination is necessary to protect the public health or safety. The parties agree that if the County erroneously, improperly or unjustifiably terminates for
such termination shall be deemed a termination for convenience, which shall be effective thirty (30) days after such notice of termination for cause is provided.

10.2.2 This Agreement may be terminated for cause for reasons including, but not limited to, Consultant’s repeated (whether negligent or intentional) submission for payment of false or incorrect bills or invoices, failure to suitably perform the work; or failure to continuously perform the work in a manner calculated to meet or accomplish the objectives as set forth in this Agreement or Work Authorization. The Agreement may also be terminated for cause if the Consultant is placed on the Scrutinized Companies with Activities in Sudan List or the Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List created pursuant to Section 215.473, Florida Statutes, as amended or if the Consultant provides a false certification submitted pursuant to Section 287.135, Florida Statutes, as amended. This Agreement or a Work Authorization may also be terminated by County:

10.2.2.1 Upon the disqualification of Consultant as a CBE/DBE by County's Director of the Office of Economic and Small Business Development if Consultant’s status as a CBE/DBE was a factor in the award of this Agreement or the Work Authorization, and such status was misrepresented by Consultant;

10.2.2.2 Upon the disqualification of Consultant by County's Director of the Office of Economic and Small Business Development due to fraud, misrepresentation, or material misstatement by Consultant in the course of obtaining this Agreement or the Work Authorization, or attempting to meet the CBE/DBE contractual obligations;

10.2.2.3 Upon the disqualification of one or more of Consultant’s CBE/DBE participants by County's Director of the Office of Economic and Small Business Development if any such participant’s status as a CBE/DBE firm was a factor in the award of this Agreement or the Work Authorization, and such status was misrepresented by Consultant or such participant;

10.2.2.4 Upon the disqualification of one or more of Consultant’s CBE/DBE participants by County's Director of the Office of Economic and Small Business Development if such CBE/DBE participant attempted to meet its CBE/DBE contractual obligations through fraud, misrepresentation, or material misstatement; or

10.2.2.5 If Consultant is determined by County's Director of the Office of Economic and Small Business Development to have been knowingly involved in any fraud, misrepresentation, or material misstatement concerning the CBE/DBE status of its disqualified CBE/DBE participant.
10.2.3 Notice of termination shall be provided in accordance with the “NOTICES” Section of this Agreement except that notice of termination by the County Administrator which the County Administrator deems necessary to protect the public health or safety may be verbal notice that shall be promptly confirmed in writing in accordance with the "NOTICES" Section of this Agreement.

10.2.4 In the event this Agreement or a Work Authorization issued under this Agreement is terminated for convenience, Consultant shall be paid for any services properly performed under the Agreement or Work Authorization through the termination date specified in the written notice of termination. Consultant acknowledges and agrees that it has received good, valuable and sufficient consideration from County, the receipt and adequacy of which are hereby acknowledged by Consultant, for County's right to terminate this Agreement for convenience.

10.3 Suspension. County shall have the right to suspend the work and services of Consultant. The suspension will be by written notice to Consultant from the Contract Administrator. Consultant shall, upon receipt of written notice from the Contract Administrator, remove all equipment and personnel from the work area, or as otherwise directed in the written notice. Consultant will return to the work and continue the performance services under this Agreement upon receipt of a written Notice to Proceed from the Contract Administrator.

10.4 Public Records. County is a public agency subject to Chapter 119, Florida Statutes. To the extent Consultant is a contractor acting on behalf of the County pursuant to Section 119.0701, Florida Statutes, Consultant and its subconsultants and subcontractors shall:

10.4.1 Keep and maintain public records that ordinarily and necessarily would be required by County in order to perform the service;

10.4.2 Provide the public with access to such public records on the same terms and conditions that County would provide the records and at a cost that does not exceed that provided in Chapter 119, Florida Statutes, or as otherwise provided by law;

10.4.3 Ensure that public records that are exempt or that are confidential and exempt from public record requirements are not disclosed except as authorized by law; and

10.4.4 Meet all requirements for retaining public records and transfer to County, at no cost, all public records in its possession upon termination of the applicable contract and destroy any duplicate public records that are exempt or confidential and exempt. All records stored electronically must be provided to County in a format that is compatible with the information technology systems of County.

The failure of Consultant to comply with the provisions set forth in this Section shall constitute a default and breach of this Agreement, and County shall enforce the default in accordance with the provisions set forth in Section 10.2.
10.5 Audit Rights, And Retention Of Records. Consultant shall preserve all Contract Records (as defined below) for a minimum period of three (3) years after expiration or termination of this Agreement or until resolution of any audit findings, whichever is longer. Contract Records shall, upon reasonable notice, be open to County inspection and subject to audit and reproduction during normal business hours. County audits and inspections pursuant to this Section may be performed by any County representative (including any outside representative engaged by County). County may conduct audits or inspections at any time during the term of this Agreement and for a period of three years after the expiration or termination of the Agreement (or longer if required by law). County may, without limitation, verify information, payroll distribution, and amounts through interviews, written affirmations, and on-site inspection with Consultant’s employees, Subconsultants, vendors, or other labor.

Contract Records include any and all information, materials and data of every kind and character, including without limitation, records, books, papers, documents, subscriptions, recordings, agreements, purchase orders, leases, contracts, commitments, arrangements, notes, daily diaries, drawings, receipts, vouchers and memoranda, and any and all other documents that pertain to rights, duties, obligations or performance under this Agreement. Contract Records include hard copy and electronic records, written policies and procedures, time sheets, payroll records and registers, cancelled payroll checks, estimating work sheets, correspondence, invoices and related payment documentation, general ledgers, insurance rebates and dividends, and any other records pertaining to rights, duties, obligations or performance under this Agreement, whether by Consultant or Subconsultants.

County shall have the right to audit, review, examine, inspect, analyze, and make copies of all Contract Records at a location within Broward County. County reserves the right to conduct such audit or review at Consultant’s place of business, if deemed appropriate by County, with seventy-two (72) hours’ advance notice. Consultant agrees to provide adequate and appropriate work space. Consultant shall provide County with reasonable access to the Consultant’s facilities, and County shall be allowed to interview all current or former employees to discuss matters pertinent to the performance of this Agreement.

Consultant shall, by written contract, require its Subconsultants and subcontractors to agree to the requirements and obligations of this Section.

Any incomplete or incorrect entry in such books, records, and accounts shall be a basis for County’s disallowance and recovery of any payment reliant upon such entry. If an audit or inspection in accordance with this Section discloses overpricing or overcharges to County of any nature by the Consultant or its Subconsultants in excess of five percent (5%) of the total contract billings reviewed by County, the reasonable actual cost of the County’s audit shall be reimbursed to the County by the Consultant in addition to making adjustments for the overcharges. Any adjustments and/or payments due as a result of such audit or inspection shall be made within thirty (30) days from presentation of County’s findings to Consultant.
10.6 **Public Entity Crime Act.** Consultant represents that it is familiar with the requirements and prohibitions under the Public Entity Crime Act, Section 287.133, Florida Statutes, and represents that its entry into this Agreement will not violate that Act. In addition to the foregoing, Consultant further represents that there has been no determination that it committed a "public entity crime" as defined by Section 287.133, Florida Statutes, and that it has not been formally charged with committing an act defined as a "public entity crime" regardless of the amount of money involved or whether Consultant has been placed on the convicted vendor list. Notwithstanding any provision in this Agreement to the contrary, if any representation stated in this paragraph is false, County shall have the right to immediately terminate this Agreement and recover all sums paid to Consultant under this Agreement.

10.7 **No Contingent Fee.** Consultant warrants that it has not employed or retained any company or person, other than a bona fide employee working solely for Consultant, to solicit or secure this Agreement and that it has not paid or agreed to pay any person, company, corporation, individual or firm, other than a bona fide employee working solely for Consultant any fee, commission, percentage, gift, or other consideration contingent upon or resulting from the award or making of this Agreement. For the breach or violation of this provision, County shall have the right to terminate the Agreement without liability at its discretion, or to deduct from the Agreement price, or otherwise recover, the full amount of such fee, commission, percentage, gift, or consideration.

10.8 **Subconsultants**

10.8.1 Consultant shall utilize the subconsultants identified in the proposal that were a material part of the selection of Consultant to provide the services for this Project. Consultant shall obtain written approval of Contract Administrator prior to changing or modifying the list of subconsultants submitted by Consultant. Where Consultant's failure to use subconsultant results in Consultant's noncompliance with CBE/DBE participation goals, such failure shall entitle the affected CBE/DBE firm to damages available under this Agreement and under local and State law. The list of subconsultants is provided on Exhibit C.

10.8.2 Consultant shall bind in writing each and every approved subconsultant to the terms stated in this Agreement, provided that this provision shall not, in and of itself, impose the insurance requirements set forth in Article 8 on Consultant's subconsultants. The Consultant shall require all subconsultants to have adequate and necessary insurances coverages to protect the interests of Broward County and to name Broward County as an additional insured on all policies.
10.8.3 If any of the services outlined in this Agreement are furnished by Consultant by obtaining the services of subconsultants, Consultant, upon request shall provide County with proposals and contracts between the subconsultants and Consultant outlining the services to be performed and the charges for same, together with any other documentation required by County.

10.9 Assignment And Performance. Neither this Agreement nor any interest herein shall be assigned, transferred, or encumbered without the prior written consent of the Board. Consultant shall not subcontract any portion of the work required by this Agreement except as authorized pursuant to Section 10.8. County shall have the right to terminate this Agreement, effective immediately, if there is an assignment, or attempted assignment, transfer, or encumbrance of this Agreement or any right or interest herein by Consultant without County's written consent.

10.10 Representative Of County And Consultant. The parties recognize that questions in the day-to-day conduct of the Project will arise. The Contract Administrator, upon Consultant's request, shall advise Consultant in writing of one (1) or more County employees to whom all communications pertaining to the day-to-day conduct of the Project shall be addressed. Consultant shall inform the Contract Administrator in writing of Consultant's representative to whom matters involving the conduct of the Project shall be addressed.

10.11 Indemnification Of County. Consultant shall indemnify and hold harmless County, its officers and employees from liabilities, damages, losses, and costs, including, but not limited to, reasonable attorneys' fees, to the extent caused by the negligence, recklessness or intentional wrongful conduct of Consultant, and other persons employed or utilized by Consultant in the performance of this Agreement. The provisions of this Section shall survive the expiration or earlier termination of this Agreement. To the extent considered necessary by Contract Administrator and County Attorney, any sums due Consultant under this Agreement may be retained by County until all of County's claims for indemnification pursuant to this Agreement have been settled or otherwise resolved, and any amount withheld shall not be subject to payment of interest by County.

10.12 All Prior Agreements Superseded. This document incorporates and includes all prior negotiations, correspondence, conversations, agreements or understandings applicable to the matters contained herein; and the parties agree that there are no commitments, agreements or understandings concerning the subject matter of this Agreement that are not contained in this document. Accordingly, the parties agree that no deviation from the terms hereof shall be predicated upon any prior representations or agreements whether oral or written.

10.13 No Conflicts

10.13.1 The employees and officers of Consultant, its subconsultants, and the subsidiaries of Consultant and its subconsultants shall not, during the term of this Agreement, serve as an expert witness against County in any legal or administrative proceeding in which he or she or Consultant is not a party, unless compelled by court
process. Further, Consultant agrees that such persons shall not give sworn testimony or issue a report or writing, as an expression of his or her expert opinion, which is adverse or prejudicial to the interests of County or in connection with any such pending or threatened legal or administrative proceeding. The limitations of this Section shall not preclude such persons from representing themselves in any action or in any administrative or legal proceeding.

10.13.2 Consultant, its subconsultants, and the subsidiaries, officers, and personnel of Consultant and its subconsultants shall not acquire any interest in any parcel of land or improvement thereon located within the Airport boundaries, as described in the Master Plan Update, including such additional property that may need to be acquired to implement the development described in the Master Plan Update.

10.13.3 Consultant, its subconsultants, and the subsidiaries, officers and personnel of Consultant and its subconsultants shall not perform consulting work or provide legal services that would in any way be in conflict with the Project or detrimental to the Project, or for any municipality, developer, tenant or landowner developing or having property within the Airport boundaries, as described in the Master Plan Update, including such additional property that may need to be acquired to implement the development described in the Master Plan Update. At least ten (10) calendar days prior to undertaking any such work, the Consultant shall provide the Contract Administrator with a written description of the contemplated work and the Contract Administrator shall promptly advise as to whether such work would be detrimental to the Project or in conflict therewith.

10.13.4 Consultant, its subconsultants, and the subsidiaries, officers, and personnel of Consultant and its subconsultants shall not have or hold any continuing or frequently recurring employment or contractual relationship that is substantially antagonistic or incompatible with such party's loyal and conscientious exercise of judgment and care related to its performance under this Agreement.

10.13.5 Consultant agrees to require its subconsultants, by written contract, to comply with the provisions of this Section.

10.14 Amendments. No modification, amendment or alteration in the terms or conditions contained herein shall be effective unless contained in a written document executed with the same formality and of equal dignity herewith.

10.15 Notices. Whenever either party desires to give notice to the other, such notice must be in writing, sent by certified United States Mail, postage prepaid, return receipt requested, or sent by commercial express carrier with acknowledgement of delivery, or by hand delivery with a request for a written receipt of acknowledgment of delivery, addressed to the party for whom it is intended at the place last specified. The place for giving notice shall remain the same as set
forth herein until changed in writing in the manner provided in this Section. The parties designate
the following as the respective places for giving of notice:

FOR COUNTY:
Mike Pacitto, Contract Administrator
2200 SW 45th Street, Suite 101
Dania Beach, FL 33312

FOR CONSULTANT:
Pete Ricondo, P.E. Senior Vice President
1000 57th Court, Suite 920
Miami, Florida 33126

10.16 Truth-In-Negotiation Certificate. Consultant's compensation under this Agreement is
based upon representations supplied to County by Consultant, and Consultant certifies that the
information supplied, including without limitation in the negotiation of this Agreement, is
accurate, complete, and current at the time of contracting. County shall be entitled to recover
any damages it incurs to the extent such representation is untrue.

10.17 Interpretation. The language of this Agreement has been agreed to by both parties to
express their mutual intent and no rule of strict construction shall be applied against either party
hereto. The headings contained in this Agreement are for reference purposes only and shall not
affect in any way the meaning or interpretation of this Agreement. All personal pronouns used
in this Agreement shall include the other gender, and the singular shall include the plural, and
vice versa, unless the context otherwise requires. Terms such as "herein," "hereof," "hereunder,"
and "hereinafter" refer to this Agreement as a whole and not to any particular sentence,
paragraph, or section where they appear, unless the context otherwise requires. Whenever
reference is made to a Section or Article of this Agreement, such reference is to the Section or
Article as a whole, including all of the subsections of such Section, unless the reference is made
to a particular subsection or subparagraph of such Section or Article.

10.18 Consultant's Staff. Consultant will provide the key and core staff identified on Exhibit B-1
for the Project as long as said key and core staff are in Consultant's employment. Prior to
changing any key staff set forth on Exhibit B-1, Consultant shall provide Contract Administrator
with such information as necessary to determine the suitability of proposed new key staff. The
Contract Administrator will be reasonable in evaluating the qualifications of any proposed key
staff. The key employees will not be changed, removed, or replaced by the Consultant without
the prior written approval of the Contract Administrator. The Consultant must provide written
notice to the Contract Administrator of core staff changes, and provide the qualifications of any
substituted core staff prior to any said substituted staff performing services on the Project. If
Contract Administrator desires to request removal of any of Consultant's staff, the Contract
Administrator shall first meet with Consultant and provide reasonable justification for said
removal.
10.19 **Drug-Free Workplace.** It is a requirement of County that it enter into contracts only with firms that certify the establishment of a drug-free work place in accordance with Chapter 21.31(a) of the Broward County Procurement Code. Execution of this Agreement by Consultant shall serve as Consultant's required certification that it either has or that it will establish a drug-free work place in accordance with Chapter 21.31(a) of the Broward County Procurement Code and will continue to maintain same during the term of this Agreement.

10.20 **Independent Contractor; No Joint Relationship.** Consultant is an independent contractor under this Agreement. Services provided by Consultant shall be subject to the supervision of Consultant. In providing the services, Consultant or its agents shall not be acting and shall not be deemed as acting as officers, employees, or agents of County.

10.21 **Third Party Beneficiaries.** Neither Consultant nor County intends to directly or substantially benefit a third party by this Agreement. Therefore, the Parties acknowledge that there are no third party beneficiaries to this Agreement and that no third party shall be entitled to assert a right or claim against either of them based upon this Agreement.

10.22 **Incorporation By Reference.** The referenced Exhibits and Attachments are incorporated into and made a part of this Agreement.

10.23 **Materiality And Waiver Of Breach.** County and Consultant agree that each requirement, duty, and obligation set forth herein is substantial and important to the formation of this Agreement and, therefore, is a material term hereof. County's failure to enforce any provision of this Agreement shall not be deemed a waiver of such provision or modification of this Agreement. A waiver of any breach of a provision of this Agreement shall not be deemed a waiver of any subsequent breach and shall not be construed to be a modification of the terms of this Agreement.

10.24 **Compliance With Laws.** Consultant shall comply with all federal, state, and local laws, codes, ordinances, rules, and regulations in performing its duties, responsibilities, and obligations related to this Agreement.

10.25 **Severability.** In the event any part of this Agreement is found to be unenforceable by any court of competent jurisdiction, that part shall be deemed severed from this Agreement and the balance of this Agreement shall remain in full force and effect.

10.26 **Priority Of Provisions.** If there is a conflict or inconsistency between any term, statement, requirement, or provision of any exhibit attached hereto, any document or events referred to herein, or any document incorporated into this Agreement by reference and a term, statement, requirement, or provision of this Agreement, the term, statement, requirement, or provision contained in Articles 1 through 10 of this Agreement shall prevail and be given effect.

10.27 **Joint Preparation.** The parties acknowledge that they have sought and received whatever competent advice and counsel necessary for them to form a full and complete understanding of
all rights and obligations herein and that the preparation of this Agreement has been their joint effort. The language agreed to expresses their mutual intent and the resulting document shall not, solely as a matter of judicial construction, be construed more severely against one of the parties than another.

10.28 Payable Interest

10.28.1 Payment of Interest. Unless required by the Broward County Prompt Payment Ordinance, any monies which are the subject of a dispute regarding this Agreement and which are not paid by County when claimed to be due shall not be subject to interest for any reason, whether as prejudgment interest or for any other purpose, and in furtherance thereof Consultant waives, rejects, disclaims and surrenders any and all entitlement it has or may have to receive interest in connection with a dispute or claim based on or related to this Agreement. All requirements inconsistent with this provision are hereby waived by Consultant.

10.28.2 Rate of Interest. In any instance where the prohibition or limitations of the foregoing subsection are determined to be invalid or unenforceable, the annual rate of interest payable by County under this Agreement, whether as prejudgment interest or for any other purpose, shall be .025 percent simple interest (uncompounded).

10.29 Law, Jurisdiction, Venue, Waiver Of Jury Trial. This Agreement shall be interpreted and construed in accordance with and governed by the laws of the state of Florida. The Parties agree that the exclusive venue for any lawsuit arising from, related to, or in connection with this Agreement shall be in the state courts of the Seventeenth Judicial Circuit in and for Broward County, Florida. If any claim arising from, related to, or in connection with this Agreement must be litigated in federal court, the Parties agree that the exclusive venue for any such lawsuit shall be in the United States District Court or United States Bankruptcy Court for the Southern District of Florida. BY ENTERING INTO THIS AGREEMENT, SECOND PARTY AND COUNTY HEREBY EXPRESSLY WAIVE ANY RIGHTS EITHER PARTY MAY HAVE TO A TRIAL BY JURY OF ANY CIVIL LITIGATION RELATED TO THIS AGREEMENT. IF A PARTY FAILS TO WITHDRAW A REQUEST FOR A JURY TRIAL IN A LAWSUIT ARISING OUT OF THIS AGREEMENT AFTER WRITTEN NOTICE BY THE OTHER PARTY OF VIOLATION OF THIS SECTION, THE PARTY MAKING THE REQUEST FOR JURY TRIAL SHALL BE LIABLE FOR THE REASONABLE ATTORNEYS' FEES AND COSTS OF THE OTHER PARTY IN CONTESTING THE REQUEST FOR JURY TRIAL, AND SUCH AMOUNTS SHALL BE AWARDED BY THE COURT IN ADJUDICATING THE MOTION.

10.30 Re-Use Of Project. County may, at its option, re-use (in whole or in part) the resulting end-product or deliverables resulting from Consultant's professional services (including, but not limited to, reports, studies, analyses, surveys, or other documents and services as described herein and in Exhibit A, Scope of Services or a Work Authorization); and Consultant agrees to such re-use in accordance with this provision. If County elects to re-use the services, reports, studies, analyses, surveys, or other documents, in whole or in part, prepared for this Project for other projects on other sites, Consultant will not be liable for any such re-use. The terms and
conditions of this Agreement shall remain in force for each re-use project, unless otherwise agreed by the parties in writing.

10.31 Representation Of Authority. Each individual executing this Agreement on behalf of a party hereto hereby represents and warrants that he or she is, on the date he or she signs this Agreement, duly authorized by all necessary and appropriate action to execute this Agreement on behalf of such party and does so with full and legal authority.

10.32 Counterparts and Multiple Originals. This Agreement may be executed in multiple originals, and may be executed in counterparts, each of which shall be deemed to be an original, but all of which, taken together, shall constitute one and the same agreement.

(THE REMAINDER OF THIS PAGE IS INTENTIONALLY LEFT BLANK.)
IN WITNESS WHEREOF, the parties hereto have made and executed this Agreement on the respective dates under each signature: Broward County, Florida through its Board of County Commissioners, signing by and through its Mayor or Vice-Mayor, authorized to execute same by Board action on the day of , 2015, and Consultant, signing by and through its representative, duly authorized to execute same.

COUNTY ADMINISTRATOR ATTEST:
County Administrator and Ex-Officio Clerk of the Board of County Commissioners

[Signature]
Bertha Henry

COUNTY MAYOR or VICE-MAYOR:

[Signature]
Mayor or Vice-Mayor

Date

COUNTY RISK MANAGER:
Approved as to surety company qualifications, insurance requirements and insurance documentation.

[Signature]
Tracy Meyer, Esq.

Date

COUNTY ATTORNEY:
Approved as to form by
Joni Armstrong Coffey
Broward County Attorney
Aviation Office
2200 SW 45th Street, Suite 101
Dania Beach, Florida 33312
Teleph: (954) 359-6100
Telecop: (954) 359-1292

[Signature]
Alexander J. Williams, Jr., Esq.

Date

CORPORATE SECRETARY ATTEST:
(Affix Corporate Seal or 2 Witnesses below)

[Signature]
Witness
Date

[Signature]
Print Name

Date

[Signature]
Witness
Date

[Signature]
Print Name

Date

Consultant:

[Signature]
Pete Ricooco, P.E.
Senior Vice President

Date

Print Name and Title of Signer

3rd Day of September, 2015
EXHIBIT A
SCOPE OF SERVICES/PHASES/TASKS

(Please see attachment IV Exhibit A - Master Plan Updates Phase I and Phase II Scope of Services for Fort Lauderdale-Hollywood International Airport dated August 26, 2015 and North Perry Airport dated July 20, 2015)

(THE REMAINDER OF THIS PAGE IS INTENTIONALLY LEFT BLANK.)
EXHIBIT B
SALARY COSTS

(Please See Attachment V Exhibit B – Salary Costs)

(THE REMAINDER OF THIS PAGE IS INTENTIONALLY LEFT BLANK.)
EXHIBIT B-1
KEY STAFF

(Please See Attachment VI Exhibit B-1 – Key Staff)

(THE REMAINDER OF THIS PAGE IS INTENTIONALLY LEFT BLANK.)
**EXHIBIT C**
**SCHEDULE OF SUBCONSULTANTS**

<table>
<thead>
<tr>
<th>No.</th>
<th>Firm Name</th>
<th>Discipline</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>ACAI Associates, Inc.</td>
<td>Terminal and Facilities Planning Support; Architectural analysis</td>
</tr>
<tr>
<td>2.</td>
<td>Arora Engineers, Inc.</td>
<td>GIS and Autocadd Support</td>
</tr>
<tr>
<td>3.</td>
<td>Basulto Management Consulting, Inc.</td>
<td>Constructability analysis, cost estimating, airport planning support</td>
</tr>
<tr>
<td>5.</td>
<td>Dickey Consulting Services, Inc.</td>
<td>Public, stakeholder and community outreach</td>
</tr>
<tr>
<td>6.</td>
<td>Florida Transatlantic Holdings, LLC</td>
<td>Real estate asset planning (highest or best use assessments)</td>
</tr>
<tr>
<td>7.</td>
<td>Kimley-Horn and Associates, Inc.</td>
<td>Regional agency coordination; Regional access planning and analysis; ITS technology and systems planning related to off-airport roadways; airport master planning support</td>
</tr>
<tr>
<td>8.</td>
<td>Lea+Elliott, Inc.</td>
<td>Automated people mover system planning; rail and multi-modal transportation planning</td>
</tr>
<tr>
<td>9.</td>
<td>Quantum Spatial, Inc.</td>
<td>FAA airport GIS/eALP survey collection requirements</td>
</tr>
<tr>
<td>10.</td>
<td>R.J. Behar &amp; Company, Inc.</td>
<td>Roadway planning engineering analysis; traffic studies &amp; data collection; cost estimating support</td>
</tr>
</tbody>
</table>
EXHIBIT C-1
LETTERS OF INTENT

(Please See Attachment VII Exhibit C-1 – Letter of Intent)

(THE REMAINDER OF THIS PAGE IS INTENTIONALLY LEFT BLANK.)
EXHIBIT C-2
CERTIFICATION OF PAYMENTS TO SUBCONSULTANTS AND SUPPLIERS

Contract No.________________________
Project Title______________________________

The undersigned Consultant hereby swears under penalty of perjury that:

1. Consultant has paid all subconsultants and suppliers all undisputed contract obligations for labor, services, or materials provided on this project through __________, 20__.

2. The following subconsultants and suppliers have not been paid because of disputed contractual obligations; a copy of the notification sent to each, explaining the good cause why payment has not been made, is attached to this form:

<table>
<thead>
<tr>
<th>Subconsultant/Supplier name and address</th>
<th>Date of disputed invoice</th>
<th>Amount in dispute</th>
</tr>
</thead>
<tbody>
<tr>
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</table>

Dated __________, 20__

Consultant

By ________________ By ____________________
(Signature) (Name and Title)

STATE OF _________________________________
COUNTY OF _________________________________

Acknowledged before me this ______ day of ________________, 20__, by __________________________ who is personally known to me or who has produced __________________________ as identification and who did/did not take an oath.

WITNESS my hand and official seal, this ______ day of ____________, 20__.

(NOTARY SEAL)

(Signature of person taking acknowledgment)

(Print Name of officer taking acknowledgment)

(Title or rank)

My commission expires: ____________________________

(Serial number, if any)
EXHIBIT C-3
DBE MONTHLY UTILIZATION REPORT

OFFICE OF ECONOMIC AND SMALL BUSINESS DEVELOPMENT
MONTHLY DBE UTILIZATION REPORT

<table>
<thead>
<tr>
<th>CONTRACT#:</th>
<th>CONTRACT AMT.:</th>
<th>DATE FORM SUBMITTED:</th>
</tr>
</thead>
<tbody>
<tr>
<td>PROJECT TITLE:</td>
<td>PROJECT COMPLETION DATE:</td>
<td></td>
</tr>
<tr>
<td>PRIME CONTRACTOR:</td>
<td>PERIOD ENDING:</td>
<td></td>
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<tr>
<td>CONTACT PERSON:</td>
<td>TELEPHONE #:</td>
<td></td>
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<td></td>
<td>FAX #:</td>
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</tbody>
</table>

SUBCONTRACTING INFORMATION
TO BE SUBMITTED MONTHLY TO BROWARD COUNTY OFFICE OF ECONOMIC AND SMALL BUSINESS DEVELOPMENT

<table>
<thead>
<tr>
<th>DBE Subcontractor</th>
<th>Address</th>
<th>Description of Work</th>
<th>Original Agreed Price</th>
<th>Revised Agreed Price</th>
<th>% of Work Completed To Date</th>
<th>Amt. Paid This Period</th>
<th>Amt. Paid To Date</th>
<th>Gender</th>
<th>Ethnic Category</th>
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</table>

<table>
<thead>
<tr>
<th>NON-DBE Subcontractor</th>
<th>Address</th>
<th>Description of Work</th>
<th>Original Agreed Price</th>
<th>Revised Agreed Price</th>
<th>% of Work Completed To Date</th>
<th>Amt. Paid This Period</th>
<th>Amt. Paid To Date</th>
<th>Gender</th>
<th>Ethnic Category</th>
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</table>

Total Amt. Paid to DBE Firms

Total Amt. paid to Non-DBE Firms


I attest that the information submitted in this report is in fact true and correct to the best of my knowledge.

Signature
Title
Date

Note: The information provided herein is subject to verification by the Office of Economic and Small Business Development.

OESBD Compliance Form DBEMUR 020113
EXHIBIT C-4
DBE FINAL UTILIZATION REPORT

OFFICE OF ECONOMIC AND SMALL BUSINESS DEVELOPMENT
FINAL DBE UTILIZATION REPORT
(To be submitted with the final invoice)

Report No. __________

<table>
<thead>
<tr>
<th>CONTRACT#</th>
<th>CONTRACT AMT.</th>
<th>DATE FORM SUBMITTED</th>
<th>PROJECT COMPLETION DATE</th>
</tr>
</thead>
<tbody>
<tr>
<td>PRIME CONTRACTOR:</td>
<td>PERIOD ENDING:</td>
<td>AMT. PAID TO PRIME:</td>
<td></td>
</tr>
<tr>
<td>CONTACT PERSON:</td>
<td>TELEPHONE #:</td>
<td>FAX #:</td>
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</tbody>
</table>

SUBCONTRACTING INFORMATION
All Payments made to DBE Firms must be reported on this form.

<table>
<thead>
<tr>
<th>DBE Subcontractor</th>
<th>Address</th>
<th>Description of Work</th>
<th>Original Agreed Price</th>
<th>Revised Agreed Price</th>
<th>% of Work Completed To Date</th>
<th>Amt. Paid This Period</th>
<th>Amt. Paid To Date</th>
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<th>Ethnic Category</th>
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Total Amt. Paid to DBE Firms

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<tr>
<th>NON-DBE Subcontractor</th>
<th>Address</th>
<th>Description of Work</th>
<th>Original Agreed Price</th>
<th>Revised Agreed Price</th>
<th>% of Work Completed To Date</th>
<th>Amt. Paid This Period</th>
<th>Amt. Paid To Date</th>
<th>Gender</th>
<th>Ethnic Category</th>
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</tbody>
</table>

Total Amt. paid to Non-DBE Firms


I attest that the information submitted in this report is in fact true and correct to the best of my knowledge

Signature: ____________________ Title: ____________________ Date: __________

Note: The Information provided herein is subject to verification by the Office of Economic and Small Business Development

OESBO Compliance Form DBEMUR 028113
EXHIBIT D
INSURANCE REQUIREMENTS

CERTIFICATE OF LIABILITY INSURANCE

11/10/2015

DATE (MM/DD/YYYY)

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFER NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(s) must be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER
Commercial Lines- 312-920-9177
Wells Fargo Insurance Services USA, Inc.
10 S. Wacker, 17th floor
Chicago, IL 60606

INSURED
Ricondo & Associates, Inc.
20 North Clark St. #1500
Chicago IL 60602

CONTACT
Lindsay Robinson
312-658-4113
Fax (AG, Reg. 312-658-4110

INSURER/ AFFORDING COVERAGE
INSURER: Beazley Insurance Company
NAC #: 37540

COVERAGES
CERTIFICATE NUMBER: 9350726
REVISON NUMBER: See below

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

<table>
<thead>
<tr>
<th>ROW</th>
<th>LTM</th>
<th>TYPE OF INSURANCE</th>
<th>ADDL. SUBJ.</th>
<th>POLICY NUMBER</th>
<th>POLICY EXP (MM/DD/YYYY)</th>
<th>LIMIT</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>X</td>
<td>COMMERCIAL GENERAL LIABILITY</td>
<td>CLAIMS-MADE</td>
<td>680-8E780506</td>
<td>08/01/2015 - 08/01/2016</td>
<td>$1,000,000</td>
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<tr>
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<td></td>
<td>680-0F163806</td>
<td>08/01/2015 - 08/01/2016</td>
<td>$1,000,000</td>
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<td>PACP-8E974240</td>
<td>08/01/2015 - 08/01/2016</td>
<td>$10,000</td>
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<td>680-8E975888</td>
<td>08/01/2015 - 08/01/2016</td>
<td>$1,000,000</td>
</tr>
<tr>
<td>B</td>
<td></td>
<td>AUTOMOBILE LIABILITY</td>
<td>ALL OWNED AUTOS</td>
<td>BA-0F162914</td>
<td>08/01/2015 - 08/01/2016</td>
<td>$1,000,000</td>
</tr>
<tr>
<td>C</td>
<td></td>
<td>UMBRELLA LIABILITY</td>
<td>OCCUR</td>
<td>ZUP-51M1152A-15-NF</td>
<td>08/01/2015 - 08/01/2016</td>
<td>$1,000,000</td>
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<td></td>
<td>UB-4309104-4</td>
<td>08/01/2015 - 08/01/2016</td>
<td>$1,000,000</td>
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<td></td>
<td>WI1833D150201</td>
<td>08/01/2015 - 08/01/2016</td>
<td>$1,000,000</td>
</tr>
</tbody>
</table>

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 191, Additional Records Schedule, may be attached if more space is required)

The following are included as Additional Insureds on a primary and non-contributory basis when required by written contract with the Named Insured under the general liability, but only with respect to services provided by the named insured:

Broward County

CERTIFICATE HOLDER
Broward County Aviation Department
Attention: Michael Pacillo
2200 SW 45th Street, Suite 101
Dania Beach, Florida 33312

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVIDIINGS.

AUTHORIZED REPRESENTATIVE

7/14/2015

ACORD 25 (2014/01)

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EXHIBIT E

Work Authorization No. _______________  RLI/RFP No. _______________

Consultant:  
Project No.:  
Project Title:  
RLI/RFP Title:  
Facility Name:  

This Work Authorization (WA) is issued pursuant to the Agreement between Broward County and _________________, for Consultant Services in Broward County, which was approved by the Board of County Commissioners on ________________. Except as provided for herein, nothing contained in this Work Authorization shall alter, modify or change in any way the terms and conditions of the Agreement with the County. This Work Authorization provides for services consistent with the Agreement referenced above and as specifically described in the attached proposal and scope. Payment for such services shall be in accordance with the Agreement.

The time period for this Work Authorization shall consist of ________ (__) calendar days. This Work Authorization shall not extend beyond the Agreement term without the approval of the Board of County Commissioners, unless expressly provided for in the Agreement.

In consideration of the County’s issuance of, payment under and the grant of _____ days for completion of the Work in this Work Authorization, Consultant waives and releases any and all claims associated with the performance of the Work described in this Work Authorization. This Work Authorization constitutes full accord and satisfaction of all claims for time and compensation associated with the Work authorized by this Work Authorization for events actions occurring prior to execution of this Work Authorization.

<table>
<thead>
<tr>
<th>Budget</th>
<th>Requisition Number</th>
<th>Aviation Department Division</th>
</tr>
</thead>
<tbody>
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</tbody>
</table>

Fee Determination: Payment for services under this WA shall be as follows:

<table>
<thead>
<tr>
<th>Description</th>
<th>Lump Sum</th>
<th>Maximum Amount Not-to-Exceed</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Professional</td>
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<tr>
<td>Services</td>
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<td>Reimbursable</td>
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<td>Total</td>
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</tbody>
</table>
## EXHIBIT F
### OPTIONAL SERVICES

<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td><strong>Agency Jurisdiction Coordination</strong>&lt;br&gt;Additional services due to changes in policies or regulations from Agencies with Jurisdiction in the matter that could affect the scope of this project.</td>
</tr>
<tr>
<td>2</td>
<td><strong>Additional Public Outreach</strong>&lt;br&gt;Additional services if meetings or public outreach information is needed beyond what is defined in the scope of services, this could be due to jurisdictional policy changes or any unanticipated issues that may arise.</td>
</tr>
<tr>
<td>3</td>
<td><strong>Broward County Aviation Department Requested Items</strong>&lt;br&gt;This could include items that may be determined to benefit the Airport Master Plan Update and may include items beyond the FAA Advisory Circular minimum requirements. Some items may include Capital Improvement Program data sheets and a recycling program at North Perry airport or other tasks requested by BCAD.</td>
</tr>
<tr>
<td>4</td>
<td><strong>Production and Printing of Deliverables</strong>&lt;br&gt;Additional printing and document production that is beyond what is already defined in the scope of services.</td>
</tr>
<tr>
<td>5</td>
<td><strong>Expert Resources</strong>&lt;br&gt;BCAD and its consultants reserve the opportunity to retain industry technical expertise in a variety of aviation fields to provide input to key elements of the master plan study.</td>
</tr>
</tbody>
</table>

**TOTAL Amount for Optional Services** $300,000.00
ATTACHMENT I
NONDISCRIMINATION REQUIREMENTS

I. NONDISCRIMINATION - 49 CFR PART 21 REQUIREMENTS

During the performance of this contract, the Consultant/Contractor/Tenant/Concessionaire/Lessee/Permittee/Licensee for itself, its personal representatives, assigns and successors in interest (hereinafter referred to collectively as the "Contractor") agrees as follows:

(a) Compliance With Regulations. The Contractor shall comply with the Regulations relative to nondiscrimination in Federally Assisted Programs of the Department of Transportation (hereinafter, "DOT") Title 49, Code of Federal Regulations, Part 21, as they may be amended from time to time (hereinafter referred to as the Regulations), which are herein incorporated by reference and made a part of this contract.

(b) Nondiscrimination. The Contractor shall not discriminate on the grounds of race, color, religion, gender, national origin, age, marital status, political affiliation, familial status, physical or mental disability, or sexual orientation in the selection and retention of subconsultants, including procurement of materials and leases of equipment. The Contractor shall not participate either directly or indirectly in the discrimination prohibited by Section 21.5 of the Regulations, including employment practices when the contract covers a program set forth in Appendix B of the Regulations.

(c) Solicitation for Subconsultants, Including Procurement of Materials and Equipment. In all solicitation either by competitive bidding or negotiation made by the Contractor for work to be performed under a subcontract, including procurement of materials or leases of equipment, each potential subconsultant or supplier shall be notified by the Contractor of the Contractor's obligation under this contract and the Regulations relative to nondiscrimination on the grounds of race, color, religion, gender, national origin, age, marital status, political affiliation, familial status, physical or mental disability, or sexual orientation.

(d) Information and Reports. The Contractor shall provide all information and reports required by the Regulations or directives issued pursuant thereto and shall permit access to its books, records, accounts, other sources of information, and its facilities as may be determined by the County or the Federal Aviation Administration (FAA) to be pertinent to ascertain compliance with such Regulations, orders, and instructions. Where any information required of Contractor is in the exclusive possession of another who fails or refuses to furnish this information, the Contractor shall so certify to the County or the FAA, as appropriate, and shall set forth what efforts it has made to obtain the information.

(e) Sanctions for Noncompliance. In the event of the Contractor's noncompliance with the nondiscrimination provisions of this contract, the County shall impose such
contract sanctions as it or the FAA may determine to be appropriate, including, but not limited to: (1) withholding of payments under the contract until there is compliance, and/or (2) cancellation, termination, or suspension of the contract, in whole or in part. In the event of cancellation or termination of the contract (if such contract is a lease), the County shall have the right to re-enter the Premises as if said lease had never been made or issued. These provisions shall not be effective until the procedures of Title 49 CFR Part 21 are followed and completed, including exercise or expiration of appeal rights.

(f) **Incorporation of Provisions.** The Contractor shall include the provisions of paragraphs (a) through (e), above, in every subcontract, including procurement of materials and leases of equipment, unless exempt by the Regulations or directives issued pursuant thereto. The Contractor shall take such action with respect to any subcontract or procurement as the County or the FAA may direct as a means of enforcing such provisions including sanctions for noncompliance. Provided, however, that in the event Contractor becomes involved in, or is threatened with, litigation with a subconsultant or supplier as a result of such direction, the Contractor may request the County to enter into such litigation to protect the interests of the County and, in addition, the Contractor may request the United States to enter into such litigation to protect the interests of the United States.

(g) The Contractor, as a part of the consideration hereof, does hereby covenant and agree that in the event facilities are constructed, maintained, or otherwise operated on the said property described in this contract, for a purpose for which a DOT program or activity is extended or for another purpose involving the provision of similar services or benefits, the Contractor shall maintain and operate such facilities and services in compliance with all other requirements imposed pursuant to 49 CFR Part 21, Nondiscrimination in Federally Assisted Programs of the Department of Transportation, and as said Regulation may be amended.

(h) The Contractor, as a part of the consideration hereof, does hereby covenant and agree that: (1) no person on the grounds of race, color, religion, gender, national origin, age, marital status, political affiliation, familial status, physical or mental disability, or sexual orientation shall be excluded from participation in, denied the benefits of, or be otherwise subjected to discrimination in the use of said facilities, (2) that in the construction of any improvements on, over, or under the premises and the furnishing of services thereon, no person on the grounds of race, color, religion, gender, national origin, age, marital status, political affiliation, familial status, physical or mental disability, or sexual orientation shall be excluded from participation in, denied the benefits of, or otherwise be subjected to discrimination, and (3) that the Contractor shall use the premises in compliance with all other requirements imposed by or pursuant to 49 CFR Part 21, Nondiscrimination in Federally Assisted Programs of the Department of Transportation, and as said Regulations may be amended.

II. **NONDISCRIMINATION - 14 CFR PART 152 REQUIREMENTS**
During the performance of this contract, the Contractor, for itself, its assignees and successors in interest agrees as follows:

The Contractor agrees to undertake an affirmative action program as required by 14 CFR Part 152, Subpart E, to insure that no person shall on the grounds of race, color, religion, gender, national origin, age, marital status, political affiliation, familial status, physical or mental disability, or sexual orientation be excluded from participation in any employment, contracting, or leasing activities covered in 14 CFR Part 152, Subpart E. The Contractor agrees that no person shall be excluded on these grounds from participating in or receiving the services or benefits of any program or activity covered by this Subpart. The Contractor agrees that it will require its covered suborganizations to provide assurances to the Contractor that they similarly will undertake affirmative action programs and that they will require assurances from their suborganizations as required by 14 CFR Part 152, Subpart E, to the same effect.

The Contractor agrees to comply with any affirmative action plan or steps for equal employment opportunity required by 14 CFR Part 152, Subpart E, as part of the affirmative action program, and by any federal, state, County or local agency or court, including those resulting from a conciliation agreement, a consent decree, court order or similar mechanism. The Contractor agrees that state or County affirmative action plans will be used in lieu of any affirmative action plan or steps required by 14 CFR Part 152, Subpart E, only when they fully meet the standards set forth in 14 CFR 152.409. The Contractor agrees to obtain a similar assurance from its covered organizations, and to cause them to require a similar assurance of their covered suborganizations, as required by 14 CFR Part 152, Subpart E.

If required by 14 CFR Part 152, Contractor shall prepare and keep on file for review by the FAA Office of Civil Rights an affirmative action plan developed in accordance with the standards in Part 152. The Contractor shall similarly require each of its covered suborganizations (if required under Part 152) to prepare and to keep on file for review by the FAA Office of Civil Rights, an affirmative action plan developed in accordance with the standards in Part 152.

If Contractor is not subject to an affirmative action plan, regulatory goals and timetables, or other mechanism providing for short and long-range goals for equal employment opportunity under Part 152, then Contractor shall nevertheless make good faith efforts to recruit and hire minorities and women for its aviation workforce as vacancies occur, by taking any affirmative action steps required by Part 152. Contractor shall similarly require such affirmative action steps of any of its covered suborganizations, as required under Part 152.

Contractor shall keep on file, for the period set forth in Part 152, reports (other than those submitted to the FAA), records, and affirmative action plans, if applicable, that will enable the FAA Office of Civil Rights to ascertain if there has been and is compliance with this subpart, and Contractor shall require its covered suborganizations to keep similar records as applicable.

Contractor shall, if required by Part 152, annually submit to the County the reports required by Section 152.415 and Contractor shall cause each of its covered suborganizations that are
covered by Part 152 to annually submit the reports required by Section 152.415 to the Contractor who shall, in turn, submit same to the County for transmittal to the FAA.

III. NONDISCRIMINATION - GENERAL CIVIL RIGHTS PROVISIONS

The Contractor, for itself, its assignees and successors in interest agrees that it will comply with pertinent statutes, Executive Orders and such rules as are promulgated to assure that no person shall, on the grounds of race, color, religion, gender, national origin, age, marital status, political affiliation, familial status, physical or mental disability, or sexual orientation be excluded from participating in any activity conducted with or benefiting from Federal assistance. This Provision obligates the Contractor or its transferee, for the period during which Federal assistance is extended to the airport program, except where Federal assistance is to provide, or is in the form of personal property or real property or interest therein or structures or improvements thereon. In these cases, the Provision obligates the party or any transferee for the longer of the following periods: (a) the period during which the property is used by the sponsor or any transferee for a purpose for which Federal assistance is extended, or for another purpose involving the provision of similar services or benefits; or (b) the period during which the airport sponsor or any transferee retains ownership or possession of the property. In the case of contractors, this Provision binds the contractors from the bid solicitation period through the completion of the contract.

IV. NONDISCRIMINATION - 49 CFR PART 26

Contractors shall not discriminate on the basis of race, color, religion, gender, national origin, age, marital status, political affiliation, familial status, physical or mental disability, or sexual orientation in the performance of this contract. Failure by the Contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy as the County deems appropriate.
ATTACHMENT II

PROVISIONS PERTAINING TO AIRPORT PROJECTS
ALL CONSULTANTS/CONTRACTOR AGREEMENTS:

[USE THE TERMS COMPANY, CONSULTANT OR CONTRACTOR AS APPLICABLE]

1. SECURITY

Airport Security Program and Aviation Regulations.
Consultant/contractor agrees to observe all security requirements and other requirements of the Federal Aviation Regulations applicable to Consultant/contractor, including without limitation, all regulations of the United States Department of Transportation, the Federal Aviation Administration and the Transportation Security Administration. Consultant/contractor also agrees to comply with the County's Airport Security Program and the Air Operations Area (AOA) Vehicle Access Program, and any amendments thereto, and to comply with such other rules and regulations as may be reasonably prescribed by the County, and to take such steps as may be necessary or directed by the County to insure that subconsultants/subcontractors, employees, invitees and guests of Consultant/contractor observe these requirements. If required by the Aviation Department, Consultant/contractor shall conduct background checks of its employees in accordance with applicable Federal Regulations. If as a result of the acts or omissions of Consultant/contractor, its subconsultants/subcontractors, employees, invitees or guests, the County incurs any fines and/or penalties imposed by any governmental agency, including without limitation, the United States Department of Transportation, the Federal Aviation Administration or the Transportation Security Administration, or any expense in enforcing any Federal regulations, including without limitation, airport security regulations, or the rules or regulations of the County, and/or any expense in enforcing the County's Airport Security Program, then Consultant/contractor agrees to pay and/or reimburse to County all such costs and expenses, including all costs of administrative proceedings, court costs, and attorney's fees and all costs incurred by County in enforcing this provision. Consultant/contractor further agrees to rectify any security deficiency or other deficiency as may be determined as such by the County or the United States Department of Transportation, Federal Aviation Administration, the Transportation Security Administration, or any other Federal agency with jurisdiction. In the event Consultant/contractor fails to remedy any such deficiency, the County may do so at the sole cost and expense of Consultant/contractor. The County reserves the right to take whatever action is necessary to rectify any security deficiency or other deficiency.

(a) Access to Security Identification Display Areas and Identification Media. The consultant/contractor shall be responsible for requesting the Aviation Department to issue Airport Issued Identification Media to all employees who are authorized access to Security Identification Display Areas ("SIDA") on the Airport, as designated in the Airport Security Program. In addition, consultant/contractor shall be responsible for the immediate reporting of all lost or stolen Airport Issued Identification Media and the immediate return of the media of consultant/contractor's personnel transferred from the Airport, or terminated from the employ of the consultant/contractor, or upon termination of this Agreement. Before an Airport Issued Identification Media is issued to an employee, consultant/contractor shall comply with the requirements of applicable Federal regulations.
with regard to fingerprinting for criminal history record checks and security threat assessments, and shall require that each employee complete security training programs conducted by the Aviation Department. The consultant/contractor shall pay or cause to be paid to the Aviation Department such charges as may be established from time to time for lost or stolen Airport Issued Identification Media and those not returned to the Aviation Department in accordance with these provisions. The Aviation Department shall have the right to require the consultant/contractor to conduct background investigations and to furnish certain data on such employees before the issuance of Airport Issued Identification Media, which data may include the fingerprinting of employee applicants for such media.

(b) **Operation of Vehicles on the AOA:** Before the consultant/contractor shall permit any employee of consultant/contractor or of any subconsultant/subcontractor to operate a motor vehicle of any kind or type on the AOA (and unless escorted by an Aviation Department approved escort), the consultant/contractor shall ensure that all such vehicle operators possess current, valid, and appropriate Florida driver's licenses. In addition, any motor vehicles and equipment of consultant/contractor or of any subconsultant/subcontractor operating on the AOA must have an appropriate vehicle identification permit issued by the Aviation Department, which identification must be displayed as required by the Aviation Department.

(c) **Consent to Search/Inspection:** The consultant/contractor agrees that its vehicles, cargo, goods and other personal property are subject to being inspected and searched when attempting to enter or leave and while on the AOA. The consultant/contractor further agrees on behalf of itself and its subconsultant/subcontractors, that it shall not authorize any employee or other person to enter the AOA unless and until such employee or other person has executed a written consent-to-search/inspection form acceptable to the Aviation Department. Consultant/contractor acknowledges and understands that the foregoing requirements are for the protection of users of the Airport and are intended to reduce incidents of cargo tampering, aircraft sabotage, thefts and other unlawful activities at the Airport. For this reason, consultant/contractor agrees that persons not executing such consent-to-search/inspection form shall not be employed by the consultant/contractor or by any subconsultant/subcontractor at the Airport in any position requiring access to the AOA or allowed entry to the AOA by the consultant/contractor or by any subconsultant/subcontractor.

(d) Consultant/contractor understands and agrees that if any of its employees, or the employees of any of its subconsultants/subcontractors, are required in the course of the work to be performed under this Agreement to access or otherwise be in contact with Sensitive Security Information ("SSI") as defined and construed under Federal law, that individual will be required to execute a Sensitive Security Information Non-Disclosure Agreement promulgated by the Aviation Department.

(e) The provisions hereof shall survive the expiration or any other termination of this Agreement.

2. **PROHIBITED INTERESTS**
If this Agreement is funded by any federal or state grants, then, in that event, no member, officer, or employee of County during his or her tenure or for two (2) years thereafter shall have any interest, direct or indirect, in this Agreement or the proceeds thereof.

Consultant/contractor agrees to insert the foregoing sentence in any agreements between consultant/contractor or subconsultants/subcontractors engaged to provide services pursuant to this Agreement.

If any such present or former member, officer, or employee has such an interest and if such interest as set forth above is immediately disclosed to the County, the County with prior approval of the funding agency, may waive the prohibition contained in this subsection; provided that any such present member, officer, or employee shall not participate in any action by the County relating to such Agreement.

3. **RECORDS**

Consultant/contractor shall keep such books, records and accounts and require any and all consultants/contractors or subconsultants/subcontractors to keep such books, records and accounts as may be necessary in order to record complete and correct entries as to personnel hours charged to the Project and any expenses for which consultant/contractor expects to be reimbursed. In addition, to the above, the consultant/contractor shall maintain an acceptable cost accounting system. All work, materials, payrolls, books, accounts, documents, and records relative to the Project, or directly pertinent to the specific contract for the purposes of making an audit, examination, excerpt or transcription shall be available at all reasonable times for examination and audit by County, and in the event such Agreement is subject to federal or state funding or grants, by the Federal Aviation Administration, the Comptroller General of the United States, the Florida Department of Transportation, or any of their duly authorized representatives. Such books, records and accounts shall be kept for the "Retention Period" (as hereinafter defined). Incomplete or incorrect entries in such books, records or accounts shall be grounds for County's disallowance of any fees or expenses based upon such entries. All books, records and accounts which are considered public records shall, pursuant to Chapter 119, Florida Statutes, be kept by consultant/contractor in accordance with such statutes. The "Retention Period" shall be defined as the greater of: (i) the required retention period of the Florida Public Records Act (Chapter 119, Fla. Stat.), if applicable, or (ii) for a period of three (3) years after final payment and the completion of all work to be performed pursuant to this Agreement, or if any audit has been initiated and audit findings have not been resolved at the end of the three years, the books and records shall be retained until resolution of the audit findings, or (iii) if this Project is subject to Florida Department of Transportation grants, for a period of five (5) years after final payment and the completion of all work to be performed pursuant to this Agreement, or if any audit has been initiated and audit findings have not been resolved at the end of the five years, the books and records shall be retained until resolution of the audit findings.
4. **PROTECTION OF RECORDS**

Consultant/contractor shall protect from harm and damage all data, drawings, specifications, designs, models, photographs, reports, surveys and other data created or provided in connection with this Agreement (collectively, "County Property"), while such data and materials are in consultant's/contractor's possession. Such duty may include, but is not limited to, making back-up copies of all data stored by electronic device on any media, taking reasonable actions to prevent damage by impending flood or storm (including, but not limited to, removing the County Property to a safe location), and establishing and enforcing such security measures as are reasonably available, considering the customary practice within consultant's/contractor's trade or profession. If requested by County, consultant/contractor shall furnish to County copies of any and all disks containing drawings and other pertinent data prepared by consultant/contractor in conjunction with this Agreement.

5. **BREACH OF CONTRACT TERMS - SANCTIONS**

Any violation or breach of the terms of this contract on the part of the consultant/contractor or subconsultant/subcontractor may result in the suspension or termination of this contract or such other action which may be necessary to enforce the rights of the parties of this agreement.

6. **RIGHT TO INVENTIONS**

All rights to inventions and materials generated under this contract are subject to regulations issued by the FAA and the County. Information regarding these rights is available from the FAA and the County.

7. **TRADE RESTRICTION CLAUSES TO BE INCLUDED IN ALL SOLICITATIONS, CONTRACTS, AND SUBcontracts**

The consultant/contractor or subconsultant/subcontractor, by submission of an offer and/or execution of a contract, certifies that it:

a. Is not owned or controlled by one or more citizens of a foreign country included in the list of countries that discriminate against U.S. firms published by the Office of the United States Trade Representative (USTR); and

b. Has not knowingly entered into any contract or subcontract for this project with a person that is a citizen or national of a foreign country on said list, or is owned or controlled directly or indirectly by one or more citizens or nationals of a foreign country on said list; and

c. Has not procured any product nor subcontracted for the supply of any product for use on the project that is produced in a foreign country on said list.
Unless the restrictions of this clause are waived by Secretary of Transportation in accordance with 49 CFR 30.17, no contract shall be awarded to a consultant/contractor or subconsultant/subcontractor who is unable to certify to the above. If the consultant/contractor knowingly procures or subcontracts for the supply of any product or service of a foreign country on said list for use on the project, the Federal Aviation Administration may direct through the County cancellation of the contract at no cost to the Government.

Further, the consultant/contractor agrees that, if awarded a contract resulting from this solicitation, it will incorporate this provision for certification without modification in each contract and in all lower tier subcontracts. The consultant/contractor may rely on the certification of a prospective subconsultant/subcontractor unless it has knowledge that the certification is erroneous.

The consultant/contractor shall provide immediate written notice to the County if the consultant/contractor learns that its certification or that of a subconsultant/subcontractor was erroneous when submitted or has become erroneous by reason of changed circumstances. The subconsultant/subcontractor agrees to provide written notice to the consultant/contractor if at any time it learns that its certification was erroneous by reason of changed circumstances.

This certification is a material representation of fact upon which reliance was placed when making the award. If it is later determined that the consultant/contractor or subconsultant/subcontractor knowingly rendered an erroneous certification, the Federal Aviation administration may direct through the County cancellation of the contract or subcontract for default at no cost to the Government.

Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render, in good faith, the certification required by this provision. The knowledge and information of a consultant/contractor is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

This certification concerns a matter within the jurisdiction of an agency of the United States of America and the making of a false, fictitious, or fraudulent certification may render the maker subject to prosecution under Title 18, United States Code, Section 1001.

8. **TERMINATION OF CONTRACT (ALL CONTRACTS IN EXCESS OF $10,000)**

a. The County may, by written notice, terminate this contract in whole or in part at any time, either for the County's convenience or because of failure to fulfill the contract obligations. Upon receipt of such notice, services shall be immediately discontinued (unless the notice directs otherwise) and all materials as may have been accumulated in performing this contract, whether completed or in process, delivered to the County.
b. If the termination is for the convenience of the County, an equitable adjustment in the contract price shall be made, but no amount shall be allowed for anticipated profit on unperformed services.

c. If the termination is due to failure to fulfill the consultant's/contractor's obligations, the County may take over the work and prosecute the same to completion by contract or otherwise. In such case, the consultant/contractor shall be liable to the County for any additional cost occasioned to the County thereby.

d. If, after notice of termination for failure to fulfill contract obligations, it is determined that the consultant/contractor had not so failed, the termination shall be deemed to have been effected for the convenience of the County. In such event, adjustment in the contract price shall be made as provided in paragraph b of this clause.

e. The rights and remedies of the County provided in this clause are in addition to any other rights and remedies provided by law or under this contract.

9. SUSPENSION AND DEBARMENT REQUIREMENTS FOR ALL CONTRACTS OVER $25,000 (AND FOR ALL CONTRACTS FOR AUDITING SERVICES REGARDLESS OF THE AMOUNT)

The bidder/offeror/consultant/contractor certifies, by submission of this proposal or acceptance of this contract, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any Federal department or agency. It further agrees by submitting this proposal that it will include this clause without modification in all lower tier transactions, solicitations, proposals, contracts, and subcontracts. Where the bidder/offeror/consultant/contractor or any lower tier participant is unable to certify to this statement, it shall attach an explanation to this solicitation/proposal.

10. RESTRICTIONS ON LOBBYING

The bidder/offeror/consultant/contractor agrees that no federal appropriated funds have been paid or will be paid by or on behalf of the bidder/offeror/consultant/contractor, to any person for influencing or attempting to influence any officer or employees of any federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any federal contract, the making of any federal grant, the making of any federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment or modification of any federal contract, grant, loan or cooperative agreement.

If any funds other than federal appropriated funds have been paid by the bidder/offeror/consultant/contractor to any person for influencing or attempting to influence an officer or employee of any federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.
Consultant/contractor agrees to insert the foregoing provisions in any agreements between consultant/contractor or subconsultants/subcontractors engaged to provide services pursuant to this Agreement and all bidders/offerors/consultants/contractors and subconsultants/subcontractors shall certify and disclose accordingly.
Broward County Aviation Department (BCAD) utilizes electronic media as the principal way to develop, communicate and archive information concerning its various airport programs.

Prior to development of scope of services for any work authorization or commencing work under any Contract, the Consultant/Contractor must contact the contract administrator and/or designated project manager to verify they have a copy of the latest version of BCAD’s Electronic Media Submittal Requirements. BCAD modifies these requirements as needed to make corrections and/or to keep up with latest industry trends, best practices, guidelines, standards and regulations, as well as, to improve its internal processes. Some requirements below may not apply, or additional requirements may be needed, based on the nature of the scope of services and associated deliverables. Any deviations from the requirements below must be approved by BCAD’s contract administrator or the project manager designated to approve or deny such requests.

(A) General Requirements:

1) All Work, including surveying work, drawings, maps, details or other drawing information to be provided in electronic media by Consultant/Contractor shall be accomplished and developed using computer-aided design (CAD), geographic information system (GIS), and other software and procedures conforming to the following criteria. Electronic data submittals shall also include PDF versions of pages and documentation. The Consultant/Contractor shall expect to produce three primary sets of electronic deliverables:

   • CAD – Engineering Design Drawings
   • GIS – FAA AGIS Submittal, eALP, and BCAD GIS Use
   • PDF – Electronic Document Review and Storage/As-Builts

(B) CAD and GIS Formats:

1) Provide all CAD data in Autodesk, Inc.’s AutoCAD release 2010 or higher for Windows in native .dwg electronic digital format. Provide copies of all drawing sheets or other CAD produced documents intended for hardcopy plotting or printing in plot (.plt) and drawing web format (.dwf) versions of all sheets/documents, formatted to fit BCAD standard cover sheet and title block, as detailed in Section (C) below. All GIS data shall be delivered in formats compatible with ESRI ArcGIS version 9.3 or higher. Specific formats (e.g. shape file, layer files, geodatabase, and/or other file type/structure) shall be of BCAD’s choosing to meet their internal needs as well as FAA requirements. All deliverables must include appropriate metadata conforming to BCAD and FAA standards. When requested, the Consultant/Contractor will be required to ensure that all GIS data is formatted for successful submission to the FAA AGIS portal without any additional changes.
required by BCAD staff. Consultant/Contractor GIS and CAD data deliverables shall conform to the latest BCAD and FAA standards and/or guidelines, including but not limited to: FAA Advisory Circulars (AC) 5300/150-16, 17 and 18, and US National CAD Standards.

2) Target OS platform: Windows operating system.

3) Ensure that all digital files and data (e.g., constructs, elements, base files, prototype drawings, reference files, blocks, attribute links, and other files external to the drawing itself) are compatible with the BCADs Target CAD and GIS systems (i.e., basic and advanced CAD and GIS software, platforms, database software/s, geodatabases, etc.), and adhere to the standards and requirements specified herein.

4) The term "compatible" means that data can be accessed directly by the target CAD and GIS software without translation, pre-processing, or post-processing of the electronic digital data files. It is the responsibility of Consultant/Contractor to ensure this level of compatibility.

5) Non-geospatial database delivered with CAD/GIS files must be provided in relational database format compatible with Microsoft Access 2007 or higher, and other compatible format requested by BCAD. Data shall be delivered in an ESRI geodatabase format of BCAD's choosing upon request.

6) Maintain all linkages of non-graphical data with graphic elements, relationships between database tables, and report formats. Consultant/Contractor should work with BCAD to ensure linkages will conform/match those already in place or generated to create such links.

7) All database tables: conform to the structure and field-naming guidance provided upon request by BCAD. Specifically, all database tables shall conform to applicable FAA and BCAD standards and guidelines. All databases shall be compliant with at least MS Access 2007 and/or other format (dbf, xml, ESRI geodatabase, other) as requested by BCAD. Formats may change, at BCADs request, depending on the particulars of the projects. Consultant/Contractor shall inform BCAD of the most suitable format for a given project and explain, in writing, the benefits of that format versus alternatives. BCAD has the final decision as to format regardless of Consultant's/Contractor's written explanation.

8) All CAD and GIS files shall meet FAA/NGS spatial accuracy requirements and be georeferenced as follows:

   North American Datum (NAD) 83, HARN, US Survey Feet
   State Plane Coordinate System, Florida East Zone
   North American Vertical Datum (NAVD) 88, US Survey Feet

9) All data collected shall meet or exceed data acquisition standards established in AC 5300/150-16, 17, and 18, if applicable.
(C) Standards:

1) Standard plotted drawing size: 22 inch x 34 inch sheets unless otherwise specified by BCAD. All drawings shall be formatted to use the BCAD standard Cover Page and Title Block.

2) Coordinate with BCAD concerning the standard file naming protocol to be utilized. Consultant/Contractor may be required to submit drawing files with several naming conventions to satisfy various submittal requirements.

3) Unless otherwise stated, all CAD files shall conform to US National CAD standards (BCADs adopted CAD standard) in addition to FAA standards for submission into the FAA AGIS system.
   a) All building floor plans/elevations shall be drawn and provided in Architectural Units (unless otherwise requested by BCAD).
   b) All other plans (site plans, airfield plans, ALPs, etc.) shall be submitted in Engineering Units (unless otherwise requested by BCAD).

4) Layering:
   a) Conform to the guidelines defined by the US National CAD Standards, appropriate FAA Advisory Circulars and standards, and BCAD standards.
   b) Provide an explanatory list of layers used for each drawing, including those which do not conform to the standards listed above. Submission of layers that do not conform to the standards listed above will require advance BCAD approval.
   c) Raster: All raster files (aerial photography, TIN, DEM, etc.) shall be delivered in georeferenced SID and TIFF formats as defined by BCAD. If files must be tiled, a reference map will be provided depicting the location of each tile image. All raster files shall be tiled if file size reaches a size in excess of what BCAD finds difficult to use.

5) Attribute Definitions:
   a) Obtain latest guidance from BCAD concerning attribute definition, database linking and other information embedding requirements prior to production of documents. All database information shall conform to the latest versions of FAA ACs 150/5300-16, 17, and 18, and other BCAD standards. Additional attributes may be required at the discretion of BCAD.

6) Conformance:
   a) Submit a written request for approval of any deviations from the established CAD/GIS standards. Pre-coordinate the development, use and submittal of 3-D modeling, Building Information Models (BIM), photorealistic renderings, animations, presentations and other visualization/ information tools utilized during the design and construction process to ensure compatibility of submittal with County's uses and information systems.
b) No deviations from BCADs established CAD/GIS standards will be permitted unless prior written approval of such deviation has been received from BCAD.

(D) Non-CAD/GIS Graphic Format:

1) Provide digital photography files (unless required in an alternate format such as that needed for CAD/GIS) and other miscellaneous graphics in JPEG and TIFF formats. Photos shall be geotagged in accordance with BCAD standards, if applicable.

(E) Non-Graphic Format:

1) Provide word processing files in Microsoft Word 2007 compatible file formats including all fonts, typefaces, bit-map and vector graphics and other information necessary for remote printing.
2) Provide spreadsheet files in Microsoft Excel 2007 for windows compatible file formats including all fonts, typefaces, bitmap and vector graphics and other information necessary for remote printing.
3) Provide database files in relational database format compatible with Microsoft Access 2007 or higher, and/or other compatible SQL format database including all tables, form and report formats, fonts, typefaces, bit-map and vector graphics and other information necessary for remote printing. Ensure integrity of relational database structure. Consultant/Contractor may be required to ensure that database formats conform and can be integrated with other BCAD legacy applications and systems.

(F) Delivery Media and Format:

1) Submit copies of all CADD/GIS/PDF data and other electronic files developed under this contract on electronic digital media as required for project phase submittals.
2) Provide electronic digital data and files shall be provided on DVD/CD or via secure file transfer protocol (FTP) site.
3) The electronic digital media shall be in the format which can be read and processed by the SCAD's target CAD/GIS systems.
4) The external label for each electronic digital media shall contain, as a minimum, the following information:
   a) The Project Number, Project Title and date
   b) The Facility Name
   c) The format and version of operating system software
   d) The name and version of utility software used for preparation (e.g., compression/decompression) and copying files to the media
   e) The sequence number of the digital media
   f) A list of the filenames
   g) All requirements to meet or exceed FAA and BCAD standards
5) Before all files are placed on the delivery electronic digital media, the following procedures shall be performed:
a) Ensure that drawing sheets, viewports, paperspace, line weights, fonts, and other drawing components are correctly configured for BCAD's viewing and plotting.
b) Make sure all reference files are attached without device or directory specifications.

c) Compress and reduce all design files using compatible file compression/decompression software approved by BCAD. If the file compression/decompression software is different from that specified above, then an electronic digital media copy of the file compression/decompression software shall be purchased and licensed for BCAD and provided to BCAD with the delivery media.

d) Include all files, both graphic and non-graphic, required for the project. All blocks not provided as BCAD-furnished materials must be provided to BCAD as a part of the electronic digital deliverables.

e) Make sure that all support files, such as those listed above, are in the same directory and that references to those files do not include device or directory specifications.

f) Include any standard sheets (i.e., abbreviation sheets, standard symbol sheets, or other listing) necessary for a complete project. These shall conform to BCAD standard cover sheet and title block pages.

g) Document any fonts, tables, or other similar customized drawing element developed by Consultant/Contractor or not provided among BCAD furnished materials. The contractor shall obtain BCAD's approval before using anything other than BCAD's standard fonts, line types, tables, blocks, or other drawing elements available from BCAD.

(G) Drawing Development Documentation:

1) Provide the following information for each finished drawing:
   a) How the data were input (e.g., keyed in, downloaded from a survey total station instrument (include name and model), and other identification data).
   b) Brief drawing development history (e.g., date started, modification date(s) with brief description of item(s) modified, author's name, and other identifying data.).
   c) The names of the reference, blocks, symbols, details, tables, and schedule files required for the finished drawing.
   d) Layer assignments and lock settings.
   e) Text fonts, line styles/types used, and GIS layer file settings.
   f) Any additional information per FAA ACs and BCAD standards.

(H) Submittal:

1) Submit as Project Record Documents specified above and as required for project phase submittals and project record documents.

2) Submit electronic media with a transmittal letter containing, as a minimum, the following information:
a) The information included on the external label of each media unit (label), along with the total number being delivered, and a list of the names and descriptions of the files on each one.
b) Brief instructions for transferring the files from the media.
c) Certification that all delivery media are free of known computer viruses. A statement including the name(s) and release date(s) of the virus-scanning software used to analyze the delivery media, the date the virus-scan was performed, and the operator's name shall also be included with the certification. The release or version date of the virus-scanning software shall be the current version which has detected the latest known viruses at the time of delivery of the digital media.
d) The following "File Development and Project Documentation Information" as an enclosure or attachment to the transmittal letter provided with each electronic digital media submittal.

(1) Documentation of the plot file for each drawing which will be needed to be able to duplicate the creation of the file by BCAD at a later date. This documentation shall include configuration settings (e.g., drawing size and configuration), and any other special instructions.
(2) List of any deviations from BCAD's standard layer/level scheme and file-naming conventions.
(3) List of all new symbol blocks created for project, which was not provided to Consultant/Contractor with the BCAD-furnished materials.
(4) List of all new figures, symbols, tables, schedules, details, and other blocks created for the project, which were not provided to Consultant/Contractor with the BCAD-furnished materials, and any associated properties.
(5) List of all database files associated with each drawing, as well as a description and documentation of the database format and schema design. All information shall conform to FAA and BCAD standards.
(6) All metadata per BCAD, FAA, FDOT, or other entity standards.

(I) Ownership:

1) County will have ownership of all information and materials developed under these and other contractual requirements including but not limited to reports, and listings, and all other items pertaining to the work created or developed in connection with the services provided pursuant to the agreement with Broward County including any copyright.
2) Ownership rights under the contract are rights to use, re-use, duplicate, or disclose text, data, drawings, and information, in whole or in part in any manner and for any purpose whatsoever without compensation to or approval from Consultant/Contractor.
3) BCAD will at all reasonable times have the right to inspect the work and will have access to and the right to make copies of the above-mentioned items.
4) All text, electronic digital files, data, and other products generated under this contract shall become the property of County except where otherwise limited within the Contract.
5) All files/drawings shall be furnished to BCAD upon request from BCAD.
6) No portion of any "application" (e.g. database, GIS portal, web application, or customized document or tool) developed for BCAD shall be used as a template for non Broward County projects unless the prior approval in writing is obtained from BCAD.

(J) BCAD-Furnished Materials to the Consultant/Contractor:

1) BCAD and Consultant/Contractor may make various electronic files available to the Contractor during the Pre-Construction and Construction phases of the Project. To this end, Consultant/Contractor shall make the following information available to the Contractor in electronic format:

a) Work files: Selected work product files, reports, spreadsheets, databases, specifications, drawings and other documentation of Consultant's/Contractor's work in progress may be provided to the Contractor, Managing General Contractor, or other County consultant on an as required basis. Consultant/Contractor shall cooperate and facilitate the exchange of these electronic media documents.

b) Where electronic media submittals of final site surveys are required, Consultant will provide electronic copies of any existing site survey data already on electronic media.

c) Where Electronic Project Record Documents are required, Consultant will provide the Contractor one set of AutoCAD electronic file format contract drawings, to be used for as-built drawings at the Contractor's option. Make electronic file drawings available on DVD/CD ROM media.

d) BCAD will supply Consultant/Contractor with all necessary BCAD standard cover page and title block files and formats.

(K) Other Digital Information:

1) A variety of digital information may be generated by participants in the design process including BCAD, Consultant, sub consultants, Contractor, subcontractors; BCAD's commissioning authority, local jurisdictional authorities and other project team members.

2) Consultant/Contractor shall facilitate and participate wherever possible in this digital exchange of information by conforming to the standards expressed above.
ATTACHMENT IV
EXHIBIT A
SCOPE OF SERVICES/PHASES/TASKS

(THE REMAINDER OF THIS PAGE IS INTENTIONALLY LEFT BLANK.)
Master Plan Update
Phase I and Phase II Scope of Services

PREPARED FOR:
Broward County Aviation Department

PREPARED BY:
RICONDO & ASSOCIATES, INC.

August 26, 2015
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Exhibit A

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FORT LAUDERDALE-HOLLYWOOD INTERNATIONAL AIRPORT

Master Plan Update – Scope of Services

PHASE I

Task I.1 – Project Management and Coordination

Overview and Scope of Services
Ricondo & Associates, Inc. (R&A) will serve as the Prime Consultant for Fort Lauderdale-Hollywood International Airport’s (FLL’s) Master Plan Update and will assume the lead responsibility for the timely, high-quality, on budget delivery of the Master Plan Update deliverables as well as the underlying technical analyses in accordance with the contractual requirements specified in the Agreement between R&A and Broward County for this assignment. R&A will oversee and manage the work performed by our various subconsulting team members (collectively referred to as the R&A Team), and provide direction and guidance as necessary to ensure consistency among the team’s study activities and work products.

A more detailed description and summary of the project management and coordination activities that will be provided by R&A as part of this initial phase of the FLL Master Plan Update are provided below.

I.1A R&A Team Coordination Meetings
Monthly in-person or teleconference coordination meetings will be held among the team members to review the status and progress of each task, schedule and budget performance. A maximum of eight (8) meetings or teleconferences are anticipated in Phase I of the FLL Master Plan Update.

I.1B Study Tasks Initiation Meetings
Task initiation meetings will be held at the commencement of each key study task. These meetings will include representatives from BCAD, R&A (and, if appropriate, other firms from the R&A Team), and other key personnel or stakeholder as required or as suggested by BCAD. The purpose of these meetings will be to review and validate proposed methodologies, assumptions, task inputs, scope content and exclusions, task schedule and key milestones, and specific data requirements. These meetings may be held in-person or via teleconference. It is anticipated that there will be a maximum of seven (7) task initiation meetings or teleconferences in Phase I of the FLL Master Plan Update.

I.1C Client Working/Brainstorming Sessions
It is anticipated that there will be a maximum of three (3) working/brainstorming sessions with BCAD in Phase I of the FLL Master Plan Update. The purpose of these working sessions is to have interactive discussions or brainstorming sessions among R&A, members from the R&A Team as appropriate, and BCAD in a collaborative setting rather than a more formal briefing environment. These are separate from the ongoing coordination meetings and working sessions anticipate to take place between R&A’s Project Manager and BCAD’s Project Manager throughout the duration of the FLL Master Plan Update.

I.1D Formulation of Master Plan Update – Phase I Schedule
R&A will prepare a preliminary detailed schedule for Phase I of the FLL Master Plan Update using Microsoft Project for BCAD’s review and comment immediately following the Notice to Proceed/Consultant Work Authorization. Revisions will be made based on BCAD’s comments for further
discussions with the Florida Department of Transportation (FDOT) and the Federal Aviation Administration’s (FAA’s) Airports District Office (ADO) – both of which are anticipated to be funding partners for the Master Plan Update. A second draft schedule will be prepared and submitted to BCAD for review and comment. Upon BCAD’s review, a third and final schedule will be prepared and submitted for BCAD approval. R&A will coordinate with all team members as necessary on the schedule for their participation relative to their defined roles. During the course of the project, R&A will monitor and maintain the schedule, and if necessary, will issue adjustments as required.

1.1E  Formulation of Study Advisory Committees
Working with the BCAD staff, a committee structure will be defined to participate and provide guidance throughout the master planning process. It is anticipated that two (2) committees will be formed. Each committee will perform a distinct role, but will serve to compliment or supplement the input provided by the other committee.

- The Policy Advisory Committee (PAC) is anticipated to be comprised of BCAD senior management staff as well as key members of other Business and Economic Development agencies, governmental and community groups, and policy makers. This Committee will provide input to the planning team on macro-level policy issues, considerations, near-term and long range aviation goals of the County, and other factors that shape or affect the role of each airport in the County, as well as facility or operational needs that will affect the diversity and breadth of analyses undertaken in the master planning process. It will also provide valuable input regarding community issues and concerns relating to the Airport system and the airport’s relationship to the overall community and individual municipalities.

- The Technical Advisory Committee (TAC) will be geared toward review of the master planning analyses and its various tasks from a technical perspective. It is anticipated that this committee will include BCAD staff from various divisions, airline representatives, the FDOT, the Metropolitan Planning Organization (MPO), City and County Community and Transportation Planning Agencies and the FAA including the regional office, the Air Traffic Control Tower and ADO, and Airway facilities, Airport tenants, and other key Airport users. This committee will review and comment on the technical and operational analyses and recommendations.

Meeting allowances for interacting with these Committees is included within the overall scope and budget established for the Stakeholder Engagement and Public Outreach Program Implementation task.

1.1F   FAA and FDOT Grant Support and Coordination
R&A will assist BCAD with coordination regarding FAA and FDOT grants for the FLL Master Plan Update. The following activities will be conducted:

- Submittal of the FLL Master Plan Update scope of work, budget, and schedule to FAA and FDOT, or independent consultant, as requested by BCAD.

- Response to comments from FAA, FDOT, and/or independent consultant on scope of work, budget, and schedule.

- Up to three (3) teleconferences to discuss comments and/or R&A’s response to comments.
I.1G BCAD/R&A Team Data Exchange Platform
R&A will work with BCAD to define a platform (site) for exchanging electronic data files and deliverables throughout the FLL Master Plan Update. The site will be used exclusively for uploading and downloading data files. The site will be password protected.

I.1H Master Plan Update Web Page
The Broward County Office of Public Communications and BCAD Public Information Office leads the design, development, and maintenance of all public media including the website, social media and other public communication media. As such, R&A will work closely with these County and BCAD offices by developing and providing project specific content and related materials for the website and other public media. Anticipated support responsibilities include:

- Develop key messaging with input and collaboration from internal stakeholders (i.e. BCAD, R&A Team members, Advisory Committees). Messaging will be written and developed in the appropriate voice and format based on the unique demographics of the target stakeholder group.
- Meet with Broward County Office of Public Communications and BCAD Public Information Office to determine process for design and development of project website and related social media.
- Support Broward County public communications team with gathering, writing and developing content for the webpage and other related media.
- Continue to provide updated information and content throughout the master planning process.

I.1I Coordination with Other Ongoing BCAD Projects or Capital Programs
R&A anticipates having to coordinate with the consulting teams and/or BCAD project managers for other BCAD projects or capital programs that will be active and ongoing during the development of the FLL Master Plan Update. Coordination will be necessary to exchange information about projects with a focus towards avoiding duplication of efforts, and ensuring consistency in data assumptions. The following programs have been identified by BCAD:

- South Runway Expansion Program
- North Runway Rehabilitation Program
- Airspace Mitigation Program
- Terminals 1, 2 and 3 Renovation and Expansion Programs
- Terminal 4 Program
- Future FAR Part 150 study
- FLL Landside Analysis
- Westside Area Development

R&A anticipates accomplishing this coordination on the basis of teleconferences, in-person meetings, and data exchanges. A maximum of three (3) in-person meetings, six (6) teleconferences, and associated data exchanges are anticipated in Phase I. It is also assumed that BCAD will provide R&A with relevant data and electronic files in digital format, and facilitate coordination with key staff involved in other BCAD projects or programs.
I.1J Development of Project Manual
R&A will prepare a Project Manual to be used as a reference document by all members of the Master Plan Update team. This document will establish coordination protocol and will facilitate the execution of all elements of the Master Plan Update. The document will contain the following sections:

- Master Plan contacts (R&A Team, BCAD and others)
- Scope of services
- Schedule
- Document and correspondence templates

R&A will work with BCAD to identify the desired format for reports, meeting minutes, status reports and other related documents. The Project Manual will be distributed to all members of the team and will establish the standards to be applied for all project documentation. It will be distributed electronically and maintained with the established Master Plan Update webpage.

I.1K Progress Reports
R&A will provide the BCAD Project Manager, and others as required, with monthly written status reports on project schedule, upcoming milestones, and budget as well as any issues that have arisen that may affect delivery of the Master Plan Update. In addition, monthly invoice billing reports will be submitted to BCAD for approval and processing. The format of these reports will be discussed and agreed upon with BCAD. In addition to formal status reports there will be informal status reports in the form of conference calls, meetings and other discussions throughout the duration of the project.

I.1L Monthly OESBD Goals Reports
R&A will provide the BCAD Project Manager, and others as required, with monthly OESBD goals reports following BCAD protocol for documentation of DBE participation.

Assumptions and General Comments:
- R&A would serve as the point of contact for communications among BCAD and members of the R&A Team unless otherwise agreed upon on a task by task basis for purposes of facilitating study performance, efficiency, and communications.

Items of Work Not Included in Scope:
Additional meetings or project management and coordination services beyond those specifically outlined in this task’s scope of work.

Supporting Sub-Consultant
None

Data & Resources Required From BCAD or Other Parties
As specifically noted under the Scope of Services above
Deliverables

- Roster of Members comprising the Policy and Technical Advisory Committees.
- Project schedule
- Monthly status reports
- Monthly OESBD reports
- BCAD/R&A Team Data Exchange Platform
- Project Manual
Overview and Scope of Services
The purpose of the stakeholder engagement strategy and public outreach program is to obtain meaningful input from key stakeholder groups or members of the public that may be impacted by the outcomes of the proposed FLL Master Plan Update. FLL affects a broad and diverse group of stakeholders, both internal and external. It is, therefore, important to develop an engagement strategy and public outreach process that is inclusive and strives to create an environment that promotes meaningful dialogue and opportunities for stakeholders and the public to actively participate in the master planning process.

Key goals for the public outreach effort include:

- Meet and collaborate with BCAD and relevant internal leadership to identify a comprehensive list of key stakeholders that must be engaged in the planning process. Anticipated stakeholder groups include but may not be limited to:
  - Internal Stakeholders – BCAD, the R&A Team, Policy and Technical Advisory committee members, airlines, major Airport tenants, etc.
  - External Stakeholders – impacted County departments (i.e. Port, Convention Center, Public Works, etc.), regulatory agencies, public officials, municipalities, business leaders (i.e. Port Everglades Association, Broward Workshop, Broward Alliance, etc.)
  - General Public – residential/homeowner associations & business communities at-large

- Determine the most effective communication platform(s) for engaging the demographics of each stakeholder group and all interested parties in order to solicit comments and input including but not limited to workshops, charrettes, public meetings, public open houses, individual meetings, electronic surveys, websites, social media, and other sources.

- Develop a proposed timeline, schedule and frequency for engaging each stakeholder group.

- Develop approach, roles and responsibilities for developing webpage and related social media materials.

- Formulate a Stakeholder Engagement and Public Outreach Plan/Program that clearly defines and outlines implementation approach for the above mentioned items. Following a pre-determined internal comment period, revisions and upon internal team approval, a final Plan/Program will serve as a framework for the public outreach plan throughout the planning process.

*Meeting allowances for interacting with these Committees is included within the overall scope and budget established for the Stakeholder Engagement and Public Outreach Program Implementation task.*
Assumptions and General Comments:

- R&A would lead communications to the Stakeholder groups and the Public relative to the technical analysis and results of the Master Plan Update. Dickey Consulting Services would handle logistical aspects associated with the implementation of the Stakeholder Engagement and Public Outreach Plan/Program (under a separate task). R&A would also follow the appropriate protocols and communication channels BCAD may have in place for stakeholder, public and media engagement and interaction.

**Items of Work Not Included in Scope:**
Stakeholder Engagement and Public Outreach Meetings.
Implementation of the Stakeholder Engagement and Public Outreach Plan/Program.

**Supporting Sub-Consultant**
Dickey Consulting Services, Inc.

**Data & Resources Required From BCAD or Other Parties**
As specifically noted under the Scope of Services above

**Deliverables**
- Plan/Program for Stakeholder Engagement and Public Outreach
Overview and Scope of Services
The master plan visioning task will establish the goals and objectives for the Airport and the FLL Master Plan Update based on input from both internal and external stakeholders. It will establish the framework by which alternatives will be developed, evaluated and refined. This task will also help identify the major issues facing the Airport in the form of a situational analysis, and will culminate with a set of strategic objectives and a vision statement to guide the master plan update process.

I.3A Situation Analysis
The situational analysis will consist of a high level review of material to be provided by BCAD and available through other public sources regarding the internal and external factors that drive growth at FLL and influence the issues to be addressed in the Master Plan Update. This will entail a scan of local, regional and global trends associated with aviation, transportation, sustainability, and other relevant considerations. The focus of the situational analysis will be to identify and understand all potential issues that could influence the outcome of the Master Plan Update, as well as the perusal and summary of all available BCAD information. The situational analysis will assess the landscape within which FLL operates based on the following broad categories:

- Local and regional political jurisdictions
- Physical boundaries
- Surface transportation systems
- Social and community considerations
- Financial and economic conditions
- Legal and regulatory framework
- Environmental issues and considerations; and
- The airport system (comprising FLL and North Perry Airport) and the relationship between the airports in south Florida

An important step will be to identify any readily available existing transportation demand data from other sources such as FDOT, Broward County Transit, Tri-Rail, WAVE Street Car, All Aboard Florida, or similar sources, for incorporation in the analysis. This task will be limited to discussions with BCAD staff and will not involve discussions with other stakeholders.
The completion of this task will be used to develop the Master Plan Vision and Strategic Objectives, and will complement the inventory task in which the existing conditions at FLL are assessed in a greater level of detail.

1.3B Formulation of Strategic Objectives
At the onset of this master planning process, BCAD identified the following broad objectives:

- Justify the proposed development plan within the study area through technical, economic, and environmental investigation of concepts and alternatives.
- Provide a modern graphic presentation of the future development of the airport and anticipated land uses in the vicinity of the Airport.
- Establish a realistic schedule for the implementation of the development proposed in the short, mid and long term planning horizons.
- Propose an achievable financial plan to support the implementation schedule.
- Provide the foundation for environmental evaluations that may be required prior to receiving project approval.
- Present a plan that adequately addresses the issues and satisfies local, state, and federal regulations.
- Document policies and future aeronautical demand to support Broward County best practices on spending, debt, land use controls, and other policies necessary to preserve the integrity of the Airport and its surroundings.
- Set the stage and establish the framework for a continuing airport planning process with supporting public coordination and participation element.
- Support sustainability goals

Through meetings with BCAD staff, R&A will confirm and elaborate on these objectives. R&A will also identify key drivers, issues, constraints and opportunities to be addressed during the Master Plan Update. This process will culminate with a list of the strategic objectives that will be used to guide the development of options, as well as the metrics that will be used to screen, evaluate, and refine the most viable options.

1.3C Define Vision
Based on the results of the situational analysis and the development of strategic objectives, R&A will establish a draft vision statement to guide the master planning process. This vision statement will be discussed in a collaborative working session with a select group of key stakeholders, to be determined in consultation with BCAD leadership. The vision statement will be refined based on the working session, and will culminate as a concise summary of the strategic objectives and direction from BCAD leadership to be considered in the execution of the various Master Plan Update tasks.

The vision statement is intended to be a high level conception of the strategic goals. It will be used as a framework for future airport development, including the possible boundaries of the planning considerations and assumptions. The result of this visioning session will set the foundation for the balance of the master planning process. This vision statement will be referred to in the public outreach process and in discussions with the FAA, airlines and other stakeholders.
1.3D Visioning Charrettes
Prepare for and conduct up to two (2) half-day stakeholder visioning charrettes. Each charrette will include a professional facilitator to be identified in coordination/cooperation with BCAD. These charrettes will also include discussions to define business goals and objectives for FLL and to refine or confirm the vision defined as part of the prior task – including but not limited to the alignment of the vision and the strategic objectives with broader County goals and objectives for its airports/airport system. R&A’s Project Manager will meet with BCAD and the proposed facilitator in advance to establish the agenda and coordinate other logistical factors associated with each of these visioning charrettes.

Assumptions and General Comments:
• None applicable to this task

Items of Work Not Included in Scope:
Formulation of a Strategic Plan or Business Plan, even though some of the elements typically undertaken in those planning processes are included in the scope of work for this task.

Supporting Sub-Consultant
Dickey Consulting Services, Inc. and Kimley-Horn and Associates, Inc.

Data & Resources Required From BCAD or Other Parties
As specifically noted under the Scope of Services above

Deliverables
• Situation Analysis
• Airport and Master Plan Vision Statement
Overview and Scope of Services
A thorough inventory of existing condition and data collection, comprising both physical attributes and operational/performance characteristics for existing facilities and infrastructure will be undertaken. The data and information collected as part of this inventory task will serve as a baseline of existing conditions by which the subsequent master planning analysis will be based upon. The baseline of existing conditions will be representative of conditions at the Airport during the base year for the Master Plan Update, represented by 2015. As instructed by BCAD, prior or ongoing studies and project data will be utilized. Airport improvements, either planned or being constructed/implemented will be treated as an existing condition, with BCAD’s concurrence. Supplemental data needs or data gaps will be fulfilled through field/site visits and observations, and/or tenant and BCAD interviews by members of the R&A Team.

A detailed description of the scope of services for this inventory task, by airport functional component/system is provided below.

I.4A Airfield and Airspace
Present conditions of the existing airfield system will be collected and documented, such as: runway and taxiway geometry, pavement strengths, obstacle and obstruction information, NAVAIDs, operational restrictions, runway and taxiway centerline clearances, deviations from FAA design standards, and other pertinent airfield information. The existing conditions will assume the full completion of the south runway program as planned, as well as future Airport Layout Plan (ALP) elements that are being phased for implementation in future years – the resulting layout will constitute the baseline airfield conditions for the Master Plan Update. Other on-going or near-term improvements (physical or operational) being considered by BCAD and reflected in the Airport’s CIP, but not necessarily depicted on the ALP will be incorporated, as appropriate, based on discussions with BCAD.

The arrival and departure airspace routes and current approach and departure procedures will be obtained from the existing Standard Operating Procedures from the FLL Air Traffic Control Tower (ATCT) for use in the airfield demand/capacity analysis. Noise abatement procedures and air traffic controller responsibilities will also be inventoried. Interviews with ATCT personnel will be conducted to gather pertinent information related to FLL operations, including but not limited to runway use, runway balancing, runway blocking time/distance, and taxiway routing commonly used. R&A will conduct field observations (up to 16 hours) from the ATCT and other FAA facilities of airfield operations to ensure a full understanding of baseline operation conditions. These observations
will include airfield taxi patterns, runway use, taxiway use, terminal pushback operations and other related air traffic control procedures.

The data collection effort also includes tracking and collecting capacity estimates, supporting analysis, and underlying assumptions for FLL-specific airfield capacity studies conducted by the FAA through MITRE in the past two years as part of its airport capacity studies.

The analysis of airspace obstructions is scoped in a separate task, using a combination of the AGIS survey data and the iALP airspace analysis tool. In this inventory task, R&A will gather the results of that analysis and document the airspace obstructions condition into the inventory report. Thus, the effort scoped under this inventory task is the generation of narrative and graphics to document the existing airspace condition at FLL based on the AGIS and iALP task results. The narrative and graphics will describe existing airspace obstructions to critical airspace surfaces including TERPS, Part 77 and OEI surfaces for each of the runway ends at FLL.

I.4.B Airline Terminals and Gates

The use of dynamic simulation tools will be used to determine the capacity (or maximum number of annual passengers) that can be accommodated by the FLL’s existing passenger terminal facilities, including the completed T1 and T4 programs, as well as the renovations to T2 and T3. This inventory task will require understanding the on-going terminal improvement and renovation programs for Terminals 1, 2, 3 and 4. The existing terminal facilities inventory will reflect the improvements underway based on information to be provided by BCAD. R&A or R&A Team members will meet with BCAD and representatives of the various terminal programs to understand the proposed improvements, timing of improvements, and to establish the conditions that will serve as the baseline for FLL’s Master Plan Update.

Pertinent documents and drawings of the terminal buildings will be obtained and reviewed with regard to how the facilities are laid out and utilized. Existing space utilization and circulation flows will be documented. Terminal area information and characteristics will be collected for each of the terminals and concourses, including apron parking and gate capabilities/configurations. Field verification visits (up to 16 hours/2 days) to validate key information provided on AutoCAD drawings provided by BCAD will be undertaken by members from the R&A Team.

In order to undertake the proposed simulation modeling, an extensive inventory and data collection effort is necessary to assemble information relative to the physical characteristics of FLL’s terminal facilities, as well as information on operational patterns and processing rates for the various key components of the terminals. These various key components, which will be the areas of study for the simulation modeling include the following:

- Check-in
- Security screening checkpoints (SSCP) and TSA offices/spaces
- Outbound baggage check
- Holdrooms/gates
- Inbound baggage processing/Bag claim
• Federal Inspection Services (FIS) Assumptions
• Concessions spaces and support/storage
• Airline operations and support spaces
• Terminal/airport maintenance and storage spaces

The work effort for this task comprises the inventory and data collection activities needed to create a terminal simulation model for FLL. However, this inventory task does not include the development of the terminal simulation model nor the subsequent capacity analysis described above.

The R&A Team will collect data on the FLL facilities/resources, passenger characteristics and processing times. Static data will be collected from BCAD (flight schedules, CAD files), airline manager surveys (airline policies), existing passenger surveys completed in 2014, and through limited (up to 16 hours) of on-site observations (numbers of counters, SSCP lanes, etc.). The data items to be collected include:

Static data:
• Number of processors/resources at each area of interest
• Airline and BCAD policies on spare gates, buffer times between flights at each gate
• Schedule characteristics prepared by R&A: load factor, origination percentage per flight
• Flight schedules for each terminal
• AutoCAD files of terminal areas to be simulated

Passenger characteristics:
• Arrival curves
• Passenger group size
• First point of contact (i.e., check-in location including remote check-in)
• Number of checked bags/passenger

Processing times:
• Check-in times by location (curbside, kiosk, bag drop, agent)
• Security screening throughput (standard versus pre-check)
• FIS Primary (passport control)
• FIS Exit Control
• First and last bag delivery times to bag claim (domestic and international)
• Recheck (including % of passengers requiring agent)
Terminal observations and interviews with BCAD staff, TSA, CBP, as well as select major tenants will also be conducted to obtain additional insight regarding the terminal facilities and their use. Understanding cruise ship passenger processing, and international passenger processing procedures will be a specific focus on the inventory. It is understood that BCAD is in the process of collecting some of this data. R&A will review the material provided by BCAD and determine the extent to which additional data needs to be collected to support FLL’s Master Plan Update.

R&A will also work with BCAD to develop Level of Service (LOS) standards and metrics to compare against the performance of the terminal facilities. While IATA provides some LOS guidelines, R&A suggests a combination of IATA, publications prepared through the Airport Cooperative Research Program (ACRP), and those we have developed through our experience with capacity studies at other major airports. LOS metrics may be based on time (e.g., amount of delay experienced by passengers while waiting for processing) or space (e.g., square footage per passenger in specific areas while waiting or being processed).

I.4C Landside Facilities

Existing conditions of the landside system will be required for the Master Plan Update, inclusive of: public and employee parking facilities, terminal area roadways, access points, and intersections, terminal curbsfronts, rental car facilities, and other ground transportation services operating at FLL. A planning or transportation consulting planning firm will be conducting a separate landside analysis (termed herein as the LANDSIDE STUDY) for BCAD. In order to conserve BCAD resources and avoid duplication of efforts, R&A will work closely with the chosen firm to identify all of pertinent landside information that needs to be collected for the Master Plan Update and as such no additional terminal roadway/curbsfront inventory is anticipated as a part of this task. The LANDSIDE STUDY will include the collection of terminal landside traffic counts and prepare the inventory of existing landside conditions. It is also assumed that the LANDSIDE STUDY will provide information relative to the terminal curbsfronts and terminal access roadway system, specifically including the following:

Access and Terminal Area Roadway Inventory: field investigations and physical characteristics of access systems between the roadways leading to the Airport and the airport terminals and adjacent passenger/landside facilities. The LANDSIDE STUDY inventory is anticipated to include:

- Review and analyses of prior traffic studies
- Graphic depiction and general description of the on-airport roadways within the terminal core
- On site visits and discussions with BCAD staff to understand the existing roadway system and data collection strategy/plan
- Tables and graphs indicating the existing traffic volumes, mode splits and number of lanes for all terminal core roadways

Terminal Curb Inventory: field investigations and inventory of the existing terminal curbs conditions, characteristics, and operating parameters including dwell time and mode-split information. The LANDSIDE STUDY inventory is anticipated to include:

- Review and analyses of prior terminal curb studies
• Summary table listing the number of lanes at the terminal curbs (drop-off and by-pass lanes)
• Summary table listing the various mode types utilizing terminal curbs
• Length of curb allocated to various mode types
• Operational environment on the terminal curbs and any management plans

R&A will collaborate with LANDSIDE STUDY consulting firm during the data collection and inventory process to ensure compatibility with the Master Plan Update and will adopt the existing landside conditions inventory from the LANDSIDE STUDY as the Master Plan Update's Landside Conditions Inventory. R&A’s scope for this inventory task does not anticipate any additional or supplemental landside data collection efforts will be necessary other than what will be provided by the LANDSIDE STUDY.

For existing transit ridership information, the R&A Team will coordinate and obtain data from Broward County Transit, SFRTA/Tri-Rail, and Downtown Fort Lauderdale MTA for:
• Bus ridership to/from the Airport
• Bus ridership between the Airport and Tri-Rail (Dania Beach Station)
• SunTrolley ridership to/from the Airport

1.4D Public and Employee Parking Facilities
R&A will perform field investigations and meet with BCAD staff and parking operators/stakeholders to document a general understanding of the parking operation, including specific uses and capacities for each parking facility. The parking inventory will be limited to the on-airport locations. The inventory will comprise the following:
• Review and analyses of prior parking studies
• List of existing BCAD operated public and employee parking facilities, including:
  o Location map
  o Summary table of existing capacities (spaces)
  o Layout of existing access drives and exit lanes
  o Existing activity - based on information provided by BCAD or others
  o Summary of shuttle operations
• Off-airport/private operations will be included in the inventory as appropriate and if information is readily available
• Ratio of parking by type to enplanements, staff or other relevant metrics

Other operational information to be collected for the public and employee parking facilities will include:

Public Parking Information
• Public parking transactions and revenue by duration category (e.g., 0 to 30 minutes, 30 minutes to 1 hour, 1 to 2 hour, etc.) by parking facility for the peak month 2010.
Daily peak and daily overnight inventory by parking facility for the most recent 365 day period.

Monthly parking transactions and revenue for the most recent 3-year period.

List of off-airport parking operators, approximate number of spaces by location, and approximate occupancy during the peak month.

Employee Parking Information

Overnight and peak employee vehicle accumulation during a typical busy day by parking location

Volume of employee entry and exit vehicles by location during a typical busy day (the same day as the overnight and peak accumulation counts); entry and exit volumes provided in 15-minute increments is preferred.

Number of total airport employees by shift and classification

Number of parking permits issued and fees paid

I.4F Rental Car Facilities

R&A will utilize the 2015 Rental Car Center Operations and Capacity Study completed by Leigh Fisher in January 2015 to develop a summary of existing rental car facilities. The summary will include, to the extent available within the 2015 Study referenced above, a general description of the operational characteristics for the following areas:

- Counter space
- Ready line and vehicle return areas
- On-site overflow/storage capacity
- Access drives and exit booths
- Car wash, fuel and vacuuming facilities
- On-airport vehicle maintenance facilities
- Vehicle access to/from rental car areas
- Rental car busing operations
- Off-site facilities

I.4F Traffic Counts Data Collection for Non-Terminal Roadways

Every effort will be made to utilize available recent traffic count information provided by BCAD or others, including data from recent intercept passenger surveys or FDOT Transportation Statistics Office. This task would obtain the data needed for the analysis of the non-terminal area roadway system. R&A would prepare a detailed list of data needs, identify the schedule and location for all automatic traffic recorder (ATR) counts, and coordinate with the data collection consultant (RJ Behar & Company) to obtain data. It is anticipated that key data would include the following:

- Roadway traffic volume counts collected via automatic traffic recorder (ATR) or passive magnetic sensors. For budgeting purposes it is assumed that 3 ATR counters would be placed for a seven day period to evaluate peaking patterns over the course of a week to establish the peak day and peak period for data collection purposes.
Upon establishment of the data collection period, the ATR counters would be placed at up to 12 locations to collect bi-directional traffic volumes in 15-minute increments for a 24-hour period.

ATR machines configured to classify number of axles per vehicle would be conducted at up to 6 of the ATR locations.

Intersection turning movement counts would be collected at 8 locations during two peak hour periods determined from initial 7-day count. The intersection counts would include classification of heavy vehicles.

Intersection geometry, traffic signal phasing and timing data for each of the study area intersections.

List of on-airport tenants (e.g., cargo, FAA, other) within the study area. For each tenant, obtain number of employees (total and by shift), number of parking spaces on each site, and parking passes issued.

Existing and proposed roadway layout plans for the study area in AutoCAD format.

To determine the utilization of external service roadways to off-site facilities, traffic count information will be supplemented by analysis and extrapolation of other existing data sets, where available, from on-site airport transportation services. Such data sources are anticipated to include:

- Shuttle services
- Taxi services
- Bus service

**I.4G Regional (Off-Airport) Transportation Systems**

The R&A Team will develop an inventory of existing conditions for regional (off-airport) and transportation systems and initiatives through the use of existing data from readily available data sources. The regional (off-airport) roadway system will be bounded by SR 7/US 441 to the west, US 1 to the east, Stirling Road (SR 848) to the south, and Davie Boulevard (SR 736) to the north, and will consist of the following roadways:

- Davie Boulevard (SR 736) between SR 7 and US 1
- SR 84 between SR 7 and US 1
- I-595 between SR 7 and US 1
- Griffin Road (SR 818) between SR 7 and US 1
- Stirling Road (SR 848) between SR 7 and US 1
- SR 7 between Davie Boulevard (SR 736) and Stirling Road (SR 848)
- I-95 between Davie Boulevard (SR 736) and Stirling Road (SR 848)
- US 1 between Davie Boulevard (SR 736) and Stirling Road (SR 848)

For the aforementioned roadways existing conditions data will be coordinated and obtained from the FDOT and Broward County at where available from previously collected turning movement counts and...
machine counts. No new traffic counts, turning movement counts, or observations will be conducted for the regional transportation system.

The R&A Team will also review the following regional roadway studies for input to the Master Plan:

- FDOT District 4 Exit Ramp Assessment, Fort Lauderdale-Hollywood International Airport, August 2014
- Ongoing FDOT District 4 US 1 and Griffin Road Intersection Study, task initiated May 2015, expected to be completed in December 2015.
- Broward County Intermodal Center and People Mover System Fort Lauderdale-Hollywood International Airport and Port Everglades, Preliminary Engineering Report Draft, June 2009
- Ongoing FDOT I-95 Interchange Master Plan Study
- Ongoing FDOT I-95 Express Lanes Phase 2 project
- Corridor Traffic Analysis Report for I-95 Express Phase 3C
- FDOT System Planning Office I-95/I-595 Interchange Modification report

BCAD will also need to plan for, and be able to provide potential interface with, future regional transportation initiatives currently being considered. Although airport connections to these potential regional improvements do not currently exist, planning for these projects is currently underway. These planning efforts may provide information useful to the Master Plan Update for location assessment and ridership estimates. Accordingly, the R&A Team will coordinate in up to ten meetings related to the following projects and responsible agencies to assess relief to traffic congestion, impacts to on-site transportation access, and timing for implementation. These projects will include:

- The WAVE Streetcar System – Downtown Development Authority of Fort Lauderdale/SFRTA
- All Aboard Florida Intercity Rail Service – AAF/FECR
- The Tri-Rail Coastal Link Commuter Rail Service (interim and future service) – FDOT/SFRTA
- Airport/Seaport Automated People Mover – Broward County
- State Transportation Improvement Program (STIP) – FDOT District 4 Adopted Five Year Work Program
- Broward Metropolitan Planning Organization’s (MPO) Transportation Improvement Program (TIP)
- Commitment 2040 – Broward MPO Long Range Transportation Plan
- SR7 Multimodal Improvements Corridor Study – Broward MPO
- FLL Connectivity with Freeway Management System – FDOT Freeway Management Office

1.4H Airline and Airport Support Facilities

Existing reports and other available information will be utilized to inventory the existing airline and airport support facilities, along with on-site/field inspections and discussions with the individual tenants. The R&A Team will document existing support facility information concerning:
Site visits to each of the primary facilities will be arranged to conduct this inventory. It is anticipated that one site visit (3 hours in duration) per support facility may be needed to interview stakeholders, gather additional information, and/or validate facility information. Direct coordination and discussions with tenants concerning data collection will be at the discretion of BCAD.

Existing ancillary facilities will be inventoried, including the following:

- Airport maintenance and equipment storage
- Airport administration and management
- Aircraft rescue and fire fighting
- Flight kitchens
- Aircraft maintenance
- Aircraft fueling and fuel storage
- FAA facilities
- Ground service equipment storage and maintenance
- Airport security and police
- Other tenants and facilities (such as Naval Air Museum, Boat Clubs, other government facilities)

1.41 Fixed Base Operator (FBO) and General Aviation Facilities

Existing reports and other available information will be utilized to inventory the existing FBO and general aviation facilities, along with on-site/field inspections and discussions with the individual tenants. The R&A Team will document existing support facility information concerning:

- Facility size and use
- Site conditions
- Airside and landside access
- General building condition
• Facility utilization, ramp utilization, and capacity estimates based on BCAD and/or GA tenant input
• Planned improvements
• Applicable Design guidelines (if any)

Site visits to the FBO’s and GA facilities will be arranged to conduct this inventory. It is anticipated that up to two (2) site visits (3 hours in duration each) to GA facilities may be needed to interview stakeholders, gather additional information, and/or validate facility information. Direct coordination and discussions with GA tenants concerning data collection will be at the discretion of BCAD. Existing FBO and General Aviation facilities will be inventoried, including the following:

• Sheltair facility
• Other FBO facilities such as Jetscape, National Jets, and Signature
• Aircraft Leasing- Jetscape
• General Aviation hangars and ramp areas
• GA fuel facilities
• GA user vehicle parking areas
• GA facility landside and airside access
• Other GA supporting facilities (tenant storage, maintenance, etc.)
• Other tenants such as Gulfstream and Embraer

1.4J Cargo Facilities
Existing reports and other available information will be utilized to inventory the existing cargo facilities, along with on-site/field inspections and, if necessary, discussions with the individual tenants. The R&A Team will document the existing facilities, their size, use, site conditions, access, general building condition, and any existing operating conditions that need to be considered from a capacity in the Master Plan Update. Existing air cargo facilities and infrastructure, predominantly located on the north side of the airfield, will be inventoried, including:

• Cargo processing facilities
  o Belly cargo buildings with ramp access
  o Cargo buildings with adjacent aircraft parking
  o Freight forwarder facilities
• Cargo ramp areas and aeronautical access
• Landside trucking and automobile requirements
  o Truck docks
  o Truck maneuvering and queuing
  o Customer parking
  o Tenant parking
Other air cargo support facilities
  - Specialized cargo support
  - Government office facilities

I.4K Airport Utilities
The objective of this task is to inventory and understand, at a high level, the sizes, locations, capacity, usage and other relevant information on existing utilities that provide service to FLL. Only the main trunk or transmission lines will be inventoried. The utilities that will be included in this investigation are:
  - Domestic water
  - Sanitary sewer
  - Storm drainage
  - Natural gas
  - Fuel
  - Telephone
  - Communications network
  - Electric power

The location and sizes will be based off the most current utility atlas. No survey or SUE work is proposed for FLL under this scope.

BCAD has recently completed Master Plans for FLL’s Domestic Water and Sanitary Sewer. This information will be reviewed with BCAD and added into the inventory report. Additionally recent drainage studies will be reviewed and relevant data will be added to the inventory report.

No utility testing or capacity modeling is included for FLL under this scope.

All information will be gathered through BCAD to ensure the R&A Team is working with the latest versions of known existing utility systems. The R&A Team will confirm with BCAD Operations and Maintenance to ensure that all data collected is to the best of their knowledge.

The R&A Team will prepare a narrative detailing the existing conditions and findings for each utility. In addition, each utility will have a detailed map showing its locations and sizes.

I.4L Airport Security Overview
The collection and review of relevant information to be provided by BCAD regarding security systems and issues in the terminal complex, airfield, and airport operations area, and FLL airport perimeter will be completed by R&A. The purpose of gathering this information is to determine how FLL’s security framework and systems compare to best practices at the nation’s airports and FAA requirements, so that improvements can be accounted for in the capital improvement plan resulting from this Master Plan Update.
It should be noted that some of the materials to be reviewed are considered sensitive in content, and as such, cannot be presented or documented in detail.
I.4M On-Airport and Off-Airport Land Uses
R&A will collect and examine the existing land uses within the FLL environs. Land use data will be obtained from the following municipalities: Fort Lauderdale, Hollywood, Dania, Davie, Plantation, and Cooper City. This data will be used as the basis for land designations. In addition, existing land uses will be verified through aerial photographs, field investigations, and research of previous environmental documents. Data from the Broward County Property Appraiser’s Office and the Broward County Metropolitan Planning Organization will be utilized. Utilizing the information collected, a graphic description of the existing land uses will be generated.

I.4N Environmental Conditions
R&A will assemble existing documentation of environmental resources at FLL and the surrounding environment, and provide an initial assessment of their influence on airport development. The environmental conditions inventory of the airport environs will include data collection and field investigations necessary to identify current environmental features on and directly adjacent to FLL. Features that will be identified include water resources (e.g., streams, wetlands, floodplains, and coastal zones), historic or cultural resources, natural communities and vegetative associations, threatened and endangered species, and other features or groups of features that may influence the development and operation of airport improvement projects. In addition, an inventory of the existing air quality will be prepared. To the extent possible, available data from previous studies, and information easily accessible from agencies and other public sources will be relied upon as the basis for this effort. Incorporation of the existing noise contours will be documented from the Part 150 study, the south runway EIS, or other existing noise contour data. Data sets compiled during the environmental conditions inventory will be prepared in a format consistent with the GIS standards established by BCAD.

I.4O Sustainability Programs and Policies
In 2010, the FAA issued preliminary guidance on airport sustainability planning. The preliminary guidance outlined a pilot program to help the FAA define sustainability principles for airports and develop guidance to help airports achieve aviation standards while reducing environmental impacts. The pilot program defined two options for sustainability plans: a sustainable master plan for airports about to prepare or update a master plan in which sustainability is addressed as a new chapter within the master plan, or a sustainable management plan, which is a stand-alone document for those airports not updating a master plan. The preliminary guidance defines the following items as required contents of a sustainable master plan or sustainable management plan:

- Written sustainability policy or mission statement
- Sustainability categories for the airport
- Baseline inventory or assessment for each sustainability category
- Measureable goals for each sustainability category that minimize the impact or consumption
- Sustainability initiatives to help the airport achieve each sustainability goal
- Public participation and community outreach, tailored to the needs of the airport and the community
A variety of initiatives are currently being implemented at FLL to operate the Airport in an environmentally sensitive manner. BCAD’s environmental initiatives include the consolidated rental car center, the pay on foot program for the parking garage, the cell phone waiting area, the bus and taxi holding area, implementation of biodiesel and hybrid vehicles, increased cooling and heating efficiency, storm water pollution prevention, recycling and waste reduction, LEED standard construction, the use of energy efficient lighting, water conservation and irrigation efficiency, hazardous materials waste management, and the construction of the Green Belt Passive Park. This scope of work is not structured to meet the FAA guidance for Sustainability summarized above, but has been structured to address the Airport’s sustainability initiatives at level of detail appropriate for master planning analyses. Data and information from the Guidance Manual for Sustainable Operations & Green Practices and the Green Airport Initiative will be used to document FLL’s current sustainability programs and policies.

I.4P Existing Conditions Inventory Chapter
An Existing Conditions Inventory Chapter will be prepared to summarize the conditions of the existing FLL airport facilities and operating environment. A preliminary draft version of the Existing Conditions Chapter will be submitted to BCAD for review and comment. The review and comment process for the Existing Conditions Inventory Chapter will incorporate two revision rounds; (1) preliminary draft for BCAD review and comment, and (2) final draft for BCAD review and comment. The second round of comments/revisions will be incorporated into the draft chapter and then remain until final comments are solicited at submission of the draft Master Plan Update Report.

Assumptions and General Comments:
An independent LANDSIDE ANALYSIS will collect inventory information, including traffic counts and curbfront observations, for the terminal roadways and curbfronts. No new inventory data collection is included for the terminal roadways and curbfronts.

Items of Work Not Included in Scope:
On-site/field verifications of all data provided for use in this Master Plan Update, unless otherwise noted in this task’s scope of work.
Traffic counts or observations, unless otherwise noted in this task’s scope of work

Supporting Sub-Consultant

Data & Resources Required From BCAD or Other Parties
2015 Rental Car Center Operations and Capacity Study (by Leigh Fisher)
Terminal Studies for Terminals 1, 2, 3 and 4 (including refinement of terminal master plans)
Recent/Relevant Roadway Studies (as determined by BCAD)
Parking Studies for the Existing Public Parking Garages
Airport Layout Plan (ALP) as amended
Airport People Mover (APM) Study
NEPA for 2015 projects
Port Everglades Origin & Destination Study
Passenger Surveys (2009, 2010 and 2014)
FLL Master Plan (2010)
Deliverables

- Draft and Final versions of the Inventory of Conditions Chapter in Microsoft Word and PDF format for BCAD review and comment
- Electronic deliverables prepared as part of this task including PowerPoint presentations, AutoCAD and GIS files
Overview and Scope of Services

The key objective of the aviation activity forecast task is to estimate/project the future aviation demand that will provide the basis for all further analysis, including the identification of future facility requirements and to establish a timeline for future airport needs and improvements. These forecasts will be prepared on a fiscal year (FY) basis, coinciding with the timeline definition for Broward County’s fiscal year (October 1 thru September 30). The key benchmark FY for the forecast will be 2020 (near-term), 2025 (mid-term), and 2035 (long-term). The year 2015 (i.e. FY 2015) will be used as the base year and annual forecasts will be developed for FY 2016 through FY 2035.

R&A will develop a forecast of future aviation activity levels for passengers, cargo tonnage, aircraft operations and based aircraft for the Airport. The forecast will be developed based on historical activity levels and regional socioeconomic factors, among other information sources (e.g. fuel costs, airline yield, etc.). The resulting forecasts will be compared to the FAA’s most current Terminal Area Forecast (TAF) for FLL. Any discrepancies will be resolved with the ADO and Office of Aviation Policy and Plans as necessary to ensure the FAA’s approval of the forecast for planning purposes and further support of financial funding through PFC’s, federal and state grants.

A more detailed description and summary of the various subtasks included in the formulation of the FLL Master Plan Update forecasts are provided below.

1.5A Historical Activity Data Collection

Data on historical passenger, cargo and aircraft operations activity at FLL will be assembled from existing sources, reviewed and organized for the period commencing in 2005 and ending in 2015 (in fiscal years). Information concerning the level of activity by the air carriers and air taxis including enplanements and operations, cargo tonnage volumes and operations, and the limited general aviation operations by local and itinerant categories, military operations, and based aircraft by aircraft type will be sought. Additionally, depending upon the depth of available airport activity reports, data relative to commercial passenger and cargo fleet mix by carrier will be defined or derived from Innovata schedule data and other sources of information including company reports. Data will be obtained from BCAD records, the Airport’s noise tracking system (if available), Innovata schedule data, and U.S. Department of Transportation (DOT) databases. Existing records of commercial service aviation activity (segregated into domestic versus international) including historic monthly

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1 The FAA Office of Aviation Policy and Plans (APO) is the organization tasked with conducting forecast reviews if the ADO requests the review.
landing fee reports will be sought and, where available, compiled based on the following activity segments:

- Annual enplanements (total annual, domestic versus international, and by airline)
- Annual connecting enplanements (as provided in the U.S. DOT Origin and Destination database)
- Annual airline aircraft operations (total annual, and by airline)
- Annual air carrier operations by category of aircraft
- Historical air cargo – enplaned and deplaned by carrier
- Historical general aviation aircraft operations
- Overnight parked aircraft by carrier and historic change in demand
- Based Aircraft (i.e., general aviation) Peak month enplanements (total and by airline)
- Peak month operations (total and by airline)
- Socioeconomic and demographic data (population, income, employment) – historical and projected

Sources such as FAA Airline Service Quality Performance (ASQP), Aviation System Performance Metrics (ASPM), Operational Network (OPSNET), and Traffic Flow Management System Counts (TFMSC) databases will be queried to get current distributions of actual aircraft activity and delays. Schedule data for a representative sample of the last 12 months and a schedule representative of peak month in 2015 will be downloaded from Innovata.

1.5B Collect and Review Existing Air Service Studies and Current Marketing Initiatives
R&A will review and evaluate potential changes in air service as defined in analyses conducted in existing air service studies, as well as through existing marketing initiatives undertaken by BCAD designed to either capture additional service or gain new service by existing carriers to existing or new markets. It is understood that confidentiality will be a key consideration relative to marketing efforts. However this effort is important relative to the definition of potential market changes for consideration in the definition of potential future market projections. A working session will be conducted with BCAD staff to review and address the aforementioned considerations.

1.5C Prepare Baseline Forecasts
R&A will prepare a 20-year Baseline Forecast reflecting the historical, current, and anticipated Airport and industry trends. Methodologies that will be considered and employed as appropriate will include, but not necessarily be limited to, trend analyses, single- and multi-variable (using socioeconomic, fuel and yield statistics) regression analyses, and market share assessments, coupled with the consideration of broader economic and aviation industry conditions, as well as other non-aviation factors that may influence demand growth for FLL and the aviation industry as a whole. The Baseline Forecast will include annual projections of:

- Passenger Enplanements (air carrier, commuter, international, domestic, and a breakdown of Origin/Destination (O&D) vs. connecting)
- Aircraft Operations (air carrier, commuter, cargo, international, domestic, general aviation, military)
- Local and itinerant aircraft operations (general aviation and military)
- Cargo tonnage (freight, express, belly cargo)
- Fleet mix projections
- Based Aircraft (jet, single-engine, multi-engine, helicopter, and other)

The Baseline Forecasts will consider the 2015 financial feasibility forecasts being prepared by R&A under a separate work authorization through the Airport Planning Consultant Services Agreement. A maximum of 2 person-trips is assumed by out of town staff to coordinate client and FAA review.

1.5D Market Assessment and Factors Affecting Demand
R&A will prepare an overview and discussion of trends and changes occurring at the local, regional, or national level that have the potential to influence the activity levels, service patterns, or type of aviation activity likely to occur in the forecast horizon at FLL. This information will be used as one input into the development of the various projections that form the basis for the forecasts. This work will supplement the effort conducted during the Visioning Task, as it relates to industry trends and demand drivers.

A key element in addressing future activity levels at the Airport will be the identification of how changes from escalating fuel prices, recently enacted open skies agreements, potential for airline consolidations/mergers, ongoing implementation of revised airline business plans, and changes in service patterns may influence future activity at FLL. This analysis will review the potential influence that expanded competition in the low fare carrier market might have in opening new service opportunities. It will also discuss and address fleet mix changes (e.g. larger regional jets prevailing in the market – 75+ seating capacities; phase out of the B757; emerging fleets like the B787 among others, etc.) could affect flight frequencies and airline operating patterns.

In addition, an assessment will be performed to develop an understanding of the various components of FLL’s air traffic market and the factors that currently influence, or may, in the future, influence this traffic. Specifically, the following aspects will be assessed:

- International Traffic – International traffic will be assessed to understand the local O&D traffic demand to the various international regions as well as the potential domestic to international connecting market logically served through the Airport. It is anticipated that recent air study efforts undertaken by BCAD will provide additional insight into this area.
- OD/Connect – the O&D/Connecting percentages will assessed to understand the relationship intra- and inter-carrier connecting traffic and to vary the O&D versus Connecting traffic splits (this will help with sensitivity analysis as part of the facility requirements and alternatives analyses to be conducted in a subsequent phase).
- External Factors – Other factors, such as recent trends in carrier fleets/orders, evolution of service in nearby competing airports, and airline industry consolidation will be analyzed to determine potential impacts to activity at FLL.
- Cargo – Trends in cargo activity and future growth in cargo flow through FLL will be assessed.

These scenarios will represent the potential changes in activity at FLL under certain assumptions on market competition, or as a result of external factors. This information will be used to provide the basis for the Alternative Demand Scenarios.
I.5E  Formulation of Alternate Demand Scenarios
Utilizing the Market Assessment information, and the information collected or prepared as part of the subtasks described above will be defined in detail for the base year of 2015 and each of the forecast years (FY 2020, 2025, and 2035).

The characteristics of each alternate growth scenario identified will be further analyzed using the market assessment information to provide the basic assumptions for each alternate demand scenario. Up to four (4) alternative passenger activity demand scenarios and one alternate aircraft operations forecast scenario will be developed. These alternate forecasts will include the following detail (as appropriate):

- Enplanements (domestic, international)
- O&D/Connecting split
- Airline operations
- Aircraft fleet mix by aviation segment

I.5F  Aircraft Fleet Mix Projections and Identification of the Airport’s Critical Aircraft
R&A will review historical fleet mix and flight data as well as research airline fleet orders and aircraft manufacturer’s projections. The projections of aircraft fleet mix will initially focus on seating ranges of aircraft likely to serve FLL. The projections will then be further refined to identify specific aircraft types (i.e. representative aircraft for each seating range category) considering existing airline fleets and the announced orders for new aircraft. Fleet mix will be developed for the base year (2015) and FY 2020, 2025, and 2035 forecast horizons.

Additionally, R&A will determine the largest aircraft with a minimum level of scheduled service that will be accommodated at the Airport in order to assure that the airfield is sufficiently sized and configured to safely and efficiently handle consistent operations from this critical aircraft.

I.5G  Derivative Forecasts
R&A will prepare detailed projections of the Airport’s overall forecast demand by annual, peak month, peak month average day (PMAD), and peak hour for each major segment of activity as follows:

- Passengers (inbound, outbound and total)
- Operations (Commercial Passenger, Cargo, General Aviation and Total)

Peak month and PMAD may differ among specific segments of activity when compared to the Airport’s overall peaks. If applicable and in addition to the Airport’s overall peak data, peak month and PMAD or peak month average week day (PMAD) activity will be identified as follows:

- Passengers (domestic and international)
- Commercial passenger operations (domestic and international)
- Other operations (Cargo and General Aviation)

The detailed time based projections will be defined and presented for each component segment for use in facility planning at various peak period levels.
These derivative forecasts will be used to assist in the development of future design day schedules, and will be prepared for the Base Year, 2020, 2025, and 2035.

1.5H Future Design Day Airline Activity Schedules
Using the annual passenger and aircraft operations forecasts as well as the Peak Month Average Day (PMAD) and/or Peak Month Average Week Day (PMAWD) derivative forecasts, airline flight schedules and projected hourly distribution profiles for the 5, 10 and 20-year planning horizons (i.e. FY 2020, 2025 and 2035) associated with Baseline Forecasts will be developed. Up to two additional design day schedules (associated with one of the planning horizon years, not all three horizons) for one or more of the Alternate Demand Scenarios will also be developed. A Base Year (FY 2015) schedule will also be prepared. These flight schedules will be prepared based on the existing (base year) flight schedule, modified to reflect the projected future fleet mix, markets served, and expected future peaking characteristics.

These schedules will be used for the airfield capacity analysis, and to derive terminal space and aircraft gate requirements. They may also be subsequently used for more detailed terminal programming analyses. Information related to aircraft fleet and associated seating by aircraft type, by airline, by scheduled arrival and departure time, and gate assignment will be generated. From this information gate availability and utilization can be defined, the need for remote hardstand estimated, and passenger loadings and demand on selected components of the terminal considered.

1.5I Aviation Activity Forecasts Chapter
R&A will provide a compilation of the Aviation Activity Forecasts (excluding the design day schedules which would be provided separately electronically as MS Excel files) in a report form for BCAD and other interested entities to review the analysis methodology and results of the forecast analysis performed for FLL. The report containing the Aviation Activity Forecasts will summarize the assumptions, methodology and results of the forecast, and will include tables, graphics and sources used. In addition, the Baseline forecast will be compared to the latest TAF for the Airport.

A preliminary draft version of the Aviation Activity Forecasts Chapter will be submitted to BCAD, FDOT, and FAA for review and comment. The BCAD, FDOT, and FAA review and comment process for the Aviation Activity Forecasts Chapter will incorporate two revision rounds; (1) preliminary draft for BCAD review and comment, and (2) final draft for FAA and FDOT review and comment.

1.5J Responses to FAA Comments and Coordination with FAA
The purpose of this task is to better ensure acceptance of the updated forecast traffic levels by the FAA and continuing support by the FAA on future financial funding required to support capital improvements at FLL. Following the completion of the Baseline Forecasts, R&A will work with the FAA’s ADO and APO if requested, and present preliminary forecast documentation including approach and methodology with the draft forecast traffic levels compared to the latest TAF for review.

R&A will provide written responses in the form of revised sections of the forecast documentation and a summary letter presenting the R&A’s actions to resolve questions and comments from the Airport and the FAA. It is anticipated that any clarification of comments from the FAA will be addressed via conference call.
Assumptions and General Comments:

- R&A would serve as the point of contact for communications among BCAD and members of the R&A Team unless otherwise agreed upon on a task by task basis for purposes of facilitating study performance efficiency and communications.

Items of Work Not Included in Scope:
Supplemental air service or market analysis beyond those presently available.

Supporting Sub-Consultant
None

Data & Resources Required From BCAD or Other Parties
Airport Activity Statistics to potentially include landing fee reports from 1995 through 2015. Existing air service analyses or studies. Existing Gate Schedules for the Base Year (FY 2015) peak month average day design day schedule. Existing gate/remote stand aircraft capabilities and airline assignments.

Deliverables

- PowerPoint presentation summarizing forecast assumptions and results; along with forecast tables (in MS Excel format) providing detailed analysis and assumptions.
- Draft Forecast of Aviation Activity Forecast Chapter in Microsoft Word and PDF format for BCAD review and comment.
- Final Draft Forecast of Aviation Activity Forecast Chapter in Microsoft Word and PDF format for BCAD and FAA review and comment.
- Final FAA-approved forecasts will be submitted to FDOT Central Office.
- Electronic deliverables of design day schedules and other analyses prepared as part of this task.
Overview and Scope of Services
The R&A Team will undertake macro-level, and parcel specific analyses of development opportunities for commercial, industrial, retail, convention center/entertainment and aviation related uses at FLL. These analyses will be based on property characteristics and assessments of specific Broward County area market characteristics and factors.

The following activities will be performed:

- Analysis of market demographics and economic characteristics that drive development, including market size and growth trends (population and jobs) and size and growth of business and industry sectors that drive demand for office and industrial space.
- Analysis of development patterns and trends occurring in the Broward County area, near FLL, including types, amounts, and location of retail, service, office, and industrial activity occurring in the area.
- Assessment of potential long-range commercial/industrial market demand for these activities in the Broward County area near FLL.
- Identification and assessment of the existing and planned competitive supply of commercial/industrial lands in the Broward County area, near FLL, in terms of site, location, and access characteristics and general pricing.
- Assessment of the share of the commercial/industrial market activity that can reasonably be expected to be attracted to FLL over the short, mid, and long-term horizons based on the competitive advantages or attributes of FLL.
- Assessment and recommendation of the types and timing of commercial/industrial development for potential available BCAD property, based on consideration of level of market demand and support for these uses, the desirability and marketability of specific parcels, and revenue potentials as may be generated by specific uses, ensuring that uses represent “highest and best uses” for each parcel. This will include parcels presently owned by BCAD and other parcels that BCAD may wish to acquire in the future.

Additionally, the R&A Team will convene focus group meetings to gain individual and collective input from brokers active in the area including:

- National firms (such as JLL, CBRE, Cushman & Wakefield, Colliers, Avison Young);
- Regional firms (such as NAI, Sperry Van Ness, Stiles); and
- Local firms representing developments around FLL.
The R&A Team will meet with other Departments of Broward County and regional agencies involved in ownership, acquisition and disposition of properties associated with, and with linkages to, FLL:

- Port Everglades Department
- Broward Real Property
- Broward County Transit
- FDOT District IV
- City of Ft Lauderdale “WAVE” trolley system

The results of this task will be prepared and submitted as a PowerPoint presentation and will present details of the market assessment of commercial, industrial, and aviation-related uses and representing the highest and best use for available BCAD property. As a basis for this market assessment, the R&A Team will participate in the key stakeholder interviews and analyses as described above to gain information and insights into plans and motivations of developers, adjacent property owners, and local planning and development officials.

Assumptions and General Comments:

- A key objective is to provide a high level vision and strategy for the development of non-aviation parcels at FLL that are feasible, sustainable, and realistic based on local market conditions

Items of Work Not Included in Scope:

Individual parcel appraisals or valuations.

Supporting Sub-Consultant

Florida Transatlantic Holdings, LLC; Craven Thompson & Associates, Inc.

Data & Resources Required From BCAD or Other Parties

- Airport Land Use Plan
- Existing parcel appraisals.
- Existing leases for non-aviation tenants at FLL.

Deliverables

- Technical Memorandum and Executive Summary PowerPoint presentation summarizing the results of the Market Assessment task.
- Meeting Minutes/Working Paper summarizing the results and input provided during the focus group meeting
Overview and Scope of Services

The Advisory Circulars (AC’s) identified below detail the data collection requirements and accuracies for the AGIS update and the verification process by the Federal Aviation Administration (FAA) and the National Geodetic Survey (NGS).

- AC 150/5300-16A “General Guidance and Specifications for Aeronautical Surveys: Establishment of Geodetic Control and Submission to the National Geodetic Survey.”
- AC 150/5300-17C “Standards for Using Remote Sensing Technologies in Airport Surveys”

The purpose of this task is to accomplish FAA Airport Airspace Analysis Survey for all surfaces defined in FAA Advisory Circular 150/5300 - 18B: Section 2.7.1.1 Runways with vertical guidance. For this project, the R&A Team will acquire new vertical stereo aerial photography at a nominal scale of 1”=360’ for the airport property (3005 acres) as defined or confirmed by BCAD, and 1”=1,905’ covering the obstruction surface areas. The aerial photography will cover all of the VG Airspace Surfaces and will be obtained using Zeiss Digital Mapping Cameras (DMC) during leaf-on conditions. Area associated with Port Everglades will not be included in this analysis.

From the 1”= 360’ aerial photography, the following will be produced:

- 1”=40’ scale planimetric mapping of the Airport property
- For areas outside of the airport property, only the centerline of roads and habitable buildings (subdivision included in airport property on southside of Airport) will be included
- Color digital orthophotos with a .25 foot pixel resolution
- Contours at 1’ intervals of the airport property and additional defined areas

From the 1”=1,905’ aerial photography, the following will be produced:

- Limited landmark feature planimetric mapping outside of the airport area
- Color digital orthophotos with a 1 foot pixel resolution
- Identification and mapping of obstruction obstacles for all of the VGRPS, VGPCS, VGPS, & VG surfaces

The work delivered under this task will conform to the National Map Accuracy Standards for 1”=40’ scale planimetric feature collection, one foot contour verification, three and twelve inch orthophoto.
production. In addition, the R&A Team will ensure that the photogrammetric mapping meets the applicable FAA and NGS standards. The R&A Team will exercise reasonable care and will conform to the standards of practice ordinarily used by the photogrammetric profession.

The project area encompasses all of FLL, inclusive of all the defined obstruction surfaces. In areas outside of the airport property, only the centerline of roads and habitable buildings will be provided.

The following subtasks will be performed to complete the AGIS work.

**Task 1.7A Control Surveying**
The aerial photography will be acquired with airborne GPS (ABGPS) control which will be used for the base control for the geo-referencing of the aerial imagery. The R&A Team will process the ABGPS data using COR stations and project the final positions to the project control datum:

- **Vertical:** North American Vertical Datum of 1988 (NAVD 88) and ellipsoid heights

The R&A Team will complete all of the remaining on-site ground control surveys including:

- Establish new PACS and SACS stations according to the guidelines established in AC 150/5300-16A
- Obtaining all necessary ground control photo identifiable control check points required to validate the ABGPS control
- Control of all the runway end positions
- Collection of vertical profiles for instrument approach runway ends
- Collection of the position, elevation, and where required the appropriate navigational aid perpendicular point of all electronic and visual navigational aids (NAVAIDS) located on the Airport and associated with any current instrument approach servicing the Airport
- Control for any obstruction obstacles or airport planimetric features that cannot be collected by photogrammetric methods
- Complete map checks for feature attribute data and update the final map file attribution (photogrammetric and NAVAIDs survey) data.

**Task 1.7B Orthophoto Mapping**
The R&A Team will use the control solution and digital imagery to generate a Digital Elevation Model (DEM) for the all of the Airport property and approach surfaces. The digital imagery will be processed into color digital orthophotos using the aforementioned DEM to rectify the images. Orthophotos with a 0.25' pixel resolution will be generated for the Airport property and will be delivered in a GeoTIFF file format. Orthophotos for the entire project area will be developed with a 1.0' pixel resolution and be delivered in a GeoTIFF file format and Mr.SID format via external hard drives.
Task I.7C VGA Obstruction Surveys

For the VGA Obstructions Surfaces the R&A Team will satisfy the following requirements of the AC 150/5300-18B:

- 2.7.1.2 Analysis of Runways with Vertically Guided Operations (Surfaces include the VGRPS, VGPCS, VGAS, VGPS, VGATS, VGHS and VGCS)

The specific types and quantities of obstructions for each surface are outlined and clearly defined for the particular surface in each circular section. Any obstructions that meet the requirement of the circular, but are of a nature that elevations at the highest point of the obstruction are virtually impossible to read through photogrammetric methods (cell tower, electrical tower, etc.), will be identified and field surveyed for elevations of the obstruction.

The obstruction deliveries will include the off-airport landmark planimetric mapping and the airport planimetric mapping and photogrammetric attribution data.

The final data will be delivered in AutoCAD and GIS format, unless otherwise specified by BCAD.

Items of Work Not Included in Scope:
Refer to scope of services above

Supporting Sub-Consultant
Quantum Spatial, Inc.; Arora Engineers, Inc.

Data & Resources Required From BCAD or Other Parties
As specified in Scope of Services above

Deliverables
The R&A Team will work with BCAD to finalize a mutually agreeable schedule for the project after FAA Control Plan approvals and make a reasonable effort to maintain the agreed-upon schedule. It is recommended that the survey take place in early fall, which will capture completion of ongoing airfield and terminal work. This time frame will also avoid adverse weather that often occurs during summer months. However, should the project be interrupted by technical problems beyond the R&A Team’s control, rescheduling may become necessary.

The R&A Team will submit all data collected and associated required deliverable in the formats specified in the appropriate advisory circulars to the FAA Office of Airports, Airports Surveying-GIS Program. All data submissions to the FAA will be through the program’s web site at http://airports-gis.faa.gov.

The AC 150/5300-17C project data deliveries that will not be submitted through the web site will be delivered on external hard drives for review and delivery to NOS and the FAA.

The 18B deliverables that will be uploaded to the AGIS website include:

- Statement of Work, Imagery Plan and Survey and Quality Control Plan
- Image Delivery
- Digital limited landmark detail outside the airport
- Color digital orthophotos with a 1.0' pixel resolution (GeoTIFF format)
- Obstruction survey data (that covers VG surfaces)
- Surveyed centerline profile on VG runways
- NAVAID data
- Planimetric data and one foot contours to 18B specifications (Shapefile format)
- Photogrammetrically derived attributes in defined format
- FGDC compliant metadata
- Final Report

Additional deliverables for use in the FLL Master Plan Update:
- Planimetric data and one foot contours to 18B specs in Civil 3D (or other) format
- Color digital orthophotos with a 1.0' pixel resolution in GeoTIFF (project area)
- Color digital orthophotos with a 0.25' pixel resolution in GeoTIFF (airport property)
- 2 color enlargements (30"x40") covering the airport and surrounding area (mounted/laminated/framed)

All digital files will be delivered on external hard drive.
Overview and Scope of Services

In this task, the R&A Team will implement the approved elements of the Stakeholder Engagement Strategy and Public Outreach Program developed under a separate Phase I task. The effort scoped herein will focus on the public and stakeholder meetings.

Activities related to Program implementation include:

- Schedule and coordinate logistics for stakeholder meetings according to the identified forum and vehicle for each group (i.e. public meetings, workshops, individual meetings, etc.) — for budgeting purposes, it has been assumed that Phase I of the FLL Master Plan Update will include:
  (a) up to two, 3-hour public meetings, with each meeting being attended by R&A’s Officer-in-Charge, R&A’s Project Manager, one technical specialist/subject matter expert from R&A, and up to two non-R&A individuals from the R&A Team;
  (b) up to three (3) Project Advisory Committee and three (3) Technical Advisory Committee meetings (assuming the meetings with both Committees would occur in the same day), with each meeting having a 2-hour duration and anticipated to be attended by R&A’s Officer-in-Charge, R&A’s Project Manager, one technical specialist/subject matter expert from R&A, and up to two non-R&A individuals from the R&A Team; and
  (c) one, 4-hour (half day) workshop meeting being attended by R&A’s Officer-in-Charge, R&A’s Project Manager, one technical specialist/subject matter expert from R&A, and up to two non-R&A individuals from the R&A Team; and
  (d) up to three (3) individual meetings, with each meeting having a 1.5-hour duration and assumed to be attended by R&A’s Officer-in-Charge and R&A’s Project Manager (or alternately, in lieu of the project manager, these meetings could be attended by one technical specialist/subject matter expert from R&A or from another Team member firm, along with R&A’s Officer-in-Charge). However, these assumptions are simply for budgeting purposes, the resulting hours and budget will be compiled within the budget allowance for this task and utilized by BCAD at its discretion, as a time and materials budget. Thus, BCAD may decide to have more or less of any meetings or workshop type described above. They may also choose to not undertake one or more of the meetings or workshop sessions noted above, and/or may decide to not fully exhaust the budget established for this task.

- Develop a stakeholder database or contact list
- Contact stakeholders accordingly to invite them to participate in meetings, forums and other media
- Develop agenda and communication materials and messaging relevant to each stakeholder group in close coordination with BCAD
- Identify, engage and include relevant team members for appropriate participation for each stakeholder meeting and venue
• Conduct stakeholder events and meetings with a focus on interactive dialogue to encourage meaningful input
• Document and record comments, questions and other feedback from each meeting and event
• Summarize findings and key trends from outreach initiative

Assumptions and General Comments:
• The budget established for this task is meant to be flexibly utilized at BCAD’s discretion in order to maximize the value of the Stakeholder Engagement and Public Outreach Program formulated for the FLL Master Plan Update. Thus, BCAD may decide to have more or less of any meetings or workshop type described above. They may also choose to not undertake one or more of the meetings or workshop sessions noted above, and/or may decide to not fully exhaust the budget established for this task.

Items of Work Not Included in Scope:
Transportation, parking or meals for participants of these meetings/workshops. Expenses for advertisement of meetings/workshops

Supporting Sub-Consultant
Dickey Consulting Services, Inc.; other firm participation will vary depending on the subject matter and topics identified for each meeting or workshop

Data & Resources Required From BCAD or Other Parties
List of Stakeholders desired by BCAD for participation in each meeting or workshop.

Deliverables
• Final meeting schedule
• Database/contact list of stakeholders
• Meeting support materials (presentations, handouts, etc.)
• Meeting minutes and related documentation from events
Master Plan Update
Phase II Scope of Services
Overview and Scope of Services
Ricondo & Associates, Inc. (R&A) will serve as the Prime Consultant for Fort Lauderdale-Hollywood International Airport's (FLL’s) Master Plan Update and will assume the lead responsibility for the timely, high quality delivery of the Master Plan Update deliverables as well as the underlying technical analyses in accordance with the contractual requirements specified in the Agreement between R&A and Broward County for this assignment. R&A will oversee and manage the work performed by our various subconsulting team members (collectively referred to as the R&A Team), and provide direction and guidance as necessary to ensure consistency among the team’s study activities and work products.

A more detailed description and summary of the project management and project coordination activities that will be provided by R&A as part of this second phase of the FLL Master Plan Update are provided below.

II.1A R&A Team Coordination Meetings
Monthly in-person or teleconference coordination meetings will be held among the team members to review the status and progress of each task, schedule and budget performance. A maximum of twelve (12) meetings or teleconferences are anticipated in Phase II of the FLL Master Plan Update.

II.1B Study Tasks Initiation Meetings
Task initiation meetings will be held at the commencement of each key study task. These meetings will include representatives from BCAD, R&A (and, if appropriate, other firms from the R&A Team), and other key personnel or stakeholder as required or as suggested by BCAD. The purpose of these meetings will be to review and validate proposed methodologies, assumptions, task inputs, scope content and exclusions, task schedule and key milestones, and specific data requirements. These meetings may be held in-person or via teleconference. It is anticipated that there will be a maximum of six (6) task initiation meetings or teleconferences in Phase II of the FLL Master Plan Update.

II.1C Client Working/Brainstorming Sessions
It is anticipated that there will be a maximum of four (4) working sessions with BCAD in Phase II of the FLL Master Plan Update. The purpose of these working sessions is to have interactive discussions or brainstorming sessions among R&A, members from the R&A Team as appropriate, and BCAD in a collaborative setting rather than a more formal briefing environment.
II.1D Formulation of Master Plan Update – Phase II Schedule

R&A will prepare a preliminary detailed schedule for Phase II of the FLL Master Plan Update using Microsoft Project for BCAD’s review and comment immediately following the Notice to Proceed/Consultant Work Authorization. Revisions will be made based on BCAD’s comments for further discussions with the Florida Department of Transportation (FDOT) and the Federal Aviation Administration’s (FAA’s) Airports District Office (ADO) – both of which are anticipated to be funding partners for the Master Plan Update. A second draft schedule will be prepared and submitted to BCAD for review and comment. Upon BCAD’s review, a third and final schedule will be prepared and submitted for BCAD approval. R&A will coordinate with all team members as necessary on the schedule for their participation relative to their defined roles. During the course of the project, R&A will monitor and maintain the schedule, and if necessary, will issue adjustments as required.

II.1E Study Advisory Committee Meetings

Meeting allowances for interacting with these Committees is included within the overall scope and budget established for the Stakeholder and Public Engagement/Outreach task.

II.1F FAA and FDOT Grant Support and Coordination

R&A will assist BCAD with coordination regarding FAA and FDOT grants for the FLL Master Plan Update. The following activities will be conducted:

- Submittal of the FLL Master Plan Update scope of work, budget, and schedule to FAA and FDOT, or independent consultant, as requested by BCAD.
- Response to comments from FAA, FDOT, and/or independent consultant on scope of work, budget, and schedule.
- Up to three (3) teleconferences to discuss comments and/or R&A’s response to comments.

II.1G BCAD/R&A Team Data Exchange Platform

R&A will work with BCAD to refine, improve, or replace the platform (site) established during Phase I for purposes of exchanging electronic data files and deliverables throughout the FLL Master Plan Update in order to improve the usefulness and value of this data exchange tool.

II.1H Master Plan Update Web Page

Consistent with the Phase I approach outlined, R&A will continue working with the Broward County Office of Public Communications and BCAD Public Information Office on the development and inclusion of specific content and related materials associated with Phase II of the FLL Master Plan Update for the website and other public media. Anticipated support responsibilities include:

- Develop key messaging with input and collaboration from internal stakeholders (i.e. BCAD, R&A Team members, Advisory Committees). Messaging will be written and developed in the appropriate voice and format based on the unique demographics of the target stakeholder group.
- Meet with Broward County Office of Public Communications and BCAD Public Information Office to determine process for design and development of project website and related social media.
- Support Broward County public communications team with gathering, writing and developing content for the webpage and other related media.
Continue to provide updated information and content throughout the master planning process.

II.1I Coordination with Other Ongoing BCAD Projects or Capital Programs
R&A anticipates having to coordinate with the consulting teams and/or BCAD project managers for other BCAD projects or capital programs that will be active and ongoing during the development of the FLL Master Plan Update. Coordination will be necessary to exchange information about projects with a focus towards avoiding duplication of efforts, and ensuring consistency in data assumptions. The following programs have been identified by BCAD:

- South Runway Expansion Program
- North Runway Rehabilitation Program
- Airspace Mitigation Program
- Terminals 1, 2 and 3 Renovation and Expansion Programs
- Terminal 4 Program
- Future FAR Part 150 study
- Improvements to Perimeter Road

R&A anticipates accomplishing this coordination on the basis of teleconferences, in-person meetings, and data exchanges. A maximum of four (4) in-person meetings, eight (8) teleconferences, and associated data exchanges are anticipated in Phase II. It is also assumed that BCAD will provide R&A with relevant data and electronic files in digital format, and facilitate coordination with key staff involved in other BCAD projects or programs.

II.1J Project Manual Update
R&A will update the Project Manual developed in Phase I of the FLL Master Plan Update in order to revise or amend the following information (as necessary or applicable):

- Master Plan contacts (R&A Team, BCAD and others)
- Scope of services
- Schedule
- Document and correspondence templates

R&A will work with BCAD to identify the desired format for reports, meeting minutes, status reports and other related documents. The Project Manual will be re-distributed to all members of the team. It will be distributed electronically and maintained with the established Master Plan Update webpage.

II.1K Progress Reports
R&A will provide the BCAD Project Manager, and others as required, with monthly written status reports on project schedule, upcoming milestones, and budget as well as any issues that have arisen that may affect delivery of the Master Plan Update. In addition, monthly invoice billing reports will be submitted to BCAD for approval and processing. The format of these reports will be discussed and agreed upon with BCAD. In addition to formal status reports there will be informal status reports in the form of conference calls, meetings and other discussions throughout the duration of the project.

II.1L Monthly OESBD Goals Reports
R&A will provide the BCAD Project Manager, and others as required, with monthly OESBD goals reports following BCAD protocol for documentation of DBE participation.

Assumptions and General Comments:
R&A would serve as the point of contact for communications among BCAD and members of the R&A Team unless otherwise agreed upon on a task by task basis for purposes of facilitating study performance efficiency and communications

Items of Work Not Included in Scope:
Not Applicable to this Project Management and Coordination Task

Supporting Sub-Consultant
None

Data & Resources Required From BCAD or Other Parties
As specifically noted under the Scope of Services above

Deliverables
• Phase II Project schedule
• Monthly status reports
• Monthly OESBD reports
• BCAD/R&A Team Data Exchange Platform Revisions or Changes
• Updated Project Manual
Overview and Scope of Services

The demand/capacity analysis will determine the capacities of the existing airfield, terminal, landside, and various other airport support facilities relative to their capabilities for accommodating projected future demand. Each functional area of FLL will be reviewed to determine whether facility expansions, modifications, or enhancements will be required to satisfy forecast demand, or to maximize FLL's potential and/or minimize off-airport impacts. The extent and nature of aviation facilities required will be identified and documented.

The following subtasks describe in more detail the specific activities that will be conducted by the R&A Team for each of the major functional areas.

II.2A Planning Metrics, Planning Factors, Design Standards and other Assumptions

Planning metrics, factors, and other operational or processing assumptions will define the basis for calculating and assessing the demand/capacity relationships which are used to derive facility requirements from the derivative demand forecasts. These factors are unique to the type of facilities being assessed for FLL and must reflect BCAD's development objectives in consideration of internal and external stakeholder feedback.

Some factors are simple processing rate multipliers of activity, such as forecast peak hour flows of passengers or baggage. Other examples include: cargo tonnage processing rates on a per square foot of building basis; area of aircraft hangar and ramp parking related to typical aircraft footprints by type; number of days of fuel storage reserves for fueling facility based on daily fuel utilization rates. Other considerations are more complex and involve tradeoffs between airport land use, airport impacts, and dynamic operational capacity analyses necessitating the use of simulation modeling tools and techniques.

Activities undertaken in this subtask will also focus on the identification of Level of Service (LOS) indices. These LOS indices are intended to address such typical items as an acceptable level of delay associated with airfield operations to more subjective considerations relating to area requirements associated with the passenger's perception of a high quality travel experience within both the sterile and non-sterile portions of the terminal and in the access, parking, and curbside elements of the terminals. Measures will be defined in general terms. It is anticipated that as a point of beginning existing FLL standards, such as the maximum walking distance from parking and others will be identified along with other planning criteria such as those from the International Air Transport Association (IATA) and others contained within publications funded and prepared through the
Transportation Research Board’s Airport Cooperative Research Program. Information from FLL’s 2014 passenger surveys will also be used in the consideration of LOS indices.

Planning factors, methodologies, and assumptions will be approved by BCAD prior to initiation of analysis. The R&A Team will work collaborative with BCAD in the generation of major assumptions, planning factors and utilization of existing design standards for the determination of facility needs at FLL. Planning factors will be reviewed during one (1) on-site meeting with BCAD.

II.2B Airfield and Airside Demand/Capacity and Requirements

This airfield and airside subtask will analyze the capacity of the existing airside system based on the updated forecast of aviation demand and identify physical, technology-based, or operational improvements and refinements to the existing airfield in order to meet future demand at an acceptable level of performance. Improvements to existing runways, taxiways, hold pads, aircraft ramp areas, NAVAIDs, and airspace procedures will be considered in this task using qualitative best practices. R&A will also consider potential improvements to FLL operations that may result from the implementation of NextGen initiatives.

The airside demand/capacity analysis will determine if and/or when enhancements to airfield capacity will be required at FLL to either satisfy forecast future demand or to maximize the Airport’s potential and/or minimize off-airport impacts. This subtask does not provide for airfield modelling, on the basis that changes in airfield/runway capacity are not expected to be required. Capacity rates used during the EIS will be compared to peak hour demand estimates to determine the ratio between capacity and forecast demand.

A maximum of two (2) meetings with the airlines and FAA personnel at both the Tower and TRACON facilities will be undertaken as part of this subtask. These meetings will be coordinated with BCAD.

As required by forecast demand and design standards, the R&A Team will define and evaluate additional improvements required to optimize airport capacity and operational efficiency. The following specific analyses may be conducted at FLL as part of the Master Plan Update. The focus of these analyses will be to determine requirements. Alternatives will be assessed in later tasks.

- Aircraft holding analysis to determine the need for additional area for departure sequencing, severe weather operations, and holding arriving aircraft awaiting gate availability
- Weather data analysis to determine wind coverage and ceiling/visibility occurrence for potential upgrade of NAVAIDs
- An FAA facilities (Air Traffic Control Tower, Navigational Aids, etc.) needs analysis to determine future requirements
- Evaluations of airfield improvements reflected in the approved ALP but modified or postponed for development at a future time frame, such as the western end of Taxiway H
- Modification to the airfield geometry on the north west end of the Airport with the decommissioning of Runway 13-31, such as the Runway 13 end area
- Evaluations and refinements of the airfield geometry to connect potential future land uses with the taxiway and runway system at FLL

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• Analysis of critical airspace surfaces (including Part77, TERPS, OEI) to ensure that proposed developments on-airport and in the surrounding environment do not place restrictions on the operation of the runway system, including proposals by other agencies such as FDOT, FHWA and Port Everglades

• Analysis of on-airport site development and improvements to ensure that FAA standards are met

• Line-of-sight analysis from the existing and potential future Air Traffic Control Tower at FLL, including selection of a specific site to be reserved on the ALP

• Evaluations of uses within the Runway Protection Zones (RPZs) in accordance with FAA standards and requirements

• Assessment of NAVAIDS (except the RTR), including the location of the VOR and the Runway 10R approach capability requirements

• Incorporation of NextGen initiatives and the Metroplex studies into the Master Plan Update

In addition, R&A will incorporate/adopt the following previously completed or ongoing analyses from other studies into the FLL Master Plan Update, as deemed appropriate by BCAD, for purposes of avoiding duplicative efforts in the scope of work for this Master Plan Update:

• Runway length evaluation to determine the runway length requirements to serve existing and future aircraft fleet and markets using the aircraft manufacturer's planning manuals and FAA information

• Integration of improvements resulting from the Runway 10L-28R rehabilitation program

• Integration of improvements resulting from the Terminal 1 and final Terminal 4 programs

• Analysis of existing “hot spots” on the north airfield

• Assessment of the exiting RTR and potential alternate locations

Interim Deliverable: All analyses and information collected will be summarized and documented in a PowerPoint presentation and ultimately incorporated into the Demand/Capacity and Facility Requirements chapter of the FLL Master Plan Update.

II.2C Identification of Actions Required to Comply with FAA Standards

Existing non-standard conditions (including ponds located within the runway protection zones) to FAA airport design standards should be eliminated where practicable. In this subtask, R&A will review each non-standard condition identified during the inventory task completed in Phase I and identify possible remediation options. Remediation options will be identified and reviewed with BCAD staff. Disposition would entail recommended development and/or continuation of FAA approval of modifications to standards.

Future airport development projects should consider the correction of non-standard conditions in their scope. The potential correction actions identified in this task for existing conditions will be taken into consideration in subsequent tasks during the development of Master Plan Update alternatives.
II.2D Terminal Gate Capacity and Requirements Analysis

The number of aircraft gates required may vary based on assumptions regarding expected aircraft size and fleet mix. The purpose and goal of this subtask is to quantify the peak-hour gate capacity of FLL’s Terminals based on the baseline (i.e., conditions resulting from the completion of the ongoing terminal modernization and renovation programs) terminal configuration and parking plan. For purposes of this analysis, peak-hour gate capacity is defined as the maximum number of aircraft that can be parked at the Terminals during the three primary daily peak periods under a given set of assumptions. It does not focus in defining gate maximization on the basis of aircraft turns per gate, aircraft seating capacity, or passenger volumes processed per gate. The passenger processing and holding capacity of the individual holdrooms associated with each gate will be evaluated under a subsequent subtask of this scope of services.

To access the peak-hour gate capacity described above, the base year (2015) daily activity schedule prepared under the Aviation Activity Forecasts task from Phase I of the FLL Master Plan Update will be used. Arriving flights and departing flights will be paired based on aircraft equipment types and reasonable assumptions of time required to deplane passengers, service the aircraft, and enplane passengers for the subsequent outbound flight. The paired schedule will then be processed through a ramp chart model to assess gate demand during the three, highest activity periods in the day. The results of the ramp chart model will then be used to identify opportunities for achieving greater gate utilization efficiency, and the establish an activity “growth factor” that will serve to define the gate capacity limit of each Terminal given the most demanding peak-hour activity period.

A Peak-Hour Demand Gate Optimization methodology, as noted above, will be utilized. Gate Optimization herein is defined as gate utilization under a grown schedule that preserves FLL’s daily distribution of activity patterns, with emphasis given to the peak-hour gate demand. It focuses on the practical maximization of gate use in the peak-hour. It does not focus on maximizing gate use throughout the day (i.e. gate turns per day), although the resulting turns per day per gate will be summarized as well.

Up to four of the future activity schedules (from either the baseline forecast or the alternate demand scenarios) will also be analyzed through the ramp chart analysis based on the same methodology described above. Using these design day schedules, daily activity (arrivals, departures, and total aircraft operations) distribution graphs will be developed and used to establish the three highest demand periods during the day.

Using the results of the ramp chart analysis, gate utilization and growth factor projections for reaching “capacity” will be derived. This will include assessing opportunities for achieving greater gate utilization efficiencies relative to the flight-to-gate allocation priorities considered by the ramp chart model. The results of this analysis will then be converted to future activity projections and general timelines for reaching the estimated gate capacity.

Gate and hardstand requirements will be derived based on activity forecasts and the future activity schedules using VGates, a proprietary tool developed by R&A to assess gate and hardstand capacity and requirements. VGates also provides a means to analyze existing gate allocations and define strategies to increase capacity while minimizing investments. As part of this task, it is anticipated that R&A will determine:
- Terminal contact gate requirements: aircraft parking positions served by passenger boarding bridges
- Operational remote stands: operational aircraft parking positions without a passenger boarding bridge connection to the terminal building. These stands can be located around the terminal building and/or in separate areas on the airfield. Busses are used for the loading and unloading of passengers.
- Non-operational stands: also referred to as Remote Over Night (RON) stands are temporary (Non-Operational) aircraft parking positions. These stands can be used when the turn-around time of an aircraft parked at a contact stand is very long (e.g. 5 - 6 hours or longer) or stays at the airport during the night.

II.2E Terminal Demand/Capacity and Requirements

R&A will specify the facility requirements of the passenger terminal(s) in terms of the types of facilities and associated amount of space that will be required to accommodate the forecast for commercial air carrier activity. The terminal facility requirements that are developed under this master plan element will provide the basis for developing alternative concepts to further improve the terminal’s facilities (beyond the enhancements presently being implemented through the various terminal renovation or modernization programs) and accommodate forecast growth while maintaining BCAD’s aspirations for the level of service it provides to customers. In particular, requirements to improve capacity and service supporting two passenger segments will be emphasized:

- FLL continues to experience fast growth in international traffic. Therefore, it will be important to establish near- and long-term needs for expanding the international arrivals capacity and enhancing the passenger experience. The potential need for temporary international arrivals facilities will be reviewed and considered in the definition of the overall long-term terminal program.
- FLL is a heavily utilized airport for cruise ship vacationing travelers. Baggage handling systems must support early baggage check-in times. Passengers’ checked and carry-on bags are larger in size and vary in contents which require special consideration by the designers of those systems. Cruise ship passenger arrival times and dwell times have unique characteristics that will be taken into consideration in the definition of the terminal program. R&A will work closely with BCAD and the Port to define facility requirements to serve this segment of the FLL passenger base.

The demand/capacity analysis for the terminal complex will determine when existing terminal capacity will be exceeded and enhancements to terminal capacity would be required to accommodate projected demand within acceptable passenger service levels. The demand/capacity analysis will provide a comparison between existing terminal capacities provided by facility inventories to future facility needs. Terminal computer simulation modeling software will be used to analyze facility needs to accommodate demand loads derived from the forecast/future Design Day Flight Schedules (DDFS). Requirements will be analyzed with consideration of airline terminal assignments to provide terminal specific facility requirements for each planning horizon prescribed for the forecast. Ongoing terminal expansion and improvement programs at Terminal 1, 2, 3 and 4 will be taken into consideration in the analysis of future needs.

Near term facility requirements will be analyzed using current operating conditions and subsequently updated to reflect adopted improvements for technology or changes to operating parameters after
completion of Alternatives. A tabulation that compares the current facility inventory to future facility requirements will be prepared. Requirements for the following types of terminal facilities will be developed under this element:

- Airline Facilities:
  - Check-in areas including airline ticket offices
  - Bag rooms for outbound bag make-up and inbound unloading
  - Bag Claim areas including baggage service offices
  - Gate holdroom areas including restrooms
  - Airline or airport club/business center
  - Ramp operations offices

- Commercial and airport amenities and services programs
  - Retail, Food and Beverage, News
  - Duty Free
  - BCAD sponsored/administered customer services and amenities
  - Public art program spaces

- Transportation Security Administration:
  - Passenger security screening checkpoint (Standard and TSA ✓ Check)
  - Checked baggage screening
  - Administrative and support areas

- Customs and Border Protection Facilities
  - Primary Inspection (Global Entry, Automated Passport Control (APC) kiosks, booths)
  - International Baggage Claim
  - Secondary Processing
  - Exit control
  - Other operational offices

- Ground Transportation service counters

- Police and Other Agencies

- BCAD Administration and Operations
  - Executive and administrative offices, meeting and support areas that are located within the terminal buildings
  - Airport Operations
  - Airport Maintenance facilities such as workshops, storage and equipment areas that are located in the terminal buildings
• Building Circulation and Services
  o Circulation corridors
  o Vertical Circulation
  o Loading Docks
  o Waste handling
• Building Utility Spaces:
  o Mechanical, electrical, plumbing, and fire protection system equipment rooms
  o IT facilities

There will be different approaches used to develop in-terminal facility requirements depending on the facility type:

• Passenger processing facility requirements will be developed using methodologies that are generally consistent with the International Air Transport Association (IATA) Airport Development Reference Manual, 10th edition. Computer modeling will be used to synthesize factors that generate demand; and to correlate demand to facilities that would be required to achieve the level of service prescribed by the BCAD.
  o Departing and arriving volumes will be generated using DDFS that have been developed as part of forecasts for each planning horizon. These schedules would provide flight by flight descriptions of service routes, aircraft equipment types, load factors and local boarding percentages.
  o Passenger volumes will be profiled using passenger attributes such as show-up times for check-in, class of service, percentage passengers checking bags, and class of service among other factors.
  o Modeling of individual subsystems will occur to analyze subsystem performance and to determine facility requirements under current and optimized operating conditions.
  o IATA's level of service framework, along with other level of service standards established specifically for FLL or derived through other industry accepted publications (e.g. those published through the Airport Cooperative Research Program), will be used as the basis for reaching consensus with BCAD designated stakeholders for the quality of experience that the Airport is able to provide its customers. Specifically, the IATA framework addresses passenger experience in terms of transaction (processing) times and comfort while in queue for service. Each subsystem used to process passengers, for example check-in, will be analyzed separately since criteria used to measure level of service vary among different subsystems.
  o Facility space templates will be developed in collaboration with BCAD designated stakeholders to represent the optimal operating conditions for each passenger processing area. Templates will define spatial clearances for safe and efficient operations around equipment as well as relationships between process areas that are part of each facility.
• Concessions
  o The R&A Team will collaborate with BCAD’s commercial program manager to develop factors that can be applied to forecast annual enplanements to derive supportable concession program requirements each activity level.
• BCAD and other agencies
  o Interviews will be conducted with the BCAD and other agencies to separately determine their space requirements, unique facility specifications, and triggers for additional space requirements.
  o Relationships between discrete organizations within each agency will be identified to establish physical adjacency requirements.
• Building Circulation and Services
  o For purposes of this study element, facility requirements for building services will be represented as a percentage of overall building space since these types of areas can vary depending on the physical arrangement of spaces.
  o Optimal capabilities desired by BCAD for typical building circulation components such as elevators and loading docks will be documented.
• Building Utility Spaces
  • For purposes of this study element, facility requirements for building services will be represented as a percentage of overall building space since these types of areas can vary depending on the physical configuration of the terminal and type of energy system.
  • Interviews will be conducted with BCAD designated stakeholders to document the optimal types of systems that should be used to support future terminal development.

II.2F Terminal Roadway Demand/Capacity and Requirements
The near-term (5-year) terminal roadway demand/capacity and requirements will be developed and determined in a separate landside analysis (termed herein as the LANDSIDE STUDY) for BCAD. The methodologies and procedures developed as a part of the LANDSIDE STUDY will be used to develop the intermediate (10-year) and long-term (20-year) planning horizons. As the initial step in the definition of intermediate and long-term terminal roadway facility needs, vehicular traffic projections for the terminal roadway network will be prepared using data inventoried as a part of the LANDSIDE STUDY and documented in the Master Plan Update by R&A as a part of Task 1.4 Existing Conditions Inventory.

Projections of future demand will be based on the projected flight schedules, projected arrivals/departures, enplanement/deplanements, originating/terminating passengers, and demand peaking set forth in the Aviation Activity Forecasts, Task 1.5. The methodology for the mid-term and long-term planning horizons will use the traffic modeling assumptions, activity ratios, and simulation models developed for the independent LANDSIDE STUDY. Specifically, the mid-term and long-term gated flight schedules will be used as input into the simulation model.

As a part of the initial landside planning effort under the Master Plan Update, the near-term (5-year) results of the LANDSIDE STUDY will be reviewed against the 5-year demand forecasts developed from the Master Plan Update in Task 1.5 to identify potential differences in base data and allow for refinement of the LANDSIDE STUDY effort, should the need be identified. The projections and any refinements to the LANDSIDE STUDY will be agreed upon by BCAD and FAA prior to the beginning the evaluation of the facility requirements.
Using the goals, objectives and LOS standards identified in Task II.2A, the 10-year and 20-year terminal roadway requirements will be identified. This task will also coordinate the assumptions and considerations from the LANDSIDE STUDY in the assessment of the 10-year and 20-year evaluation.

Using the same computerized traffic flow simulation model developed during the LANDSIDE ANALYSIS the projected flow of vehicles through the terminal area will be evaluated for capacity, choke-points, congestion, and other areas where efficiency or passenger convenience or safety could be improved. Using current industry guidance including that from the Airport Cooperative Research Program (ACRP), the terminal curbsfronts will be evaluated for number and type of lanes and length of curb for each mode split. Service and emergency vehicle access through the terminal area will also be evaluated. Guidance signage and terminal area traffic information systems will also be evaluated for areas of potential enhancement. From these evaluations, a list of facility needs and recommended improvements will be prepared to address the projected demand for the 10-year and 20-year planning horizon.

Up to three, two-hour meetings are included as a part of this task.

II.2G Non-Terminal Roadways Demand/Capacity and Requirements

This subtask comprises the use of spreadsheet-based mathematical models and other analytical tools to analyze the capacity of the existing non-terminal area roadway system at FLL. This will identify whether forecast traffic activity using these roadway facilities would exceed available capacity during the 5-year, 10-year, and 20-year planning horizons. The scope of work is based on the following assumptions:

- The roadway analysis would be limited to the existing, publicly accessible (non-secure) roadway system providing access to the general aviation and cargo facilities on the north and west sides of the Airport, and other perimeter roads traversing the south side of FLL.
- Future peak hour roadway traffic volumes and demand/capacity analysis would be prepared for the 5-year, 10-year, and 20-year planning horizons based on the Baseline aviation activity forecasts prepared as part of Phase I.
- Analysis would be based on the peak-hour activity for traffic associated with the Airport’s aeronautical activities.
- The analysis would be limited to the major roadway and intersections serving as the primary transportation corridors within the study area. Individual tenant leaseholds/site access will not be assessed.

This task will be conducted to develop a spreadsheet model to estimate roadway traffic demands, assign traffic demands to the existing traffic generator sites and roadway network by type of vehicle (i.e., employee vehicle or tenant/delivery vehicle), and calibrate the estimated demands to observed conditions. Key steps include the following:

- Analyze the data collected during the inventory task in Phase I and process this data for use in the trip generation and assignment models.
- Prepare a balanced roadway network depicting the roadway peak hour traffic volumes throughout the roadway network for up to two critical peak hour periods. The balanced network would be based on the data collected in the inventory task.
Segment the vehicle trips by type of vehicle based on the classification data. The vehicle types will be comprised of two-axle vehicles and multi-axle vehicles.

Prepare and calibrate the existing conditions trip generation and distribution model of the study area. As part of this process, a spreadsheet-based model will be prepared to define traffic volumes by mode (i.e., employee/private vehicle and tenant/delivery vehicles). The peak hour traffic volumes will be calculated for two peak hour periods. Adjustments will be made to key model inputs, as necessary, to calibrate the model to field survey data and observations. The model will be validated when the model output approximates (within 10%) of the actual traffic volumes using the study area roadway system during the peak hours analyzed.

Prepare summary of peak hour intersection turning movement volumes and roadway link volumes for two peak hour periods.

Next, the following steps will be taken to prepare and analyze Baseline Roadway Demand/Capacity Models and Analysis for assessing the existing levels of service experienced within the study area intersections and roadway system. Key steps include the following:

- Develop a roadway demand/capacity model to estimate the roadway capacity of the study area roadway system on a link-by-link basis. Roadway capacity will vary based on number of roadway lanes and characteristics of roadway segment using airport-specific capacity assumptions. Calculate the LOS of the existing roadway system as a function of roadway demand.

- Calculate existing intersection levels of service using Highway Capacity Software (HCS).

- Summarize the findings using tables and charts.

The spreadsheet models will then be used to estimate future traffic volumes within the study area. Key steps include the following:

- Use monthly historical aviation data to adjust the Baseline traffic volumes previously prepared for seasonality. Traffic volumes will be adjusted to represent a peak hour traffic volumes during an average busy day during the peak month.

- Prepare summary of peak hour intersection turning movement volumes and roadway link volumes for two peak hour periods for the 5-year, 10-year, and 20-year planning horizons.

- Update the roadway demand/capacity model to estimate the roadway capacity of the study area roadway system on a link-by-link basis. Calculate the LOS of the future roadway system as a function of roadway demand divided by roadway capacity.

- Calculate future intersection levels of service using Highway Capacity Software (HCS)

- Identify the needed capacity to address anticipated intersection or roadway lane deficiencies at an analytical level of detail (i.e., detailed roadway and/or intersection concepts will not be developed).

- Summarize the findings using tables and charts.

II.2H Public and Employee Parking Demand/Capacity and Requirements

The capacity assessment of FLL's public and employee parking facilities and identification of supplemental parking facilities needed to handle future growth will be achieved through a series of
sequential work tasks that builds upon the historical parking utilization and transaction data collected from BCAD’s parking revenue control system.

The scope of work is based on the following assumptions:

- All required data will readily available from the existing revenue control system and other sources managed by BCAD; no field data collection is anticipated
- Future public and employee parking demands would be prepared for 5-year, 10-year, and 20-year planning horizons based on the Baseline aviation activity forecasts prepared as part of Phase I.
- Estimated public parking demands will be prepared for a typical busy day during the peak parking month.
- The public parking demands and requirements will represent the airline passengers, meeters/greeters, and well-wishers using the parking facilities within the Airport revenue control system.
- Employee parking demand and requirements will address the needs for parking within the overall shared employee parking lots; employee parking at the individual employment sites will not be quantified or assessed.

The baseline public parking demand and capacity assessment of public parking facilities will include the following key steps:

- **Assessing Existing Parking Demand** — assessment of historical daily peak and overnight on-airport parking demand to identify the typical design-day activity. Prepare a parking demand model based on transaction data by parking duration (e.g., 0 to 30 minutes, 30 minutes to 1 hour, 1 to 2 hour, etc.) to identify on-airport parking demand by duration categories comprised of short-duration (e.g., 0 to 3 hours), mid-duration (e.g., 3 to 24 hours), and long-duration (greater than 24 hours). The model will estimate the number of spaces in each facility currently required to accommodate each duration category of parking activity. The model will be calibrated to the existing revenue generated by each of the airport’s parking facilities and the short-duration and long-duration components of demand accommodated in each facility during the typical design day period. Off-airport public parking demand will be estimated based on a high-level assessment of capacity and occupancy based upon information collected as part of the inventory task completed under Phase I.

- **Estimating Existing and Future Public Parking Requirements** - the parking demand model will be used to predict parking demand by duration category for each on-airport parking facility for future year conditions (5-year, 10-year, and 20-year planning horizons). Both on-airport and off-airport future parking demand will be estimated based on the assumption that parking demand will increase in proportion to the expected increase in annual airline passenger originations. Existing design-day on-airport public parking demands would be converted to on-airport parking “requirements,” which include an additional level-of-service based “buffer” of parking spaces such that a parking facility is not 100% occupied on the typical design day. The resulting parking requirements will be based on technical and policy-level assumptions regarding the desired allocation by location for short-duration and long-duration parking, close-in vs. remote parking, and market allocation between on-airport and privately off-airport operators. It is assumed that the existing market share allocation between on-airport and off-airport public parking demand will remain constant and that the growth in future on-airport parking demand would be.
accommodated on-airport at FLL. These assumptions and resulting parking requirements will be discussed and confirmed with BCAD staff.

- **Assessing Capacity of Existing Facilities** — the estimated requirements will be compared with available parking spaces and estimated deficiencies (or surplus) in available spaces will be identified. Requirements will be presented in a tabular format that will identify the planning horizon (and originating passenger demand level) where parking demand is expected to exceed the supply of parking and the anticipated deficiency on a facility-by-facility basis.

The baseline parking demand and assessment of FLL’s employee parking facilities will similarly include the following key steps:

- **Assessing Existing Employee Parking Demand** — the existing demand for employee parking by employee parking facility will first be estimated. Employee parking demand estimates will be based on actual parking lot accumulation counts by parking lot location obtained during an average busy day of the peak month for employee parking (which will likely differ from the public parking peak month which occurs during the summer months). Parking lot entry and exit volumes (in 15-minute increments) will be used to adjust the occupancy count data to develop a profile of parking accumulation over the course of the busy day, including maximum accumulation that occurs at employee shift overlap. Estimated accumulation profiles will be validated through comparison with field observations and anecdotal information that may be available from BCAD staff.

- **Estimating Existing and Future Employee Parking Requirements** — Future employee parking requirements will be estimated by assuming that employee parking requirements will increase in proportion to the expected annual increase in overall airport activity, assumed to be represented by the average growth in forecast annual originating airline passenger activity and forecast annual aircraft operations. The key assumptions and resulting facility demand and requirements will be discussed and confirmed with BCAD staff.

- **Assessing Capacity of Existing Facilities** — the requirements will be compared with available parking spaces and estimated deficiencies (or surplus) in available spaces will be identified. Requirements will be presented in a tabular format that will identify the planning horizon (and the corresponding passenger demand level) where parking demand is expected to exceed the supply of parking and the anticipated deficiency on a facility-by-facility basis.

**Interim Deliverable:** The public parking and employee parking demand/capacity and requirements analyses will be summarized and documented in a PowerPoint presentation and ultimately incorporated into the Demand/Capacity and Facility Requirements chapter of the FLL Master Plan Update.

**II.21 Airport and Airline Support Facility Needs**

The R&A Team will conduct a demand/capacity and facility requirements assessment for each of the existing and future support facilities at FLL. Existing facilities will be compared against future demand to determine the extent of improvements needed at each planning horizon. Specific industry methodologies will be used for each support element, considering the unique factors that influence its demand. Facility features to be analyzed include facility size, type, access, and parking space requirements. Information obtained in the inventory task will be reflected in the analysis. The facilities to be analyzed include:

- Airport maintenance and equipment storage...
- Airport administration and management
- Aircraft rescue and fire fighting
- Flight kitchens
- Aircraft maintenance
- FAA facilities
- Ground service equipment storage and maintenance
- Fuel storage facilities
- Airport security and police
- Other miscellaneous airport and airline tenant facilities (Naval Air Museum, Boat Clubs, other government facilities, etc.)

This analysis will define the space requirements for airport and airline support facilities based on functional dependencies with primary Airport facilities and future demand. Space requirements will be used in subsequent tasks to define and evaluate future airport expansion, enhancement or development alternatives.

II.2J Fixed Base Operator (FBO) and General Aviation Facility Needs

The R&A will conduct a demand/capacity and facility requirements assessment for existing and future FBO and general aviation facilities at FLL. Existing facilities will be compared against future demand to determine the extent of improvements/expansion needed for each planning horizon. Requirements will be based on the anticipated transient aircraft fleet served by FBOs and general aviation aircraft based at FLL, as well as information obtained during the inventory task. Facility features to be analyzed include facility size, type, access, and parking spaces, using methodologies that are applicable to this segment of activity. The facilities to be analyzed include:

- Sheltair facility
- Other FBO facilities such as Jetscape, National Jets, and Signature
- Aircraft Leasing- Jetscape
- General Aviation hangars and ramp areas
- GA fuel facilities
- GA user vehicle parking areas
- GA facility landside and airside access
- Other GA supporting facilities (tenant storage, maintenance, etc.)
- Other tenants such as Gulfstream and Embraer

Space requirements will be used in subsequent tasks to define and evaluate future airport expansion, enhancement or development alternatives.

II.2K Air Cargo Facility Needs

A cargo trends analysis will be integrated with the cargo forecasts (prepared under the Aviation Activity Forecasts task in Phase I of the FLL Master Plan Update) to determine near and long-term
demand. This will require an analysis of the projected tonnage for freighter versus belly activity, domestic versus international, and origin and destination versus transfer activity. Integrator carrier will be looked at as a separate category with distinct operating requirements. The tonnage throughput for the projected cargo activity will be estimated and the results translated into square footage requirements for buildings (to include warehouse and office), aircraft apron, and landside requirements for trucks and automobiles. The need for specialized facilities, whether stand-alone or contained in the cargo buildings will be evaluated and included. The differences between capacity and demand will be calculated, and the properties designated for cargo and cargo related activities will be planned to optimize processing time and connectivity, and reduce costs for tenants and users. Facility needs will be analyzed for the following:

- Cargo processing facilities
  - Belly cargo buildings with ramp access
  - Cargo buildings with adjacent aircraft parking
  - Freight forwarder facilities
- Cargo ramp areas and aeronautical access
- Landside trucking and automobile requirements
  - Truck docks
  - Truck maneuvering and queuing
  - Customer parking
  - Tenant parking
- Other air cargo support facilities
  - Specialized cargo support
  - Government office facilities

This analysis will define the current and future space requirements for air cargo facilities and functions. Space requirements will be used in subsequent tasks to define and evaluate future airport expansion, enhancement or development alternatives.

II.2L Regional (Off-Airport) Demand/Capacity and Requirements
The capacity and reliability of the off-airport roadway network directly affects the travel experience of airport passengers during the ground segment of their trip. In this task, the R&A Team will conduct a preliminary analysis of known deficiencies and capacity issues for existing off-airport roadways and regional roadway networks. This effort will also evaluate whether or not the local roadway plans adequately account for airport passenger traffic projections or if the proposed roadway improvements will affect traffic flow or passenger convenience at and near the Airport. This analysis will entail interviewing BCAD Operations staff, representatives from FDOT District 4, as well as Broward County Highway Construction and Engineering Division in up to six meetings.

Roadway deficiencies are typically determined by assessing the vehicle traffic volume demand against the capacity of the roadways during the peak hour. The demand / capacity ratio serves as a suitable indicator of the roadway Level of Service, which describes how effectively a road is able to handle traffic or congestion. When the Level of Service is beyond a certain threshold, traffic is deemed to have reached a
deficient/failing rating, and roadway improvements are typically required to alleviate roadway congestion. The R&A Team will coordinate with BCAD, FDOT and Broward County to identify a reasonable Level of Service expectation, or threshold, for this planning effort in Task II.2A. The off-airport roadway Level of Service will be calculated using FDOT’s Generalized Service Level Volume Table from the FDOT Quality/Level of Service Handbook.

As mentioned in Task I.4G, the local roadway network, that most directly influences travel to and from the Airport, is bounded to the north by Davie Boulevard (SR 736); to the west by SR 7/US 441; to the south by Stirling Road (SR 848); and to the east by US 1. Available historical traffic counts will be used to calculate a growth trend at the study area roadways and conduct one meeting with Broward County and BCAD staff to ensure future development for the airport is addressed in the growth trend. The calculated growth trend will then be utilized to determine traffic projections for the 5-year, 10-year, and 20-year analysis years.

The Southeast Florida Regional Planning Model (SERPM), version 7.0, will be used to forecast the 5-year, 10-year, and 20-year horizon years. The model will be validated with existing count data and trends identified documented as a part of the inventory, Task I.4G.

LOS analyses for the 5-year, 10-year, and 20-year horizon years will be conducted for the AM and PM periods. The scenarios will be analyzed to identify any deficiencies (i.e. LOS D) at the study roadways. If a deficiency is identified for a future year scenario, but not the preceding analysis year (i.e. deficient in 20-year, but acceptable in 10-year) a sensitivity analysis will be conducted by interpolating the traffic volumes to the mid-point 5 year increment (i.e. 15-year) to determine if the intersection/segment is also deficient at the mid-point. The level of service will be documented for the roadways for the study area roadways. Deficiencies will be identified and discussed with the BCAD in up to three meetings.

II.2M Demand/Capacity and Aviation Facility Requirements Chapter
A Demand/Capacity and Aviation Facility Requirements Chapter will be prepared to summarize the FLL demand/capacity and facility needs analyses and results. A preliminary draft version of the Demand/Capacity and Aviation Facility Requirements Chapter will be submitted to BCAD for review and comment. The BCAD review and comment process for the Demand/Capacity and Aviation Facility Requirements Chapter will incorporate two revision rounds; (1) preliminary draft for BCAD review and comment, and (2) final draft for BCAD review and comment. The second round of comments/revisions will be incorporated into the draft chapter and then remain until final comments are solicited at submission of the draft Master Plan Update Report.

Assumptions and General Comments:
An independent LANDSIDE ANALYSIS is being performed that will evaluate the near-term (5-year) terminal and access roadway needs which will establish the baseline assumptions and traffic flow model that will be used to evaluate the mid-term (10-year) and long-term (20-year) requirements under this effort.

Additional meetings not already accounted for above.

Items of Work Not Included in Scope:
- Traffic counts or observations
- Analysis of rental car facilities
On-site parking facility entry/exit volume counts, surveys or parking facility field observations
Formulation of parking demand management strategies
Pricing rate structure analysis
Market based analysis techniques to derive the concession program component of the overall terminal and airside program.
Detailed systems analysis of baggage screening and conveyance capabilities
Facility Conditions analysis
Site Utilities and Building Engineering systems (M/E/P/FP) capacity analysis
Additional meetings not already accounted for above.

Supporting Sub-Consultant
Kimley-Horn & Associates, Inc.
Acai Associates, Inc.

Data & Resources Required From BCAD or Other Parties
Operational and ridership data for public transportation services
Regional initiatives and programs
Existing available traffic counts and turning movement counts (FDOT Statistics Office)
As specifically noted under the Scope of Services above

Deliverables
Draft Demand/Capacity and Aviation Facility Requirements Chapter in Microsoft Word and PDF format for BCAD review and comment
Final Draft Demand/Capacity and Aviation Facility Requirements Chapter in Microsoft Word and PDF format for BCAD, FDOT, and FAA review and comment
Electronic deliverables prepared as part of this task including PowerPoint presentations, AutoCAD files and planning calculations.
Sensitivity review of the independent LANDSIDE ANALYSIS based on updated near-term (5-year) projections developed as a part of the Master Plan Update Task I.5.
**Overview and Scope of Services**

This task will consider the future aviation facility requirements defined in the Demand/Capacity and Requirements task, along with BCAD goals, the established Airport/Master Plan vision, and strategic objectives to create future airport enhancement, improvement or expansion concepts for evaluation and selection of a preferred development alternative for FLL. Specifically, the R&A Team will apply the results of prior tasks (including those completed under Phase I) to identify, develop and screen a long list of integrated options for FLL’s various functional areas (airside, terminal, landside and support facilities), culminating with a short list of the most viable options which will then be formed into the preferred alternative.

The screening analysis for short list options to meet the needs of each functional area will be qualitative in nature, using evaluation criteria and a ranking methodology to be discussed with BCAD. The R&A Team will then use the short list of options to define integrated airport development alternatives that will be subject to more detailed evaluation in subsequent tasks.

The integrated alternatives will be defined to satisfy the future aviation needs and account for access and adjacency requirements (landside and airside portions) of all functions. Within the foregoing parameters, the alternatives will be defined to meet the BCAD objectives relative to specified evaluation criteria, such as the need to minimize off-airport impacts, enhance or protect the Airport’s security characteristics, maximize the potential to generate supplemental revenue, and to improve FLL’s economic contribution to the surrounding communities.

**II.3A Definition of Parameters for Alternatives Development and Evaluation**

In this subtask, R&A will work collaboratively with BCAD to define the applicable evaluation criteria and the methodology for the development and screening of alternatives. The possible evaluation criteria and parameters for the development of alternatives will be discussed in an (one) on-site working session meeting:

Key factors for discussion will include but will not be limited to:

- Limits of development
- Demand parameters
- Operational scenarios
- Evaluation criteria for screening alternatives in each functional area
- Ranking & weighting methodology for evaluation criteria
II.3B Preliminary Land Use Planning

The purpose of this sub-task is to begin assessing overall land availability at FLL relative to the gross facility requirements derived for each functional airport system needed to serve the long range forecast demand. Utilizing the results from the various demand-capacity and identification of facility requirements tasks completed under the prior task, land acreage requirements will be derived for preliminary land use planning at FLL. These land acreage requirements will comprise the gross area facility requirements identified for the various airport functional and operating systems at the Airport (i.e. airfield, terminal, landside/ground access/multi-modal, general aviation, cargo, maintenance, parking, etc.), along with other support land requirements associated with ingress/egress land access system, stormwater treatment and runoff, remote/overflow automobile surface parking requirements, and other development-supporting functions.

The preliminary land use plans will be developed for 20-year horizon: 2035 (representing the end of the 20-year master planning horizon). Up to three alternative land use options will be identified. The facility requirements identified as a result of the demand-capacity assessment, utilizing the Baseline Forecast projections will form the basis for this land use planning analysis. A sensitivity analysis utilizing one of the other alternate demand scenarios having the potential larger land area requirements would also be conducted.

The purpose of this initial assessment is to test, using an unconstrained planning approach, whether the required land acreage needed to provide the long range facility requirements identified for FLL can be served with the existing property, or if additional land is required. If additional land is indeed required, and assessment will identify the more desirable, as well as the most feasible (if they are not one in the same) off-airport expansion areas should be considered. The term unconstrained planning approach used above means that the existing property limits would not be considered non-expandable, nor will existing zoning restrict the potential for long range airport facility or infrastructure development. The land use plans will also depict the land area requirements for one interim future horizon (year 2025).

In addition, a preliminary screening of land use alternatives will be conducted based on the vision and strategic objectives defined in the initial stages of this study (i.e. during Phase I) to determine which options must be evaluated in more detail. R&A will define a screening matrix and criteria to be applied to the alternatives through the following steps:

- The R&A Team will work with BCAD staff and other policy makers and stakeholders identified by BCAD to refine the vision and strategic objectives defined in the initial stages of this study (Phase I). This refinement of goals and objectives will be based on new perspectives gained as a result of work performed to date as well as input received from other parties throughout the course of the study.
- The R&A Team will coordinate closely with BCAD staff to gather significant input, guidance, and assistance essential for the development of an effective and acceptable screening matrix and criteria.
- The R&A Team will then identify a review methodology and develop a set of criteria to be used in screening the preliminary land use alternatives.
The specific screening measures will be analyzed and, where appropriate, individual measures will be weighed based on their anticipated effect or importance in the process.

A set of specific review criteria to be used in screening the land use alternatives will be defined. It is anticipated that the following general categories will encompass the review criteria:

- Compliance with the Airport/Master Plan vision and strategic objectives
- Functional/operational efficiency
- Implementation Feasibility
- Financial Feasibility
- Integration/Compatibility with Surrounding Community

The review criteria will be described in detail, and the rationale for any weighting of factors will be presented and justified. While each criterion is described individually, the screening of the land use alternatives will be an integration of the screening criteria elements listed above.

Based on the preferred land use strategy selected from the preliminary land use options derived and evaluated, a revised land use plan for the area within the existing or proposed boundaries of the Airport will be prepared based on the consideration of highest and best use for property. Included in the analysis will be areas for aeronautical uses, including runway, taxiway/taxilane, aircraft parking and staging aprons, other airfield support areas, terminal support and landside areas, terminal area, cargo facilities, maintenance facilities, aeronautical support activities and other land areas that have viability for non-aviation revenue support in the form of industrial/retail/commercial development identified through the Market Assessment task undertaken in Phase I.

A depiction of current on-airport land uses will form the starting point for the analysis. The land use information will be depicted graphically over a planimetric base map of airport property that will also show major on airport geographical features such as major drainage channels, roadways, building and structures and stormwater detention facilities. Based on information developed through this task item a depiction of the future on-airport land use along with a land use summary generally describing the activities allowed in each category will be generated for BCAD review, as well as for the formulation of future airport enhancement or development alternatives, and ultimate inclusion into the Airport Layout Plans Set.

II.3C Alternatives Definition

The traditional master plan typically involves the development of a forecast and the selection of one preferred development plan (i.e. facility layout) that responds to the defined forecast. The limitation of the traditional master plan approach is that it does not adequately anticipate the risk of possible changes in market conditions (i.e. forecast demand); and most often it is inflexible and inherently unresponsive to those risks. Airport management typically becomes committed to the “plan”, which leads to resistance to change if and when such change is needed. The solution to the problem is a dynamic strategic master planning process that recognizes risk and complexity as a reality of planning; identifies strengths, weaknesses, opportunities, threats, risks and their impact on a single or multiple decisions; and finally, views choices as portfolios of risk. The resulting plan requires commitment to only the immediate first-term stage of development thus preserving long term flexibility.
Therefore, the goal of this subtask is to identify and assess long range development or asset (i.e. land) optimization scenarios for FLL that address the baseline forecasts and other demand scenarios defined as part of earlier tasks in the Master Plan Update. An initial portfolio of options (up to eight integrated options will be initially identified) for these long range development or asset optimization scenarios will be prepared using a holistic approach to addressing long range needs given an unconstrained thinking and visioning approach. The holistic approach means that the options will be developed to depict the various (integrated) long range needs and facility requirements identified for FLL’s airfield system, terminal facilities, general aviation facilities, cargo facilities, landside and ground access systems, and other aviation-supporting functions or facilities within an integrated plan. The integrated options will incorporate strategies for the following functional needs at FLL:

**Airfield Enhancement Strategy** - focusing on issues related to the overall airfield capacity, taxiway and apron congestion, efficiency of taxiing operations, navigational aids, pavement condition, air traffic control tower line-of-sight, and airspace operations. Airfield alternatives related to runway capacity, if deemed necessary from the demand/capacity analysis will focus on options previously considered in the south runway EIS. Thus, the airfield enhancement strategy in not anticipated to focus extensively, if at all, on additional runway capacity or runway reconfiguration options. Rather, the airfield alternatives are anticipated to include refinements to the (existing) baseline runway and taxiway system to address the issues identified in the airside requirements task, namely:

- Final taxiway system geometry for Runway 10R-28L
- Final midfield taxiway system geometry
- Taxiway system geometry for Runway 10L-28R
- Reconfiguration of the Runway 13-31 and Runway 10L-28R intersection
- NAVAIDs
- Runway length and airspace obstructions issues
- Hold pads and ramp areas

**Terminal Area Development Strategy** - although BCAD is currently in the process of renovating or modernizing the existing four terminals at FLL, these programs may lack the capacity or operational efficiency needed to serve to forecast demand during the next 20 years that will be evaluated in the FLL Master Plan Update. As a result, consideration to the timing of and demand for additional gates and supporting terminal facilities is prudent to undertake at this time. The terminal area plan will include analyses of how the terminal complex can be expanded in the following ways to meet project demand while minimizing the impact that the expansion would have on existing operations:

- Incremental expansion of the existing terminal precinct (terminal/gate/landside configuration)
- Reconfiguration of existing terminal precinct
- Consideration of a remote/second terminal precinct/passenger processing facility

The analyses of terminal expansions or enhancements will include consideration of the airline operations areas, security/CBP facilities, curbfront requirements (for existing and future terminals),
concessions, support facilities, and various other issues that will have a direct impact on terminal expansion and enhancement strategies.

Documentation of the preferred terminal development concept would include a Concept Narrative and Illustrations of Blocking and Stacking (at last development phase), which would consist of the following:

- Site Plans
- Aircraft Parking Layout
- Space Plans
- Typical Building Sections
- High Level Implementation Strategy including: illustrative drawings for each development phase generally correlating to the prescribed activity levels for the forecast; potential projects, including rough order of magnitude (ROM) capital cost by phase.

**Landside/Regional Access Development Strategy** - ground access to/from the Airport and landside capacity will be an increasingly important issue for FLL as passenger demand increases. This is true for all ground access modes, including personal automobiles, taxis, busses, limousines, and mass transit alike. The ground access plan will include, but not be limited to, recommendations for increasing roadway and curbside capacity, parking capacity, the overall level-of-service for ground transportation providers, Airport tenants distributed across the Airport, and meeters/greeters and well-wishers that pick up or drop off passengers at FLL.

The R&A Team will develop a series of landside and intermodal/transportation alternatives that provide sufficient capacity to meet passenger demand levels, operational and other programmatic requirements, consider other regional transportation initiatives, and meet BCAD’s objectives.

Based on the facility requirements, the landside development alternatives comprised of the various options for each landside element (i.e., parking, RAC, etc.) will be identified. Landside alternatives may include, but will not be limited to the following general concepts:

- Continue to refine and upgrade the existing landside configuration (Incremental Expansion)
- Reconfiguration of existing centralized landside facilities
- Consideration of decentralized multi-modal development concepts (i.e. remote commercial vehicle processing, remote parking, remote passenger pick-up/drop-off)
- Potential new modes of accessing the terminal facilities
- Curbfront by-pass lanes

The landside alternatives will be defined in close synergy with the terminal alternatives being considered.

**Aviation Support Facilities and Other Non-aviation Development Strategy** - as commercial activity at the Airport increases, important strategic decisions will need to be made with respect to the highest and best use of Airport property and the most efficient operation of its airfield. Such
decisions could have a direct impact on the way the Airport accommodates various segments of the aviation industry, most notably for FLL – general aviation, as well as other aviation-related businesses catering to cargo, aircraft maintenance, and others.

The main objective will be to assure that BCAD property is effectively used for economically productive purposes that:

- Meet the long-term aviation requirements
- Are compatible with high levels of aircraft noise and airport safety requirements
- Satisfy all grant compliance requirements of the FAA
- Provide maximum economic return to the Airport
- Contribute to business recruitment and retention, stimulation of local employment, neighborhood rehabilitation and infrastructure improvement, and improved quality of life

A series of options for utilization of vacant property within the Airport boundary area (i.e., aviation support, aviation related commercial/distribution, non-aviation related retail/industrial and other uses) will also be formulated and developed based on the results of the market assessment conducted in Phase I.

It is anticipated that the alternatives will comprise a No Action option and several options for optimizing FLL’s land assets with consideration for viable opportunities for expanding into adjacent or nearby parcels that could realistically support FLL’s operations and needs. Thus, the eight integrated alternatives will comprise a combination of the following:

- **No Action Option** - This baseline option consists of a no action approach, or keeping the Airport as it presently is (following the completion of the ongoing CIP) and not undertaking any significant expansions or modifications to the existing airport facilities. This alternative provides a baseline against which other optional alternatives, their costs, and impacts can be compared.

- **Identify Alternatives for the Airport within the Existing Airport Boundaries** - For each identified facility need, alternative facility or infrastructure development scenarios will be identified and developed that are designed to accommodate projected demand while maintaining the development action within the current boundary of the Airport. The alternative(s) will address airfield needs, terminal needs, landside requirements, ancillary and support facilities, on-airport circulation, parking, general aviation, and cargo facilities. In the event that facility needs cannot be accommodated totally on airport property, the residual demand not satisfied will be noted and the impact of this deficiency identified.

- **Identify Alternatives for the Airport beyond the Existing Airport Boundaries** - Alternatives for addressing FLL’s long term airfield, terminal, landside, general aviation, support facilities, cargo facilities, etc. will be developed and interrelated to one another and to the airfield (with improvements).

**II.3D Airport Enhancement Alternatives Workshop/Planning Charette**

Employing information developed in previous tasks and the details of analyses from activities under the early phases of the Alternatives Definition task, the R&A Team will conduct a half-day airport alternatives workshop and planning charette with BCAD and other airport stakeholders identified by BCAD. The R&A Team will develop presentation materials and have available working concept
drawings of various terminal, airfield and support facility alternatives and supporting materials for use in the workshop. An agenda will be prepared for general guidance of the alternatives planning charrette, but the emphasis will be on the development of an interactive working session with a free and open exchange of ideas, information and concepts. The workshop will occur early enough in the alternatives process to allow for the incorporation of ideas and suggestions into the alternatives development activities. As a result the alternative concepts that will form the initial basis for discussion will be initial and highly conceptual. From this process it is intended that BCAD staff can be directly involved in the development of options and also provide a background of knowledge that would be difficult to obtain in more traditional settings. To the extent feasible some materials will be provided prior to the meeting to allow participants to obtain a general indication of the direction that certain alternatives are taking.

II.3E Screening and Evaluation of Alternatives
Screening criteria will be identified through discussions with BCAD and may include a number of the items listed below:

- Extent of capacity enhancement or improvement to efficiency;
- Incremental Development Potential (i.e., can you gradually evolve from the existing conditions to the proposed long-term airport concept reflected by the long-range strategic option);
- Impacts to natural environmental features;
- Land use compatibility;
- Constructability and ease of implementation phasing;
- Benefit(s) from an airline operational cost perspective;
- Operational considerations;
- Airport Security benefits (or conversely, impacts)
- Planning level development/construction costs;
- Conformity with Level of Service criteria (if applicable);
- Flexibility and future expansion potential;
- Other factors identified by the BCAD.

Separate sets of screening criteria may be developed for specific analyses of the alternatives, or certain elements of the alternatives. Thus, there may be additional screening criteria identified and tailored for assessing specific elements of the alternatives and their characteristics.

Following the initial screening, a more detailed evaluation process would follow. While the ultimate evaluation criteria used will be reviewed and approved by BCAD, the following parameters are representative to the type and depth of evaluations to be undertaken:

Conformity with Design Standards and Requirements
The alternatives will be evaluated on their conformity with current FAA design standards, as well as resolution of any existing Modification of Standards (MOS). The focus of this comparison will be on the following factors:
Airfield design standards
Airspace surface clearance
Land uses within the RPZs

This task will also evaluate how well each alternative complies with the defined future airfield requirements. Other applicable factors regarding standards that may arise during the alternatives evaluation process will be included, as appropriate.

**Operational Evaluation**

R&A will evaluate the alternatives in terms of their operational performance for each of the Airport’s critical functional areas: airside, terminal and landside facilities. The operational evaluations for each functional area will focus on qualitative customer level of service metrics including the following:

- Airfield capacity
- Passenger wait times
- Passenger walking distances
- Gate utilization
- Landside level of service

**Phasing Analysis**

The ability of each alternative to be developed incrementally, with minimal disruption of FLL’s operations will be evaluated. A table will be prepared that presents the project sequence for each alternative. The sequence of significant projects will be based on preliminary constructability and operational impacts, inclusive of relocation projects and temporary facilities.

A high level phasing analysis tied to demand triggers associated with forecast activity levels will be completed for the alternatives. The phasing analysis will include considerations such as the ability to maintain minimum operational thresholds during improvements, availability of additional space or new sites for proposed facilities, and the timing of improvements to meet the incremental growth in forecast demand levels.

**Development Cost/Financial**

The financial evaluation of the eight alternatives, based on preliminary capital costs, phasing, and potential funding sources would be performed. For each alternative, the R&A Team will develop planning-level cost estimates to be used to evaluate the alternatives. The number of short-listed alternatives to be estimated will be as defined in Task II-2.2 through 2.6 as follows:

Where applicable, the R&A Team will utilize FDOT Statewide Average Unit Costs in developing estimates. In cases where such costs are not available, the R&A Team will establish unit costs based on experience with other comparable projects and with input from BCAD. The unit costs will be adjusted as necessary to account for inflation, economies of scale, access to materials, overall labor costs, accessibility of the site and project location, comparison with projects completed at other Florida airports, complexity of construction phasing, overall complexity of the project, and the duration of the project.
The R&A Team will work with BCAD staff to determine appropriate soft cost factors to be applied in the following key areas:

- Planning / Advanced Planning Costs – Planning / advanced planning costs are estimated based on an anticipated level of effort.
- Environmental Documentation Costs – Environmental documentation costs are estimated based on an anticipated level of environmental documentation effort.
- Design Costs – Design costs are generally estimated as a percentage of direct construction costs, depending on the complexity of the project.
- Indirect Allocation Costs – Costs such as program management, Owner’s Construction Insurance Plan (OCIP) or similar costs will be allocated to enable BCAD to capture some Airport Improvement Program funds for administration purposes.
- Contingencies/Management Reserves

The R&A Team will also establish percentage mark-ups for unquantified construction costs, which may include the following:

- General Conditions/Overhead costs
- Drainage costs
- Temporary erosion and sedimentation control costs
- Surveying costs
- Maintenance of Traffic (MOT) costs
- Mobilization and demobilization costs
- Contingency costs
- Construction management costs
- Environmental mitigation (permits) costs
- Hazardous material mitigation costs
- Utilities costs

**Exclusions:** Land Acquisition – The R&A Team will not include land acquisition costs within the cost estimates. Land acquisition extents and costs, if necessary, would be determined through additional planning and coordination with other agencies and owners when necessary.

The R&A Team will develop a high-level assessment of likely funding sources and affordability for each alternative, taking into consideration:

- The earliest potential implementation start date for each alternative
- The number of years that would be required to implement each alternative
- Project development costs (based on the proposed year of implementation)
This will entail the development of a plan of finance (i.e., short and long term financing, TIFIA, grant funding, PFC, etc.) to accommodate the project schedule.

II.3F Demand Allocation Strategies

In consultation with BCAD staff and key policy makers, demand allocation strategies will be formulated and documented for FLL and North Perry Airport (HWO). These strategies will define the primary roles of each airport as they relate to serving the County's current and future air transportation needs. This effort will also document how these demand allocation strategies may influence future facility and infrastructure development for each airport.

Given FLL's land constraints, as well as the County's sensitivities to their surrounding community, the defining of existing and future airport roles will influence the allocation of aviation activity to each airport. This will also dictate the level of facility development and infrastructure improvements necessary for each airport. The definition and selection of a preferred demand allocation strategy for Broward County's system of airports will be comprised of the following steps:

- **Documenting Existing Airport Roles** - The current role of Broward County's airports will be classified according to the various types of aviation demand that each airport currently accommodates. Such classifications may include, but are not limited to: scheduled air carrier, general aviation reliever, cargo, charter, corporate, military, flight training, and recreational. Research will also be conducted that will identify any potential local, County, or State regulations that could inhibit the ability to accommodate certain types of aviation activity at any of the airports.

- **Identification of Initial Demand Allocation Options** - In consultation with BCAD staff, a preliminary list of potential demand allocation options will be developed. The primary intent of these options would be to formulate an approach to accommodate the future facility needs to support Broward's air transportation needs that are projected through 2035. Up to three demand allocation options will be identified.

- **Evaluating Demand Allocation Options** - Each of the demand allocation options will be qualitatively evaluated independently. These evaluations would focus on each airport's location, existing infrastructure, and land availability. Consideration for collocated facilities due to the operational dependencies associated with the potential redistribution of aviation demand among the County's system of airports will also be given. The initial evaluation of demand allocation options will be summarized in a PowerPoint presentation to facilitate subsequent stakeholder coordination activities.

- **Stakeholder Coordination/Preferred Demand Allocation Option** - The selection of a preferred demand allocation option will involve consultation with various stakeholders. Although the level of stakeholder involvement will be dependent on the preferred demand allocation option, it is anticipated that no more than two stakeholder coordination meetings will be conducted, all of which will be performed at a location(s) within Broward County. R&A will prepare meeting agendas, sign-in sheets, briefing materials, and meeting notes for each stakeholder meeting.

- **Results Summary** - A PowerPoint presentation will be prepared that summarizes the results of this sub-task. A draft version of the PowerPoint will be prepared and reviewed with BCAD staff for review and comment. Once final comments are received, the PowerPoint will be finalized and submitted to BCAD in electronic format.
11.3G Selection of a Preferred Alternative
The R&A Team will utilize the information gathered, developed, and analyzed in previous subtasks to develop a complete evaluation matrix and select a preferred, integrated airfield, terminal, landside, support facility, and land use alternative that meets BCAD’s goals and objectives and future demand requirements.

The selection of the preferred alternative will be based on a combination of efforts including: summation of the evaluation criteria, supplemental analysis and evaluations, stakeholder input through the public involvement process, and BCAD’s preferences. Reasons for the selection will be clearly documented. The R&A Team will meet with BCAD to review preliminary results and gather BCAD comments. Two (2) rounds of refinements to the evaluation will be performed, and the results will be presented to the two advisory committees.

11.3H Prepare Alternatives Evaluation Chapter
An Alternatives Evaluation Chapter will be prepared summarizing the short, mid and long term FLL alternative and associated improvements. A preliminary draft version of the Alternatives Evaluation Chapter will be submitted to BCAD for review and comment. The BCAD review and comment process for the Alternatives Evaluation Chapter will incorporate two revision rounds; (1) preliminary draft for BCAD review and comment, and (2) final draft for BCAD review and comment. The second round of comments/revisions will be incorporated into the draft chapter and then remain until final comments are solicited at submission of the draft Master Plan Update Report.

Items of Work Not Included in Scope:
Advanced planning, programming, or preliminary engineering analyses. Alternatives will be detailed to a master plan level of definition, unless otherwise indicated in the scope of services (e.g. terminal improvements/enhancement options)

Supporting Sub-Consultant
ACAI Associates, Inc.
Kimley-Horn and Associates, Inc.

Data & Resources Required From BCAD or Other Parties
As specifically noted under the Scope of Services above

Deliverables
- Draft and Final versions of an Alternatives Evaluation Chapter in Microsoft Word and PDF format for BCAD review and comments
- Electronic deliverables prepared as part of this task including PowerPoint presentations, AutoCAD and GIS files
Overview and Scope of Services
R&A anticipates that during the evaluation of alternatives and selection of the preferred alternative, issues may be identified relative to the various factors evaluated (standards, operations, phasing, cost/affordability or other factors) that require further refinement. This task will focus on refining the preferred alternative to respond to any of the issues identified during the evaluation and selection process.

R&A will review the preferred alternative and refine or adjust elements as needed, based on results of previous tasks, in each of the following functional areas:

- Airfield (limited refinement expected)
- Terminal Area
- Landside and Transportation
- Support Facility Refinement, to ensure compatibility with the terminal and landside/transportation plan.

II.4A Refinements
This subtask will be completed in close coordination and consultation with BCAD staff and other stakeholders. It is important to recognize that a “preferred alternative” is defined for purposes of providing a basis for updating the Airport Layout Plan and to conduct further analyses (financial feasibility, etc.).

In addition, this subtask will serve to expand the level of detail and analysis provided for the preferred alternative. Additional detail will be provided relative to overall facility layouts, general layout of interior spaces, implementation impacts, costs and financial impacts, and sensitivity to alternate demand scenarios. As necessary, the preferred alternative will be refined to specific issues that may have been raised by BCAD staff or other parties during the evaluation and selection process. Variations of the selected long term alternative may be developed and analyzed utilizing the same evaluation criteria developed in the prior sub-task.

The refinement of the selected alternative will conclude with the preparation of an AutoCAD drawing depicting the following elements among others (configured as suggested by the selected development alternative):
II.4B BCAD Coordination

Drawings of the refined, preferred alternative will be developed in AutoCAD and submitted for BCAD review and comment. R&A will also work collaboratively with BCAD to identify final refinements in each of the functional areas. Refinement factors will be discussed in a working session during one (1) on-site meeting.

II.4C Intermodal Transportation Integration and Opportunities

The R&A Team will review relevant information, analyses and recommendations pertaining to intermodal connections with the intent of considering the need for accommodating a transit link/corridor into the terminal core area and incorporate this corridor and intermodal center into the refined, preferred alternative. The R&A Team will review planned assumptions for and coordinate with the following projects and responsible agencies to evaluate the opportunities to connect the Airport’s terminal facility to regional transit systems for passenger convenience, airport ground access, and access to airport facilities. These projects will include:

- The WAVE Streetcar System – Downtown Development Authority of Fort Lauderdale
- All Aboard Florida Intercity Rail Service – AAF/FECR
- The Tri-Rail Coastal Link Commuter Rail Service (interim and future service) – FDOT/SFRTA
- Airport/Seaport Automated People Mover – Broward County

Utilizing the demand/capacity analyses prepared for the terminal core landside facilities and BCAD controlled roadways, a high level assessment of the need for intermodal facilities will be articulated. This assessment will identify if intermodal connections in the terminal core, remote intermodal facilities (i.e.; consolidated rental car or remote parking), etc.) and/or airport people mover (APM) facilities should be considered to meet future demand and BCAD objectives.

The results of the demand/capacity analysis and development of baseline facility requirements for the terminal, landside and regional transportation network will be the foundation for assessing
intermodal transportation options at FLL. The R&A Team will identify the issues, opportunities and constraints of the existing parking, roadways, terminal curbs, rental car, and ground transportation service operations at FLL and identify ways these areas can be addressed in the context of the overall airport development program represented by the preferred alternative.

The R&A Team will prepare materials for a workshop with BCAD staff, and lead a workshop to discuss the findings of issues, opportunities and constraints for intermodal transportation at FLL. The results of this workshop will be used to document intermodal needs and opportunities within a PowerPoint presentation.

II.4D Prepare Preferred Alternative Chapter

A Preferred Alternative Chapter will be prepared summarizing the short, mid and long term FLL program, represented by the preferred alternative. A preliminary draft version of the Refinement of Preferred Alternative Chapter will be submitted to BCAD for review and comment. The BCAD, FDOT, and FAA review and comment process for the Preferred Alternative Chapter will incorporate two revision rounds; (1) preliminary draft for BCAD review and comment, and (2) final draft for BCAD review and comment. The second round of comments/revisions will be incorporated into the draft chapter and then remain until final comments are solicited at submission of the draft Master Plan Update Report.

Items of Work Not Included in Scope:
Schematic or Conceptual Design

Supporting Sub-Consultant
Lea+Elliott, Inc.
Kimley-Horn & Associates, Inc.
Acai Associates, Inc.

Deliverables

- Refined Preferred Alternative in Autocadd and PDF Formats
- Draft Refinement of Preferred Alternative Chapter in Microsoft Word and PDF format for BCAD review and comments
- Final Draft Refinement of Preferred Alternative Chapter in Microsoft Word and PDF format for BCAD review and comments
- Electronic deliverables of the PowerPoint presentation summarizing the results of the Intermodal integration, needs and opportunities assessment
Overview and Scope of Services

In order to establish a Capital Improvement Program (CIP) that can be realistically implemented, the capacity needs for FLL, as well as its ongoing maintenance and existing facility rehabilitation needs must be considered. Therefore, the CIP review will include a collection of projects that increase or improve the capacity, operational efficiency, and/or processing capabilities of FLL’s airfield, terminals, landside facilities, general aviation facilities, cargo facilities, and other airport or airline support areas which are necessary to accommodate future demand levels and types. These projects will be identified through the master planning analysis described in the previous tasks. In addition, the CIP will also reference and recognize those projects that are intended to improve existing airport deficiencies, enhance passenger/product processing and circulation, or restore the physical condition of existing facilities and infrastructure at each airport.

The short-term (5-year), mid-term (10-year), and long-term (20-year) CIP’s will be developed following the refinement of the preferred airport enhancement alternative. The CIP will define facility development consistent with those specified in the Demand/Capacity and Requirements analysis. However, the implementation for these facilities will be linked to triggers of activity rather than specific timelines. This will ensure that facility development is initiated and implemented consistent with the demand for such facilities.

A more detailed description and summary of the various subtasks included in the formulation of FLL’s CIP are provided below.

II.5A Establish Preliminary CIP Project Priorities and Sequencing

BCAD staff will provide a summary of the current CIP needs and priorities for FLL. In consultation with BCAD staff, each project in the recommended development plan (i.e. the preferred alternative) will be assigned to a particular planning term (short term, intermediate term, or long term). Each project will be individually described in sufficient detail to describe the nature and purpose of the project, identify potential conflicts with other projects, identify projects that must occur to enable completion, and justification for the project (i.e. the type of information required in the Joint Automated Capital Improvement Project module hosted by the FAA and FDOT).

II.5B Prepare Short, Mid and Long Term Plan

A preliminary CIP implementation plan will provide BCAD, FDOT, and FAA with the information needed to integrate the Master Plan Update’s recommendations with daily FLL operations and other on-going development projects. This will be particularly important in regard to the 5-year Capital Improvement Plan (CIP). The CIP implementation plan will balance funding constraints, project
sequencing limitations, environmental processing requirements, agency and tenant approvals and coordination processes, business issues (leases and property acquisition or disposition), and other BCAD preferences.

R&A will prepare a preliminary timeline for the short, mid and long term CIP based on the demand forecast and recommendations proposed in the Master Plan Update. The analysis will focus on the determination of the following key pieces of information:

- When must a given improvement be completed in order to meet the anticipated demand or to provide improved operational efficiency
- How long will it take to implement the improvement
- What enabling projects must be implemented as part of the improvement

Project phasing will take into consideration enabling projects or actions that affect the sequence of construction. The time required to implement a given improvement will be based on schedule data from recent projects at FLL and industry standards.

R&A will prepare a phasing timeline of major elements in Microsoft Project format. Phasing drawings will also be prepared in AutoCADD for the short, mid and long term planning horizons.

II.5C  Prepare Rough Order of Magnitude (ROM) Cost Estimates
Cost estimates will be prepared for each project in the recommended CIP for the 20-year planning horizon, with additional detail provided for the initial near-term 5-year projects. The cost estimates will be provided on an item of work basis. The estimates will be prepared with sufficient detail to provide the level of confidence expected for use in BCAD’s financial planning, capital programming, and CIP implementation initiatives.

II.5D  Update CIP Implementation Schedule
In this sub-task, R&A will update the preliminary phasing/implementation timeline and the capital expenditure plan to take into consideration the findings of the financial and environmental evaluations conducted in separate tasks.

The financial feasibility analysis and the input from the environmental strategy analysis could result in changes to the timing, or length of various elements of the program as defined in the preliminary implementation plan. The results of those tasks will be integrated into the preliminary implementation plan to arrive at the final implementation plan.

Phasing drawings for the short, mid and long term planning horizons will be updated. The final phasing plan will be used to develop the Airport Layout Plan (ALP) drawings in a subsequent task.

II.5E  Develop Airport Management CIP Implementation Guide
R&A will prepare a guide that will serve as a day-to-day tool for BCAD staff in the management and implementation of the CIP projects, including an overview of demand metrics that will help BCAD determine whether and when industry or activity changes necessitate a modification or timing adjustment in the CIP. The guide will also provide project description, project narrative, and project justification verbiage within CIP project sheets that identify the work scope for the project, hard and soft costs, and the project dependencies associated with the development, relocation, or replacement
or physical facilities as well as regulatory requirements that must be satisfied. This information will also be helpful to BCAD for incorporating the resulting CIP projects proposed in the Master Plan Update onto FLL’s JACIP module.

**Items of Work Not Included in Scope:**
Programming diagrams or conceptual design drawings or specifications.

**Supporting Sub-Consultant**
Craven Thompson & Associates, Inc.
Acai Associates, Inc.

**Data & Resources Required From BCAD or Other Parties**
Existing CIP for FLL

**Deliverables**
- Draft Airport Management CIP Implementation Guide that will serve as a stand-alone document from the master plan documentation in Microsoft Word and PDF format for BCAD review and comments.
- Final Airport Management CIP Implementation Guide that will serve as a stand-alone document from the master plan documentation in Microsoft Word and PDF format for BCAD review and comments.
Overview and Scope of Services
The objective of this task is to provide a preliminary review of potential environmental features and resources in the immediate Airport vicinity that could impact or influence the location, configuration, or viability of the preferred Alternative. The following tasks comprise the qualitative assessment that is appropriate for master planning per FAA guidelines.

II.6A Environmental Overview of Preferred Alternative
Per the guidance provided in the FAA Advisory Circular 150/5070-6B Change 1, Paragraph 905, the selection of an Airport sponsor’s preferred alternative will usually be based on a combination of efforts that includes the environmental evaluation that is part of the alternative evaluation criteria. The principal objective of this task is to gather information and data on the potential environmental impacts identified with the preferred alternative.

The focus of this task will be on the identification of any known wetland areas, identified hazardous materials or contaminated sites, determination from existing data sources of any endangered or threatened species in the Airport vicinity, and archeological or historic resources.

Future noise contours are not included in this scope of work. It is anticipated that any required or desired noise contours would be prepared by the Part 150 Study consultant, to be retained independently through a separate contract, but anticipated to be under contract while the Master Plan Update is being undertaken. R&A would provide the necessary information (e.g. forecast and fleet mix data) that would be necessary for the development of noise contours by the Part 150 Study consultant.

II.6B Environmental Strategy
The evaluation of potential environmental issues will identify, as best possible, if the elements of the preferred alternative would require environmental processing as independent actions or dependent actions and what level of NEPA analysis would be needed (a Categorical Exclusion, Environmental Assessment, or Environmental Impact Statement). Consideration will also be given to the appropriate Florida environmental regulations.

FAA Advisory Circular 150/5070-6B Change 1 (May 1, 2007) Airport Master Plans, Paragraph 905, Selection of a Recommended Alternative.
II.6C Airport Recycling, Reuse, and Waste Reduction Plan

Section 113 of The FAA Modernization and Reform Act of 2012 (FRMA) requires airports that receive Airport Improvement Program (AIP) funding for a new or updated master plan to address issues related to solid waste and recycling. On September 30, 2014, the FAA issued guidance on developing an Airport Recycling, Reuse, and Waste Reduction Plan for airport’s preparing master plans and other sustainability plans.³

The FAA defines the term recycling in its 2014 guidance as any program, practice, or opportunity to reduce the amount of waste disposed of in a landfill. The Airport has a longstanding recycling program that includes tracking performance data on waste/recycling and an on-site waste sorting and separation facility. Furthermore, Broward County operates a waste-to-energy facility, so it is assumed that minimal waste from the Airport is sent to landfills (e.g., that waste that cannot be processed at the County’s waste-to-energy facility). Therefore, R&A will prepare an Airport Recycling, Reuse, and Waste Reduction Plan that documents the Airport’s current waste and recycling practices, recycling initiatives, and recycling/waste minimization goals; will coordinate with staff to identify planned enhancements to the waste management program; and will integrate considerations of the Airport’s waste and recycling program into the master plan, where applicable (e.g., alternatives analysis, identification of future facilities needs to support the program, and recommendations to incorporate recycling considerations into future development).

Assumptions:

- BCAD’s long-standing waste and recycling program already achieves much of the intent of an airport recycling, reuse, and waste reduction plan as defined in the FAA’s guidance.
- R&A will conduct an on-site interview with BCAD staff leading the Airport’s waste and recycling program to compile existing information on waste and recycling. The on-site interview will include a facility walk-through.
- BCAD will provide documentation on the Airport’s existing waste and recycling program, as available, including data and information such as annual quantities of waste by waste stream, program costs, policies and procedures, results from previous waste audits, future plans, and current opportunities and challenges.

II.6D Prepare Environmental Overview Chapter

A preliminary draft version of the Environmental Overview Chapter that describes the findings of the environmental analysis for the preferred alternative that includes, maps, diagrams, tables and text will be submitted to BCAD for review and comment. The BCAD review and comment process for the Environmental Overview Chapter will incorporate two revision rounds; (1) preliminary draft for BCAD review and comment, and (2) final draft for BCAD review and comment. The second round of comments/revisions will be incorporated into the draft chapter and then remain until final comments are solicited at submission of the draft Master Plan Update Report.

Assumptions and General Comments:
It is assumed that the R&A Team, as the master plan consultant, will not be preparing noise contours or other noise analysis that are anticipated to be within the scope of work for the Part 150 Update Study.

Items of Work Not Included in Scope:
Future noise contours are not included in this scope of work.

Supporting Sub-Consultant
Kimley-Horn & Associates, Inc.

Data & Resources Required From BCAD or Other Parties
Airport Land Use Plan

Deliverables
- Draft and Final Airport Recycling, Reuse, and Reduction Plan in editable Microsoft Word format and PDF
- Draft Environmental Overview Chapter in Microsoft Word and PDF format for BCAD review and comments
- Final Draft Environmental Overview Chapter in Microsoft Word and PDF format for BCAD review and comments
- Electronic deliverables prepared as part of this task including PowerPoint presentations, AutoCAD and GIS files
Overview and Scope of Services
The objective of this task is to develop a sustainability initiatives framework for BCAD that coincide with the goals and objectives of the overall Master Plan Update. The level of detail of this plan will be conceptual in nature and compliant with FAA master planning guidelines and best practices.

II.7A Data Collection and Benchmarking
The R&A Team will conduct research on programs that have been implemented by other airports, nationally and globally, to improve environmental quality. Programs will be analyzed based upon past success and their applicability to FLL, given the climate, environmental challenges, and characteristics of FLL’s operations.

II.7B Formulation of Sustainability Initiatives
As a result of the research conducted under the previous subtask, R&A will develop recommendations for innovative, yet proven, technologies and operational practices, tailored to the needs of FLL. The strategies identified under this task will be prioritized, based upon estimated cost-effectiveness and implementation feasibility. Also included would be a list of options that could be incorporated into the preferred alternative, and identify the regulations that would be required to implement any of the selected sustainability initiatives.

Initiatives for implementation will include a list of achievable short-term, quick and measurable benefits, and long-term strategies in environmental quality and energy savings to continue environmental benefits well into the future. Through this subtask, R&A will identify strategies for maintaining or exceeding regulatory compliance, while simultaneously improving environmental quality and reducing operating costs. It is anticipated that plans for the following individual environmental resource categories will be developed:

- Air Resources
- Water Resources
- Land Resources
- Noise Management
- Waste Management
- Energy Management
The Draft Sustainability Initiatives Overview will be circulated to stakeholders upon BCAD approval allowing each a set amount of time to review the Draft Sustainability Initiatives Overview and submit written comments.

II.7C Prepare Final Sustainability Initiatives Overview
Comments will be collected and the Sustainability Initiatives Overview will be finalized based on the direction of BCAD Staff and feedback from stakeholders, as appropriate. The Final Sustainability Initiatives Overview will then be distributed to BCAD and all interested parties/stakeholders.

II.7D Prepare Sustainability Initiatives Chapter
A Sustainability Initiatives Chapter will be prepared summarizing the data collection and benchmarking efforts and the sustainability plan for FLL. A preliminary draft version of the Sustainability Initiatives Chapter will be submitted to BCAD for review and comments. The BCAD review and comment process for the Sustainability Initiatives Chapter will incorporate two revision rounds; (1) preliminary draft for BCAD review and comment, and (2) final draft for BCAD review and comments. The second round of comments/revisions will be incorporated into the draft chapter and then remain until final comments are solicited at submission of the draft Master Plan Update Report.

Items of Work Not Included in Scope:
Full Sustainability Master Plan or Management Plan per FAA’s 2010 interim guidance

Supporting Sub-Consultant
None

Data & Resources Required From BCAD or Other Parties
As specified in Scope of Services above

Deliverables
- Draft Sustainability Plan Chapter in Microsoft Word and PDF format for BCAD review and comments
- Final Draft Sustainability Plan Chapter in Microsoft Word and PDF format for BCAD review and comments
- Electronic deliverables prepared as part of this task including PowerPoint presentations, AutoCAD and GIS files
Overview and Scope of Services

The purpose of this task is to update the complete Airport Layout Plan (ALP) drawings set using data collected from the Master Plan Update tasks, and depict the preferred alternative phasing plan as the future condition of FLL for submittal to the FAA.

This task addresses the requirement for an ALP to incorporate the preferred Master Plan Update alternative. The following elements of the existing ALP drawing set are anticipated to be updated:

- Existing Airport conditions and safety areas will be updated according to the base mapping generated for the Master Plan Update.
- Future projects on the future ALP will be transferred and adjusted as needed onto the new base mapping, with the direction of BCAD staff.
- Future facilities identified through the Master Plan Update will be included in the Future ALP, Inner Portion of Approach Surface Drawings, and Departure Surface Drawings portion of the plans set.
- All data on the Airport data sheet will be updated based on eALP data collected in Phase I and supplemented with FAA data sources, additional data needs will be coordinated in conjunction with BCAD staff.
- Airport Property Information will be based on the existing data found in the current ALP, additional/updated property information will be provided by BCAD.
- Airspace obstruction evaluations will be updated according to the data gathered in Phase I. Surfaces to be analyzed include the following:
  - FAR Part 77,
  - 40:1 Departure Obstacle Clearance Surface,
  - 62.5 One Engine Inoperative Obstacle Identification Surface, and
  - Threshold Siting Surfaces.
- Plan and Profile drawings will be updated to include new survey information, including the development of new composite ground profiles based on updated ground contour information.
- New FAR Part 77 Airspace Surfaces will be generated according to the updated survey information collected in Phase I.
- On and Off-Airport Land Uses will be updated as needed and significant alternations in the plans will be based on previous planning studies as directed by BCAD staff.
- Notations and text will be adjusted for legibility.
- Title Blocks and drawings notes will be updated to reference the new survey information and revision dates modified as needed.

Draft ALP drawings will be provided to BCAD staff as the update progresses to ensure the developing product meets the expectations of BCAD. Three (3) reviews of a complete draft of the ALP set by BCAD staff are anticipated prior to FAA submittal in order to safeguard quality assurance of the ALP. The R&A Team will revise drawings and analyses according to the BCAD reviews. The R&A Team will review any FAA comments received on the ALP and assist BCAD through the FAA approval process.

R&A will prepare the FAA ALP Review Checklist in ARP SOP 2.00 (http://www.faa.gov/airports/resources/sops/media/arpSOP200ALPReview.pdf) and a summary narrative to accompany the ALP sheets.

Upon FAA approval of the paper ALP set, the R&A Team will update the future eALP safety critical elements and submit it to the FAA portal.

**Items of Work Not Included in Scope:**
None, unless otherwise noted

**Supporting Sub-Consultant**
None

**Data & Resources Required From BCAD or Other Parties**
Existing ALP Set in AutoCAD format

**Deliverables**
AutoCAD files will be structured according to the Airport's layering standards. Horizontal datum within the drawings will be located in the Florida State Plan, East Zone (NAD 83, US Survey Feet), while vertical datum will adhere to NAVD 88. ALP drawing sheets will be set up to utilize paper space layouts for ease of reproduction.

The following ALP Sheets comprising the existing ALP will be updated:
- Title Sheet
- Existing Airport Layout Drawing
- Future Airport Layout Drawing
- Airport Property Map
- Airport Data Sheet
- Future Terminal Area Plan
- General Aviation Cargo Area Plan
- Runway Profiles
- Inner Portion of Approach Surface
- Airspace Plan (Outer)
- Airspace Plan (Inner)
- On-Airport Land Use Plan
- Off-Airport Land Use Plan

The following additional drawings are anticipated to be a requirement of the future ALP Update:
- Inner Portion of Approach Surface Drawing for future runway
- Departure Surface

The updated ALP Sheets will be provided in the following formats once the product has been accepted by BCAD:
- PDF files
- AutoCAD files (version 2004 or later)
- Ten (10) full sized Draft hard copies and six (6) Final copies, for submittal to FAA. Up to six (6) additional copies for BCAD. Two hard copies of the FAA approved ALP set will be submitted to FDOT Central Office.

The SOP checklist and narrative will accompany the ALP set.
Overview and Scope of Services
The purpose of this task is to identify the funding sources available to support the planned CIP for FLL and to determine the financial feasibility of BCAD undertaking and implementing its planned capital program. Financial feasibility will be measured by evaluating the financial impacts on projected airline rentals, fees, and charges; the debt service coverage ratio for existing and projected future general airport revenue bond debt; the resultant cost per enplanement to the airlines serving FLL; and the required BCAD discretionary cash to support projected capital development. Potential funding sources for the planned capital development may include, but not be limited to: federal grants, both entitlement and discretionary; state grants; passenger facility charges (PFC), both on a pay-as-you-go basis and leveraged basis; general airport revenue bonds; BCAD funds; and other, which may include third-party financing, special facility financing, etc. The determination of the preferred funding source strategy will be based, in part, on the availability of each funding source; market conditions and the ability of BCAD to access any particular source; financial impacts to the airlines serving FLL; and BCAD policies and preferences.

This financial analysis will provide BCAD with an approach to implementing FLL’s proposed CIP in a financial feasible manner that is affordable to both BCAD and the airlines serving FLL. The financial analysis will be developed for both “Base” and “Low” growth aviation activity projections, to measure the financial impacts of the planned capital expenditures in both situations. Financial analysis will be accomplished as an underlying and ongoing effort throughout the master plan study to ensure that the preferred alternative and recommended plans for accommodating growth over the planning horizon are financially feasible with an acceptable impact on airline rentals, fees, and charges. Steps include:

- Develop reasonable assumptions for federal funding, passenger facility charge funding, customer facility charge funding, state grants, other government agency grants, potential third party/other funding
- Develop reasonable projections of operating revenues, expenses, and other obligations based off of most current budget or actual data for FLL.
- Determine with BCAD staff what potential increases in tenant/user fees associated with future projects would be acceptable (based on CPE goals, debt per passenger goals, etc.)
- Analyze the potential to borrow funds for future capital projects and develop reasonable assumptions for the financing capacity analysis (based on meeting goals and requirements of governing bond documents)
• Develop a reasonable/defensible range of affordable funding sources for future capital projects (with a base case and low case)

Assumptions and General Comments:
BCAD will provide R&A its financial/rates and charges model in order for R&A to develop the multi-year financial projections necessary. With regards to identifying the plan of finance for each CIP project, R&A will work with BCAD in the evaluation of alternatives to arrive at the preferred funding options that best support BCAD’s goals and objectives. In addition, R&A will work with BCAD in the development of the financial projections for both operating and maintenance expenses and nonairline revenues. If BCAD has already developed projections for future expenses and revenues, R&A will review and validate these projections for use in this financial analysis.

Items of Work Not Included in Scope:
Rates and charges modeling

Supporting Sub-Consultant
None

Data & Resources Required From BCAD or Other Parties
The latest rates and charges model incorporating the financial information for the most current fiscal year.

Deliverables
A working paper, supplemented with tables and other supporting graphics, that documents the financial related analyses will be prepared. A draft working paper will be submitted to BCAD for review and comment. The working paper will ultimately be incorporated into the final Master Plan Update for FLL.
Overview and Scope of Services
The purpose of this task is to develop the iALP and the Joint Automated Capital Improvement Program (JACIP) tools for the FLL Master Plan Update, to assist BCAD staff in the management and maintenance of airspace data, and the submittal of CIP project data to the FDOT’s Florida Aviation Database (FAD).

II.10A Incorporation of Airports GIS Attribution Tool in iALP/ AutoCAD
The attribution section of AC 150/5300-18C will be reviewed with BCAD staff to provide a good understanding of the non-graphic data requirements that need to be collected as part of the AGIS effort in a separate task. Any attribution data deemed not accessible and/or non-existent will be documented and identified to the FAA. If additional attribution data is needed, it will also be documented.

Attribution tools that include the AC 150/5300-18C standard tables both in the AutoCAD Map and iALP environments will be made available to BCAD. The table definitions may be expanded if required for additional attribution data that will be useful in other applications besides the mandated FAA requirements. The R&A Team will implement the AutoCAD Map and iALP attribution edit tools and program any additional fields to the tools to accommodate BCAD requirements. This feature will provide BCAD staff an easy to use tool to maintain the attribution data by all departments that will automatically reside in one database.

II.10B Acquire/Share Other Sources of Data Required & Conduct Obstruction Analysis
On top of the Airports GIS data collected, other sources of data that will be reviewed are the National Flight Data Center’s (NFDC) National Airspace System Resources (NASR) data (FAA’s main source of airport data to include facility, runway, etc.), NGS’s Digital Obstruction File (DOF), Obstruction Chart (OC), OE/AAA proposed development both on and off airport, any new facility data and plans from any master planning data. Also, any County legacy CAD and GIS data (properties, utility, planimetric, planned, etc.) will be converted to GIS format as per the standards and incorporated into the iALP. This will include the verification of these data sources to identify questionable data in terms of accuracy and purpose.

Once the new obstruction points have been mapped (in a separate task) as per FAA Advisory Circulars (AC) 150/5300-16, 17b and 18C, these points will be utilized to process penetrations to Part 77, TERPS and OEI surfaces already included into the iALP. Analytical reports, AutoCAD and Google three-dimensional graphics will be developed for discussions with BCAD. Any penetrations to the TERPS and Part 77 surfaces that need to be mitigated will be discussed with BCAD prior to
FAA submittal. Final understandable and useful graphics will be provided to BCAD for use in obstruction clearing along with a maintainable database within the iALP. In addition the Part 77.19 penetration will be developed and utilized for the ALP airspace sheets development.

II.10C Identification and Approval of Planned Data to be Incorporated

After the completion of the existing base data files, meetings with BCAD will be conducted to identify the planning data to be incorporated. It is the goal of this task to meet with BCAD to identify and determine which planned projects are to be included for this ALP effort. As a minimum the permanent projects that have been FAA reviewed and approved through the Non-Rule Action (NRA) process will be extracted from the FAA’s OE/AAA system. Discrepancies on any previous planning efforts will be identified and corrected. All final data approved will be posted to the existing iALP.

II.10D Incorporation of CIP Data into the iALP/JACIP

In Phase I, prior to determining the Master Plan Update projects, the R&A Team will gather existing data from the Airport’s approved CIP, and format it for use in Florida DOT’s Florida Aviation Database (FAD) and the Joint Automated Capital Improvement Program (JACIP). The R&A Team will also develop capability for tracking of project and funding information by BCAD staff.

II.10E Develop Future iALP and Update JACIP

After FAA approval of the ALP Set, the R&A Team will update the iALP created in the prior tasks to reflect the future development program at FLL. CAD and GIS data will be created from the ALP Set files and other electronic data generated as part of the Master Plan Update. All final data approved will be posted to the iALP.

All final Master Plan Update CIP project data that is approved will be formatted for use in Florida DOT’s Florida Aviation Database (FAD) and the Joint Automated Capital Improvement Program (JACIP).

Items of Work Not Included in Scope:
None, unless otherwise noted

Supporting Sub-Consultant

None anticipated at this time, however, a specialty firm for completing this task may be considered and added at a future date with the BCAD and the County’s concurrence

Data & Resources Required From BCAD or Other Parties

As specified within the scope of work outlined for this task

Deliverables

- iALP/AutoCAD MAP/GIS and attribute tools implementation
- Analytical reports of any penetrations to any surfaces
- AutoCAD 3D graphics of penetrations
- Google 3D data files of penetrations
- Population of iALP obstruction database
- Part 77 obstruction data set for use on the ALP Part 77 sheets
- iALP planned vector and attribution ALP data
- JACIP compatible project file for upload
- ACIP Web-Based program
Overview and Scope of Services
Master Plan Update Reports involve all previous working papers/chapters and comments provided by
BCAD, FDOT, and the FAA into a single technical report that summarizes the results of the master
planning process. In addition, an executive summary will be produced that highlights the master plan
effort and will also present a clear summary of the improvements needed at FLL. Preliminary drafts
each will be provided to BCAD for internal review and comment. After BCAD reviews the draft
document and provides final comments, R&A will prepare the Final Draft Master Plan Update
Reports for FDOT and FAA review and comment. R&A will then respond to, and incorporate the
comments into a final Master Plan Update Report that includes both the technical report and
executive summary.

II.11A Technical Report
This task will involve incorporating all of the previous working papers/chapters and the comments
provided by BCAD, FDOT, FAA, and others into a single technical document that summarizes
process, assumptions, methodologies, and results of the Master Plan Update. Electronic copies of the
technical report will be provided to BCAD, FDOT, and FAA for review. Following BCAD, FDOT,
and FAA approval, an electronic version of the report will be provided to BCAD. The Technical
Report will include all applicable exhibits, attachments, and appendixes and will be indexed by
chapter. BCAD will ultimately responsible for the dissemination of copies of the Master Plan Update
documents to appropriate parties.

II.11B Executive Summary Report
After completion of the final draft of the technical report, R&A will prepare a 10 to 15 page
executive summary chapter. The executive summary will highlight the major results from the Master
Plan Update and present a clear summary of the improvements proposed for FLL.

The costs/budgets for printing the Technical Report or the Executive Summary have not been
included in the FLL Master Plan Update budget provided by the R&A Team due to the uncertainty of
the amount of printing (in terms of original pages to reproduce, and the number of copies desired)
FORT LAUDERDALE-HOLLYWOOD INTERNATIONAL AIRPORT

Master Plan Update – Scope of Services

PHASE II

Task II.12 – Stakeholder Engagement and Public Outreach Program Implementation

Overview and Scope of Services

In this task, the R&A Team will implement the approved elements of the Stakeholder Engagement Strategy and Public Outreach Program developed under a separate Phase II task. The effort scoped herein will focus on the public and external stakeholder groups. Outreach to internal stakeholders is scoped in the Project Management and Coordination task.

Activities related to Program implementation include:

- Schedule and coordinate logistics for stakeholder meetings according to the identified forum and vehicle for each group (i.e. public meetings, workshops, individual meetings, etc.) – for budgeting purposes, it has assumed that Phase II of the FLL Master Plan Update will include: (a) up to two, 3-hour public meetings, which each meeting being attended by R&A’s Officer-in-Charge, R&A’s Project Manager, one technical specialist/subject matter expert from R&A, and up to two non-R&A individuals from the R&A Team; (b) up to three (3) Project Advisory Committee and three (3) Technical Advisory Committee meetings (assumed to meetings with both Committees would occur in the same day), with each meeting having a 2-hour duration and assumed to be attended by R&A’s Officer-in-Charge, R&A’s Project Manager, one technical specialist/subject matter expert from R&A, and up to one non-R&A individual from the R&A Team; (c) one, 4-hour (half day) workshop meeting being attended by R&A’s Officer-in-Charge, R&A’s Project Manager, one technical specialist/subject matter expert from R&A, and up to two non-R&A individuals from the R&A Team; and (d) up to six (6) individual meetings, with each meeting having a 1.5-hour duration and assumed to be attended by R&A’s Officer-in-Charge and R&A’s Project Manager (or alternately, in lieu of the project manager, these meetings could be attended by one technical specialist/subject matter expert from R&A or from another Team member firm, along with R&A’s Officer-in-Charge). However, these assumptions are simply for budgeting purposes, the resulting hours and budget will be compiled within the budget allowance for this task and utilized by BCAD at its discretion, as a time and materials budget. Thus, BCAD may decide to have more or less of any meeting or workshop type described above. They may also choose to not undertake one or more of the meeting or workshop sessions noted above, and may decide to not fully exhaust the budget established for this task.

- Develop a stakeholder database or contact list

- Contact stakeholders accordingly to invite them to participate in meetings, forums and other media

- Develop agenda and communication materials and messaging relevant to each stakeholder group in close coordination with BCAD
- Identify, engage and include relevant team members for appropriate participation for each stakeholder meeting and venue
- Conduct stakeholder events and meetings with a focus on interactive dialogue to encourage meaningful input
- Document and record comments, questions and other feedback from each meeting and event
- Summarize findings and key trends from outreach initiative

Assumptions and General Comments:
The budget established for this task is meant to be flexibly utilized at BCAD’s discretion in order to maximize the value of the Stakeholder Engagement and Public Outreach Program formulated for the FLL Master Plan Update

Items of Work Not Included in Scope:
Transportation, parking or meals for participants of these meetings/workshops.
Expenses for advertisement of meetings/workshops

Supporting Sub-Consultant
Varies depending on the subject matter and topics identified for each meeting or workshop

Data & Resources Required From BCAD or Other Parties
List of Stakeholders desired by BCAD for participation in each meeting or workshop.

Deliverables
- Final meeting schedule
- Database/contact list of stakeholders
- Meeting support materials (presentations, handouts, etc.)
- Meeting minutes and related documentation from events
FLL Scope of Work Lump Sum Breakdown

**Phase I**
1. It is anticipated that Phase I will be completed 12 months after Notice to Proceed (NTP). A detailed schedule for Phase II will be completed as part of Phase I subsequent to NTP.

2. Total negotiated lump sum fee for Phase I is $1,255,720.00

**Phase II**
3. It is anticipated that Phase II will be completed 24 months after the completion of Phase I

4. The total negotiated lump sum fee for Phase II is $2,164,092.00

Total negotiated lump sum for all phases of the FLL Master Plan Update is $3,419,812.00
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NORTH PERRY AIRPORT

Master Plan Update – Scope of Services

PHASE I

Task I.1 – Project Management and Coordination

Overview and Scope of Services
Ricondo & Associates, Inc. (R&A) will serve as the Prime Consultant for North Perry Airport’s (HWO’s) Master Plan Update and will assume the lead responsibility for the timely, high quality delivery of the Master Plan Update deliverables, as well as the underlying technical analyses in accordance with the contractual requirements specified in the Agreement between R&A and Broward County for this assignment. R&A will oversee and manage the work performed by our various subconsultant team members (collectively referred to as the R&A Team), and provide direction and guidance as necessary to ensure consistency among the team’s study activities and work products.

A more detailed description and summary of the project management and project coordination activities that will be provided by R&A as part of this initial phase of the HWO Master Plan Update are provided below.

I.1A R&A Team Coordination Meeting
Monthly in-person or teleconference coordination meetings will be held among the team members to review the status and progress of each task, schedule and budget performance. A maximum of six (6) meetings or teleconferences are anticipated in Phase I of the HWO Master Plan Update.

I.1B Study Tasks Initiation Meetings
Task initiation meetings will be held at the commencement of each key study task. These meetings will include representatives from BCAD, R&A (and, if appropriate, other firms from the R&A Team), and other key personnel or stakeholders as required or as suggested by BCAD. The purpose of these meetings will be to review and validate proposed methodologies, assumptions, task inputs, scope content and exclusions, task schedule and key milestones, and specific data requirements. These meetings may be held in-person or via teleconference. It is anticipated that there will be a maximum of three (3) task initiation meetings or teleconferences in Phase I of the HWO Master Plan Update.

I.1C Client Working Sessions
It is anticipated that there will be a maximum of two (2) working sessions with BCAD in Phase I of the HWO Master Plan Update. The purpose of these working sessions is to have interactive discussions or brainstorming sessions among R&A, members from the R&A Team as appropriate, and BCAD in a collaborative setting rather than a more formal briefing environment.

I.1D Formulation of Master Plan Update – Phase I Schedule
R&A will prepare a preliminary detailed schedule for Phase I of the HWO Master Plan Update using Microsoft Project for BCAD’s review and comment immediately following the Notice to
Proceed/Consultant Work Authorization. Revisions will be made based on BCAD's comments for further discussions with the Florida Department of Transportation (FDOT) and the Federal Aviation Administration's (FAA's) Airports District Office (ADO) – both of which are anticipated to be funding partners for the Master Plan Update. A second draft schedule will be prepared and submitted to BCAD for review and comment. Upon BCAD's review, a third and final schedule will be prepared and submitted for BCAD approval. R&A will coordinate with all team members as necessary on the schedule for their participation relative to their defined roles. During the course of the project, R&A will monitor and maintain the schedule, and if necessary, will issue adjustments as required.

I.1.E   Formulation of Study Advisory Committees

Working with the BCAD staff, a committee structure will be defined to participate and provide guidance throughout the master planning process. It is anticipated that two (2) committees will be formed. Each committee will perform a distinct role, but will serve to complement or supplement the input provided by the other committee.

- **The Policy Advisory Committee (PAC)** is anticipated to be comprised of BCAD senior management staff as well as key stakeholders and policy makers. This Committee will provide input to the planning team on macro-level policy issues, considerations, near-term and long range aviation goals of the County, and other factors that shape or affect the role of each airport in the County, as well as facility or operational needs that will affect the diversity and breath of analyses undertaken in the master planning process. It will also provide valuable input regarding community issues and concerns relating to the Airport system and the airport's relationship to the overall community and individual municipalities.

- **The Technical Advisory Committee (TAC)** will be geared toward review of the master planning analyses and its various tasks from a technical perspective. It is anticipated that this committee will include BCAD staff from various divisions, the Florida Department of Transportation (FDOT), the Metropolitan Planning Organization (MPO), City and County Community and Transportation Planning Agencies and the Federal Aviation Administration (FAA) including the regional office, the Air Traffic Control, Airport tenants, and other key Airport users. This committee will review and comment on the technical and operational analyses and recommendations.

Meeting allowances for interacting with the PAC and TAC is included within the overall scope and budget established for the Stakeholder and Public Engagement/Outreach task.

I.1.F   FAA and FDOT Grant Support and Coordination

R&A will assist BCAD with coordination regarding FAA and FDOT grants for the HWO Master Plan Update. The following activities will be conducted:

- Submittal of the HWO Master Plan Update scope of work, budget, and schedule to FAA and FDOT, or independent consultant, as requested by BCAD.

- Respond to comments from FAA, FDOT, and/or independent consultant on scope of work, budget, and schedule.

- Up to three (3) teleconferences to discuss comments and/or R&A's response to comments.
1.1G BCAD/R&A Team Data Exchange Platform

R&A will work with BCAD to define a platform (site) for exchanging electronic data files and deliverables throughout the HWO Master Plan Update. The site will be used exclusively for uploading and downloading data files. The site will be password protected.

1.1H Master Plan Update Web Page

The Broward County Office of Public Communications and BCAD Public Information Office leads the design, development and maintenance of all public media including the County’s website, social media and other public communication media. As such, R&A will work closely with these County and BCAD offices by developing and providing project specific content and related materials for the website and other public media. Anticipated support responsibilities include:

- Develop key messaging with input and collaboration from internal stakeholders (i.e. BCAD, R&A Team members, Advisory Committees). Messaging will be written and developed in the appropriate voice and format based on the unique demographics of the target stakeholder group.
- Meet with Broward County Office of Public Communications and BCAD Public Information Office to determine process for design and development of project website and related social media.
- Support Broward County public communications team with gathering, writing and developing content for the webpage and other related media.
- Continue to provide updated information and content throughout the master planning process.

1.1I Coordination with Other Ongoing BCAD Initiatives

As necessary, R&A will coordinate with other consulting teams and/or BCAD project managers associated with other BCAD initiatives at HWO. Coordination may be necessary to exchange information about projects with a focus towards avoiding duplication of efforts, and ensuring consistency in data assumptions. This coordination would include teleconferences, in-person meetings, and data exchanges. A maximum of two (2) in-person meetings, four (4) teleconferences, and associated data exchanges are anticipated in Phase I. It is also assumed that BCAD will provide R&A with relevant data and electronic files in digital format, and facilitate coordination with key staff involved in other BCAD projects or programs.

1.1J Development of Project Manual

R&A will prepare a Project Manual to be used as a reference document by all members of the Master Plan Update team. This document will establish coordination protocol and will facilitate the execution of all elements of the Master Plan Update. The document will contain the following sections:

- Master Plan contacts (R&A Team, BCAD and others)
- Scope of services
- Schedule
- Document and correspondence templates
R&A will work with BCAD to identify the desired format for reports, meeting minutes, status reports and other related documents. The Project Manual will be distributed to all members of the team and will establish the standards to be applied for all project documentation. It will be distributed electronically and maintained with the established Master Plan Update webpage.

I.I.K Progress Reports
R&A will provide the BCAD Project Manager, and others as required, with monthly written progress reports on project schedule, upcoming milestones, and budget, as well as any issues that have arisen that may affect delivery of the Master Plan Update. In addition, monthly invoice billing reports will be submitted to BCAD for approval and processing. The format of these reports will be discussed and agreed upon with BCAD. In addition to formal status reports there will be informal status reports in the form of conference calls, meetings and other discussions throughout the duration of the project.

I.I.L Monthly Office of Economic and Small Business Development (OESBD) Goals Reports
R&A will provide the BCAD Project Manager, and others as required, with monthly OESBD goals reports following BCAD protocol for documentation of DBE participation.

Assumptions and General Comments:
• R&A would serve as the point of contact for communications among BCAD and members of the R&A Team unless otherwise agreed upon on a task by task basis for purposes of facilitating study performance efficiency and communications

Items of Work Not Included in Scope:
Not Applicable to this Project Management and Coordination Task

Supporting Sub-Consultant
Basulto Management Consulting, Inc.

Data & Resources Required From BCAD or Other Parties
As specifically noted under the Scope of Services above

Deliverables
• Roster of Members comprising the Policy and Technical Advisory Committees.
• Project schedule
• Monthly progress reports
• Monthly OESBD reports
• BCAD/R&A Team Data Exchange Platform
• Project Manual
• Supporting materials for Master Plan Update web page
Overview and Scope of Services

The purpose of the stakeholder engagement strategy and public outreach program is to obtain meaningful input from key stakeholder groups or members of the public that may be impacted by the outcomes of the proposed HWO Master Plan Update. HWO affects a broad and diverse group of stakeholders, both internal and external. It is, therefore, important to develop an engagement strategy and public outreach process that is inclusive and strives to create an environment that promotes meaningful dialogue and opportunities for stakeholders and the public to actively participate in the master planning process.

Key goals for the public outreach effort include:

- Meet and collaborate with BCAD and relevant internal leadership to identify a comprehensive list of key stakeholders that must be engaged in the planning process. Anticipated stakeholder groups include but may not be limited to:
  - Internal Stakeholders – BCAD, the R&A Team, Policy and Technical Advisory Committee members, major Airport tenants, etc.
  - External Stakeholders – impacted County departments (i.e. Public Works, etc.), regulatory agencies, public officials, municipalities, business leaders (i.e. Broward Workshop, Broward Alliance, etc.)
  - General Public – residential/homeowner associations & business communities at-large

- Determine the most effective communication platform(s) for engaging the demographics of each stakeholder group and all interested parties in order to solicit comments and input including but not limited to workshops, charrettes, public meetings, public open houses, individual meetings, electronic surveys, websites, social media, and other sources.

- Develop a proposed timeline, schedule and frequency for engaging each stakeholder group.

- Develop approach, roles and responsibilities for developing webpage and related social media materials.

- Formulate a Stakeholder Engagement and Public Outreach Plan/Program that clearly defines and outlines implementation approach for the above mentioned items. Following a pre-determined internal comment period, revisions and upon internal team approval, a final Plan/Program will serve as a framework for the public outreach plan throughout the planning process.
Meeting allowances for interacting with these Committees is included within the overall scope and budget established for the Stakeholder Engagement and Public Outreach Program Implementation task.

Assumptions and General Comments:
• R&A would lead communications to the Stakeholder groups and the Public relative to the technical analysis and results of the Master Plan Update. Dickey Consulting Services would handle logistical aspects associated with the implementation of the Stakeholder Engagement and Public Outreach Plan/Program (under a separate task). R&A would also follow the appropriate protocols and communication channels BCAD may have in place for stakeholder, public and media engagement and interaction.

Items of Work Not Included in Scope:
Stakeholder Engagement and Public Outreach Meetings.
Implementation of the Stakeholder Engagement and Public Outreach Plan/Program.

Supporting Sub-Consultant
Basulto Management Consulting, Inc.
Dickey Consulting Services, Inc.

Data & Resources Required From BCAD or Other Parties
As specifically noted under the Scope of Services above

Deliverables
• Plan/Program for Stakeholder Engagement and Public Outreach
Overview and Scope of Services
The master plan visioning task will establish the goals and objectives for the Airport and the HWO Master Plan Update based on input from both internal and external stakeholders. It will establish the framework by which alternatives will be developed, evaluated and refined. This task will also help identify the major issues facing the Airport in the form of a situational analysis, and will culminate with a set of strategic objectives and a vision statement to guide the master plan update process.

I.3A Situational Analysis
The situational analysis will consist of a high level review of material to be provided by BCAD and available through other public sources regarding the internal and external factors that drive growth at HWO and influence the issues to be addressed in the Master Plan Update. This will entail a scan of local, regional and global trends associated with aviation, transportation, sustainability, and other relevant considerations. The focus of the situational analysis will be to identify and understand all potential issues that could influence the outcome of the Master Plan Update, as well as the perusal and summary of all available BCAD information. The situational analysis will assess the landscape within which HWO operates based on the following broad categories:

- Local and regional political jurisdictions
- Physical boundaries
- Surface transportation systems
- Social and community considerations
- Financial and economic conditions
- Legal and regulatory framework
- Environmental issues and considerations; and
- The airport system (comprising FLL and North Perry Airport) and the relationship between the airports in south Florida

An important step will be to identify any readily available existing transportation demand data from other sources such as FDOT, Broward County Transit, or similar sources, for incorporation in the analysis. This task will be limited to discussions with BCAD staff and will not involve discussions with other stakeholders.
The completion of this task will be used to develop the Master Plan Vision and Strategic Objectives, and will complement the inventory task in which the existing conditions at HWO are assessed in a greater level of detail.

I.3.B  Assessment of HWO in the Context of other South Florida Airports Serving General Aviation
R&A will perform a strengths, weakness, opportunities and threats (SWOT) analysis for HWO. The current role and infrastructure capabilities and limitations of HWO will be assessed and compared to other airports throughout the tri-county area (Miami-Dade, Broward and Palm Beach counties). Particular emphasis will be given to the overall general aviation market, including both recreational and corporate aviation segments. The purpose of the SWOT analysis will be to identify specific opportunities to enhance HWO role as a general aviation reliever airport, while identifying specific limitations and competitive disadvantages with other airports serving South Florida’s general aviation market.

I.3.C  Formulation of Strategic Objectives
At the onset of this master planning process, BCAD identified the following broad objectives:

- Justify the proposed development plan within the study area through technical, economic, and environmental investigation of concepts and alternatives.
- Provide a modern graphic presentation of the future development of the airport and anticipated land uses in the vicinity of the Airport.
- Establish a realistic schedule for the implementation of the development proposed in the short, mid and long term planning horizons.
- Propose an achievable financial plan to support the implementation schedule.
- Provide the foundation for environmental evaluations that may be required prior to receiving project approval.
- Present a plan that adequately addresses the issues and satisfies local, state, and federal regulations.
- Document policies and future aeronautical demand to support Broward County best practices on spending, debt, land use controls, and other policies necessary to preserve the integrity of the Airport and its surroundings.
- Set the stage and establish the framework for a continuing airport planning process with supporting public coordination and participation element.
- Support sustainability goals

Furthermore, BCAD recently prepared a Business Plan for HWO that established specific goals and objectives for HWO. Through meetings with BCAD staff, R&A will confirm and elaborate on the objectives and refine them as necessary. R&A will also identify key drivers, issues, constraints and opportunities to be addressed during the Master Plan Update. This process will culminate with a list of the strategic objectives that will be used to guide the development of options, as well as the metrics that will be used to screen, evaluate, and refine the most viable options.
I.3D Define Vision
Based on the results of the situational analysis and the development of strategic objectives, R&A will establish a draft vision statement to guide the master planning process. This vision statement will be discussed in a collaborative working session with a select group of key stakeholders, to be determined in consultation with BCAD leadership. The vision statement will be refined based on the working session, and will culminate as a concise summary of the strategic objectives and direction from BCAD leadership to be considered in the execution of the various Master Plan Update tasks.

The vision statement is intended to be a high level conception of the strategic goals. It will be used as a framework for future airport development, including the possible boundaries of the planning considerations and assumptions. The result of this visioning session will set the foundation for the balance of the master planning process. This vision statement will be referred to in the public outreach process and in discussions with the FAA, tenants, users, and other stakeholders.

I.3E Visioning Charrette
Prepare for and conduct a half-day stakeholder visioning charrette. The charrette will include a professional facilitator to be identified in coordination/cooperation with BCAD. The charrette will also include discussions to define business goals and objectives for HWO and to refine or confirm the vision defined as part of the prior task – including but not limited to the alignment of the vision and the strategic objectives with broader County goals and objectives for its airports/airport system. R&A’s Project Manager will meet with BCAD and the proposed facilitator in advance to establish the agenda and coordinate other logistical factors associated with each of these visioning charrettes.

Assumptions and General Comments:

• None applicable to this task

Items of Work Not Included in Scope:
Formulation of a Strategic Plan or Business Plan, even though some of the elements typically undertaken in those planning processes are included in the scope of work for this task.

Supporting Sub-Consultant
Basulto Management Consulting, Inc.

Data & Resources Required From BCAD or Other Parties
As specifically noted under the Scope of Services above

Deliverables

• Situation Analysis
• Airport and Master Plan Vision Statement
Overview and Scope of Services

A thorough inventory of existing condition and data collection, comprising both physical attributes and operational/performance characteristics for existing facilities and infrastructure will be undertaken. The data and information collected as part of this inventory task will serve as a baseline of existing conditions by which the subsequent master planning analysis will be based upon. The baseline of existing conditions will be representative of conditions at the Airport during the base year for the Master Plan Update, represented by 2015.

As instructed by BCAD, prior or ongoing studies and project data will be utilized, including the robust inventory of existing facilities at HWO that was recently completed by BCAD. This effort will build on the information contained in this document and other documents available to the R&A Team. Airport improvements, either planned or being constructed/implemented will be incorporated into the baseline conditions, with BCAD’s concurrence. Supplemental data needs or data gaps will be fulfilled through field/site visits and observations, and/or tenant and BCAD interviews by members of the R&A Team.

A detailed description of the scope of services for this inventory task, by airport functional component/system is provided below.

I.4A Airfield and Airspace

Present conditions of the existing airfield system will be collected and documented, such as: runway and taxiway geometry, pavement strengths, obstacle and obstruction information, NAVAIDs, operational restrictions, runway and taxiway centerline clearances, deviations from FAA design standards, and other pertinent airfield information. The existing conditions will assume future Airport Layout Plan (ALP) elements that are being phased for implementation in future years – the resulting layout will constitute the baseline airfield conditions for the Master Plan Update. Other ongoing or near-term improvements (physical or operational) being considered by BCAD and reflected in the Airport’s CIP, but not necessarily depicted on the ALP will be incorporated, as appropriate, based on discussions with BCAD. The data collection effort also includes collecting capacity estimates, supporting analysis, and underlying assumptions for HWO-specific airfield capacity studies.

The arrival and departure airspace routes and current approach and departure procedures will be obtained for use in the airfield demand/capacity analysis. Noise abatement procedures, if any, and potential airspace modifications associated with the FAA’s South Florida Metroplex initiatives will also be inventoried. Interviews with ATCT personnel will be conducted to gather pertinent
information related to HWO operations, including but not limited to runway use, runway balancing, and taxiway routing commonly used. R&A will conduct field observations (up to 16 hours) from the ATCT and other FAA facilities of airfield operations to ensure a full understanding of baseline operation conditions. These observations will include airfield taxi patterns, runway use, taxiway use, and other related air traffic control procedures.

Another consultant will be conducting a separate Environmental Assessment (EA) for runway safety enhancements at HWO under a separate contract, referred to as the EA Consultant. In conjunction with the EA, it is anticipated that the EA consultant will conduct a detailed inventory of the runways, adjacent parallel taxiways, runway entrance/exit taxiways, and NAVAIDs at HWO. In order to conserve BCAD resources and avoid duplication of efforts, R&A will work closely with the EA consultant to identify pertinent airside information that will be collected during the EA and incorporate them into the Inventory of Existing Conditions for the Master Plan Update.

The analysis of airspace obstructions is scoped in a separate task, using a combination of the AGIS survey data and the iALP airspace analysis tool. In this inventory task, R&A will gather the results of that analysis and document the airspace obstructions condition into the inventory report. Thus, the effort scoped under this inventory task is the generation of narrative and graphics to document the existing airspace condition at HWO based on the AGIS and iALP task results. The narrative and graphics will describe existing airspace obstructions to critical airspace surfaces including those prescribed in FAA Order 8260.3B, United States Standards for Terminal Instrument Procedures (TERPS) and FAR Part 77, Safe, Efficient Use and Preservation of the Navigable Airspace (Part 77) for each of the runway ends at HWO.

I.4B Landside Facilities

The landside inventory will also include a review of existing conditions for: on-airport roadways and intersections, public transportation and general ground access, public parking and interface with the local roadway network. The Landside inventory is anticipated to include:

- Review and analyses of prior traffic studies
- Graphic depiction and general description of the on-airport roadways
- On-site visits and discussions with BCAD staff to understand the existing roadway system and data collection strategy/plan
- Tables and graphs indicating the existing traffic volumes, mode splits and number of lanes for all on-Airport roadways

Every effort will be made to utilize available recent traffic count information provided by BCAD or others, including data from recent FDOT traffic counts. It is anticipated that traffic count information for the primary arterial roadways surrounding HWO (Pines Boulevard, University Boulevard, and Pembroke Road) would be obtained from FDOT traffic count data. As necessary, this task would obtain the data needed for the analysis of on-airport roadway system.

R&A would prepare a detailed list of data needs, identify the schedule and location for all automatic traffic recorder (ATR) counts, and coordinate with the data collection consultant (RJ Behar & Company) to obtain data. It is anticipated that key data would include the following:
• Roadway traffic volume counts collected via automatic traffic recorder (ATR) or passive magnetic sensors. For budgeting purposes it is assumed that one (1) ATR counters would be placed for a seven day period to evaluate peaking patterns over the course of a week to establish the peak day and peak period for data collection purposes.

• Upon establishment of the data collection period, the ATR counters would be placed at up to 6 locations to collect bi-directional traffic volumes in 15-minute increments for a 24-hour period.

• Intersection turning movement counts would be collected at 3 locations during two peak hour periods determined from initial 7-day count. The intersection counts would include classification of heavy vehicles.

• Intersection geometry, traffic signal phasing and timing data for each of the study area intersections to be obtained from FDOT.

• Existing and proposed roadway layout plans for the study area in AutoCAD format.

• Regional growth assumptions for non-airport-related background traffic using any of HWO’s roadway systems.

• Other available data or reports related to general aviation or other tenant employment and/or traffic activity.

The evaluation of vehicular parking areas will be performed separately on an individual tenant facility basis.

I.4C Fixed Base Operator (FBO) and General Aviation Facilities

Existing reports and other available information will be utilized to inventory the existing FBO and general aviation facilities, along with on-site/field inspections and discussions with the individual tenants. The R&A Team will document existing support facility information concerning:

• Facility size and use
• General site conditions
• Airside and landside access
• General building condition
• Facility, ramp, and vehicular utilization, and capacity estimates based on BCAD and/or GA tenant input
• Planned improvements
• Applicable Design guidelines (if any)

In effort to supplement information contained in BCAD’s recently completed Facilities Inventory, site visits to the FBO’s and GA facilities will be arranged to gain a better understanding of facility utilization and operational needs of the tenants. It is anticipated that up to two (2) site visits (4 hours in duration each) to GA facilities may be needed to interview stakeholders, gather additional information, and/or validate facility information. Direct coordination and discussions with GA tenants concerning data collection will be at the discretion of BCAD. Tenant interview questionnaires/surveys for general aviation users would also be prepared in advance of the site visits.
and reviewed with BCAD staff. Existing FBO and General Aviation facilities will be inventoried, including the following:

- General Aviation hangars and ramp areas
- GA fuel facilities
- GA user vehicle parking areas
- GA facility landside and airside access
- Other GA supporting facilities (tenant storage, maintenance, etc.)
- Other tenants such as Broward College Aviation Institute and Broward County Mosquito Control

I.4D Airport Support Facilities
Existing reports and other available information will be utilized to inventory the existing airline and airport support facilities, along with on-site/field inspections and discussions with the individual tenants. The R&A Team will document existing support facility information concerning:

- Facility size and use
- General site conditions
- Airside and/or landside access
- General building condition
- Facility utilization and capacity estimates based on BCAD and/or tenant input
- Special operating conditions and equipment applicable to the master planning analysis
- Number of Employees
- Planned improvements
- Applicable Design guidelines (if any)

Site visits to each of the primary facilities will be arranged to conduct this inventory. It is anticipated that one site visit (2 hours in duration) per support facility may be needed to interview stakeholders, gather additional information, and/or validate facility information. Direct coordination and discussions with tenants concerning data collection will be at the discretion of BCAD.

Existing ancillary facilities will be inventoried, including the following:

- Air traffic control tower
- Airport maintenance and equipment storage
- Airport administration and management
- Aircraft rescue and fire fighting
- Aircraft fueling and fuel storage
- FAA facilities
• Airport security and police
• Other tenants and facilities

I.4E Airport Utilities
The objective of this task is to inventory and understand, at a high level, the sizes, locations, capacity, usage and other relevant information on existing utilities that provide service to HWO. Only the main trunk or transmission lines will be inventoried. The utilities that will be included in this investigation are:
• Domestic water
• Sanitary sewer
• Storm drainage
• Natural gas
• Fuel
• Telephone
• Communications network
• Electric power

Another consultant will be preparing a Utilities Atlas for HWO under a separate contract, which will include the detailed collection of utilities information, subsurface utility engineering (SUE)/surveys and/or the use of ground penetrating radar. In order to conserve BCAD resources and avoid duplication of efforts, the location and sizes will be based off the pending utility atlas to be developed by their other Consultant. No survey, utility testing, or SUE work is proposed for HWO under this scope.

All information will be gathered through BCAD to ensure the R&A Team is working with the latest versions of known existing utility systems. The R&A Team will confirm with BCAD Operations and Maintenance to ensure that all data collected is to the best of their knowledge. The R&A Team will prepare a narrative detailing the existing conditions and findings for each utility. In addition, each utility will have a detailed map showing its locations and sizes.

I.4F Airport Security Overview
The collection and review of relevant information to be provided by BCAD regarding security systems and issues in the airfield, and airport operations area, and HWO airport perimeter will be completed by R&A. The purpose of gathering this information is to determine how HWO’s security operations compared to other general aviation airports and FAA requirements, so that improvements can be accounted for in the capital improvement plan resulting from this Master Plan Update.

I.4G On-Airport and Off-Airport Land Uses
Existing land use mapping, aerial photography, comprehensive plans, and other documentation pertaining to current and future land use in the vicinity of the Airport (up to one mile from the Airport boundary) will be reviewed. Land Use data will be obtained from the Cities of Miramar, Pembroke Pines, and Hollywood. Further, the Broward County Property Appraiser and Metropolitan...
Planning Organization will be contacted to obtain future land use or zoning plans and to identify the potential for future residential, commercial, and industrial development in the vicinity of the Airport.

I.4H Environmental Conditions
As part of the EA for the runway safety enhancements at HWO, it is anticipated that THE EA CONSULTANT will conduct a detailed inventory of the environmental conditions at HWO. In order to conserve BCAD resources and avoid duplication of efforts, R&A will work closely with THE EA CONSULTANT to identify pertinent environmental information that will be collected during the EA and incorporate pertinent information into the Inventory of Existing Conditions for the Master Plan Update.

The environmental conditions inventory of the airport environs should include data collection and field investigations necessary to identify current environmental features on and directly adjacent to HWO. Features that should be identified as part of the EA include water resources (e.g., streams, wetlands, floodplains, and coastal zones), historic or cultural resources, natural communities and vegetative associations, threatened and endangered species, and other features or groups of features that may influence the development and operation of airport improvement projects. However, noise contours will not be prepared as part of this effort. Data sets compiled during the environmental conditions inventory will be prepared in a format consistent with the GIS standards established by BCAD.

I.4I Review Current BCAD Sustainable Programs and Policies
The R&A Team will collect and review information pertaining to BCAD’s current sustainability programs and policies. To the extent practical, data and information from the Guidance Manual for Sustainable Operations & Green Practices and the Green Airport Initiative will be reviewed to determine their applicability to HWO’s current sustainability programs and policies. For budgeting purposes, it has been assumed that this effort will require a site visit at the Airport and interviews of BCAD staff.

I.4J Existing Conditions Inventory Chapter
An Existing Conditions Inventory Chapter will be prepared to summarize the conditions of the existing HWO airport facilities and operating environment. Three submittals of the Inventory of Existing Conditions Chapter would be provided, each in MSWord and portable document file (PDF) formats, as outlined below:

- Preliminary Draft for BCAD review and comment
- Final Draft for BCAD, FAA/FDOT review and comment

The second round of comments/revisions will be incorporated into the draft chapter and then remain until final comments are solicited at submission of the Draft Master Plan Update Report.

Assumptions and General Comments:

- BCAD will be conducting an Environmental Assessment (EA) for runway safety improvements at HWO concurrently with this Inventory effort. The EA is to be performed separately under another contract. It is anticipated that the EA will include a detailed inventory of the runways and associated NAVAID facilities at HWO. To ensure consistency and avoid duplication of efforts, the airfield inventory associated with the EA will be
incorporated into the Inventory of Existing Conditions Chapter prescribed herein and supplemented with other airfield facilities (taxiways/taxilanes, apron areas, etc.).

- BCAD has procured the services of another consultant to develop a comprehensive utility atlas for HWO. To ensure consistency and avoid duplication of efforts, the information contained in the utility atlas will serve as the primary resource for documenting the current utility systems for HWO will incorporated into the Inventory of Existing Conditions Chapter prescribed herein.

**Items of Work Not Included in Scope:**
Detailed facilities inspections and condition assessments
 Utilities surveying and SUE
 Noise modeling

**Supporting Sub-Consultants**
Basulto Management Consulting, Inc.
R.J. Behar & Company, Inc.

**Data & Resources Required From BCAD or Other Parties**
- HWO Master Plan (2009)
- Recently completed HWO Facilities Inventory
- NEPA for 2015 projects
- Recent/Relevant Roadway Studies (as determined by BCAD)
- Airport Layout Plan (ALP) as amended
- Area Land Use and Zoning Information
- Airfield PCI Study (if available) or FDOT Pavement Management Report
- Current Capital Improvement Program
- Airport Property Map and Detailed Property Information
- Area Transportation Plans and Existing Traffic Counts
- HWO Tenant Leasehold Documents
- Broward County's Adopted Comprehensive Plan
- BCAD Guidance Manual for Sustainable Operations & Green Practices
- BCAD Green Airport Initiative
Deliverables
A detailed narrative report summarizing the results of the inventory of existing conditions including supporting graphic exhibits and tables

- Preliminary Draft Existing Conditions Inventory Chapter for BCAD review and comment
- Final Draft Existing Conditions Inventory Chapter in Microsoft Word and PDF format for BCAD, FDOT and FAA review and comment
- Electronic deliverables prepared as part of this task including PowerPoint presentations, AutoCAD and GIS files
Overview and Scope of Services
The key objective of the aviation activity forecast task is to estimate/project the future aviation demand that will provide the basis for all further analysis, including the identification of future facility requirements and to establish a timeline for future airport needs and improvements. These forecasts will be prepared on a fiscal year (FY) basis, coinciding with the timeline definition for Broward County’s fiscal year (October 1 thru September 30). The key benchmark FY for the forecast will be 2020 (near-term), 2025 (mid-term), and 2035 (long-term). The year 2015 (i.e. FY 2015) will be used as the base year and annual forecasts will be developed for FY 2016 through FY 2035.

It is anticipated that the EA Consultant will prepare the aviation activity forecasts for HWO. In order to conserve BCAD resources and avoid duplication of efforts, R&A will work closely with the EA Consultant to ensure that the activity forecasts generated during the EA are adequate to meet the needs of the HWO Master Plan Update and completed in accordance with a schedule that will not delay subsequent analyses associated with the Master Plan Update.

It is anticipated that the EA Consultant will develop a forecast of future aviation activity levels for aircraft operations and based aircraft for the Airport as part of the EA. The forecast will be developed based on historical activity levels and regional socioeconomic factors, among other information sources (e.g. FAA Aerospace Forecast, etc.). The EA Consultant’s forecasts will adhere to the Basic Aeronautical Forecast requirements prescribed in FAA Advisory Circular 150/5070-6, Airport Master Plans and include the following components:

- Total Annual Operations:
  - Classified as local and itinerant
  - Annual itinerant operations by aircraft classification (piston, turboprop, jet, helicopter, etc.)
  - Annual itinerant operations by current critical aircraft
  - Annual itinerant operations by future critical aircraft
- Based aircraft
- Annual instrument approaches
• Derivative forecasts (total operations only)
  o Peak month
  o Peak month average day (PMAD)
  o Peak hour

To support the preparation and integration of the activity forecasts into the HWO Master Plan, R&A will perform the following tasks.

1.5A Coordination with the EA Consultant
R&A will coordinate with the EA Consultant to ensure that the forecast approach and methodology would meet the needs of the Master Plan Update, share pertinent information that is collected during the Inventory of Existing Conditions, and monitor the progress of the Forecast Chapter development. R&A would also review the preliminary finding of the forecasts that are derived by the EA Consultant at various milestones.

1.5B Aviation Activity Forecasts Chapter Review and Formatting
The EA Consultant will provide a compilation of the Aviation Activity Forecasts in a report form for BCAD and other interested entities to review the analysis methodology and results of the forecast analysis performed for HWO. R&A will also review the Preliminary Draft of Aviation Activity Forecast Chapter for consistency with the HWO Master Plan needs. The report containing the Aviation Activity Forecasts will summarize the assumptions, methodology and results of the forecast, and will include tables, graphics and sources used.

1.5C Responses to FAA Comments and Coordination with FAA and FDOT
R&A will lead the coordination of the Aviation Activity Forecasts chapter with FAA and FDOT. Following BCAD’s review and concurrence of the Forecast chapter, R&A will submit the Final Draft version of the Aviation Activity Forecasts Chapter to FDOT and FAA for review and comment. R&A will work collaboratively with the EA Consultant, the FAA’s ADO and APO if requested, and present preliminary forecast documentation including approach and methodology with the draft forecast traffic levels compared to the latest TAF for review.

Assumptions and General Comments:

• The EA Consultant will prepare the Aviation Activity Forecasts as a separate task under the EA for the runway safety enhancement at HWO. All forecasting efforts prescribed herein for the EA Consultant will be performed under a separate contract.

• R&A’s role will be limited to reviewing the Aviation Activity Forecasts associated with the EA, and coordination of the FAA/FDOT review process.

Items of Work Not Included in Scope:
Preparation of Aviation Activity Forecasts
Respond to BCAD/FAA/FDOT comments

Supporting Sub-Consultants
None
Data & Resources Required From BCAD or Other Parties

- Preliminary Draft of Aviation Activity Forecasts
- FAA/FDOT Review Comments
- Final Draft of Aviation Activity Forecasts

Deliverables

- Reformatted Draft Forecast of Aviation Activity Forecast Chapter in Microsoft Word and PDF format for FAA & FDOT review and comment.
- Reformatted Final Forecast of Aviation Activity Forecast Chapter in Microsoft Word and PDF format for final FAA/FDOT submittal
Overview and Scope of Services

The Advisory Circulars identified below detail the data collection requirements and accuracies for the project and the verification process by the Federal Aviation Administration (FAA) and the National Geodetic Survey (NGS).

- AC 150/5300-16A “General Guidance and Specifications for Aeronautical Surveys: Establishment of Geodetic Control and Submission to the National Geodetic Survey.”
- AC 150/5300-17C “Standards for Using Remote Sensing Technologies in Airport Surveys”

The purpose of this task is to accomplish FAA Airport Airspace Analysis Survey for all surfaces defined in FAA Advisory Circular 150/5300-18B: Section 2.7.1.1 Runways with vertical guidance. For this project, we will acquire new vertical stereo aerial photography at a nominal scale of 1”=360’ for the airport property (640 acres), as defined by your office, and 1”=1,905’ covering the obstruction surface areas. The aerial photography will cover all of the VG Airspace Surfaces and will be obtained using one of our Zeiss Digital Mapping Cameras (DMC) during leaf-on conditions.

From the 1”= 360’ aerial photography, we will produce the following:
- 1”=40’ scale planimetric mapping of the Airport property (see below)
- Color digital orthophotos with a .25 foot pixel resolution (see below)
- Contours at 1’ intervals of the airport property and additional defined areas(see below)

From the 1”=1,905’ aerial photography, we will produce the following:
- Limited landmark feature planimetric mapping outside of the airport area
- Color digital orthophotos with a 1 foot pixel resolution (see attached exhibit)
- Identification and mapping of obstruction obstacles for all of the VGRPS, VGPCS, VGPS, & VG surfaces

The project has been designed to conform to the National Map Accuracy Standards for 1”=40’ scale planimetric feature collection, one foot contour verification, three and twelve inch orthophoto production. In addition The R&A Team will ensure that the photogrammetric mapping will meet all...
FAA and NGS standards. The R&A Team will exercise reasonable care and will conform to the standards of practice ordinarily used by the photogrammetric profession.

The project area encompasses all of North Perry Airport, inclusive of all the defined obstruction surfaces. Detailed tasks are also identified more clearly in Appendix A.

I.6A Control Surveying
The aerial photography will be acquired with airborne GPS (ABGPS) control which will be used for the base control for the geo-referencing of the aerial imagery. The R&A Team will process the ABGPS data using COR stations and project the final positions to the project control datum:

- Vertical: North American Vertical Datum of 1988 (NAVD 88) and ellipsoid heights

The R&A Team will complete all of the remaining on-site ground control surveys including:

- Verify location of Primary Airport Control Stations (PACS) and Secondary Airport Control Stations (SACS) stations according to the guidelines established in AC 150/5300-16A
- Obtaining all necessary ground control photo identifiable control check points required to validate the ABGPS control.
- Control of all the airport runway end positions
- Collection of vertical profiles for the runway being considered for the instrument approach
- Collection of the position, elevation, and where required the appropriate navigational aid perpendicular point of all electronic and visual navigational aids (NAVAIDS) located on the airport and associated with any current instrument approach servicing the airport
- Control for any obstruction obstacles or airport planimetric features that cannot be collected by photogrammetric methods
- Complete map checks for feature attribute data and update the final map file attribution (photogrammetric and NAVAIDS survey) data.

I.6B Orthophoto Mapping
The R&A Team will use the control solution and digital imagery to generate a Digital Elevation Model (DEM) for the all of the airport property and approach surfaces. The digital imagery will be processed into color digital orthophotos using the aforementioned DEM to rectify the images. Orthophotos with a 0.25' pixel resolution will be generated for the airport property and will be delivered in a GeoTIFF file format. Orthophotos for the entire project area will be developed with a 1.0' pixel resolution and be delivered in a GeoTIFF file format and Mr.SID format via external hard drives.

I.6C VGA Obstruction Surveys
For the VGA Obstructions Surfaces, our production personnel will satisfy the following requirements of the AC 150/5300-18B, Paragraph 2.7.1.2. Analysis of Runways with Vertically Guided Operations (Surfaces include the VGRPS, VGPCS, VGAS, VGPS, VGATS, VGHS and VGCS).
The specific types and quantities of obstructions for each surface are outlined and clearly defined for the particular surface in each circular section. Any obstructions that meets the requirement of the circular, but are of a nature that elevations at the highest point of the obstruction are virtually impossible to read through photogrammetric methods (cell tower, electrical tower, etc.), will be identified and field surveyed for elevations of the obstruction.

The obstruction deliveries will include the off-airport landmark planimetric mapping and the airport planimetric mapping and photogrammetric attribution data.

The final data will be delivered in a Shapefile format. Delivery formats can continue to be discussed and adjusted by The R&A Team as the project continues to develop.

Assumptions and General Comments:
None applicable to this task

Items of Work Not Included in Scope:
Establishment of PACS and SACS is not anticipated and would require a supplemental work authorization if they cannot be identified in the field
Refer to scope of services above

Supporting Sub-Consultant
Quantum Spatial, Inc.

Data & Resources Required From BCAD or Other Parties
As specified in Scope of Services above

Deliverables
The R&A Team will work with BCAD to finalize a mutually agreeable schedule for the project after FAA Control Plan approvals and make a reasonable effort to maintain the agreed-upon schedule. The R&A Team will submit all data collected and associated required deliverable in the formats specified in the appropriate advisory circulars to the FAA Office of Airports, Airports Surveying-GIS Program. All data submissions to the FAA will be through the program’s web site at http://airports-gis.faa.gov.

The AC 150/5300-17C project data deliveries that will not be submitted through the web site will be delivered on external hard drives for review and delivery to NGS and the FAA.

The 18B deliverables that will be uploaded to the AGIS website include:

- Statement of Work, Imagery Plan and Survey and Quality Control Plan
- Image Delivery
- Digital limited landmark detail outside the airport
- Color digital orthophotos with a 1.0’ pixel resolution (GeoTIFF format)
- Obstruction survey data (that covers VG surfaces)
• Surveyed centerline profile on VG runways
• NAVAID data
• Planimetric data and one foot contours to 18B specs (Shapefile format)
• Photogrammetrically derived attributes in defined format
• FGDC compliant metadata
• Final Report

Additional deliverables for use in the HWO Master Plan Update:

• Color digital orthophotos with a 1.0" pixel resolution in GeoTIFF (project area)
• Color digital orthophotos with a 0.25" pixel resolution in GeoTIFF (airport property)
• 2 color enlargements (30"x40") covering the airport and surrounding area (mounted/laminated/framed)

All digital files will be delivered on external hard drive.
NORTH PERRY AIRPORT

Master Plan Update – Scope of Services

PHASE I

Task 1.7 – Stakeholder Engagement and Public Outreach Program Implementation

Overview and Scope of Services
In this task, the R&A Team will implement the approved elements of the Stakeholder Engagement Strategy and Public Outreach Program developed under a separate Phase I task. The effort scoped herein will focus on the public and stakeholder meetings.

Activities related to Program implementation include:
Schedule and coordinate logistics for stakeholder meetings according to the identified forum and vehicle for each group (i.e. public meetings, workshops, individual meetings, etc.) – for budgeting purposes, it has been assumed that Phase I of the HWO Master Plan Update will include:

(a) one (1) 3-hour public meetings, with each meeting being attended by R&A’s Officer-in-Charge, R&A’s Project Manager, one technical specialist/subject matter expert from R&A, and up to two non-R&A individuals from the R&A Team;

(b) one (1) Project Advisory Committee and one (1) Technical Advisory Committee meetings (assuming the meetings with both Committees would occur in the same day), with each meeting having a 2-hour duration and anticipated to be attended by R&A’s Officer-in-Charge, R&A’s Project Manager, one technical specialist/subject matter expert from R&A, and up to one non-R&A individual from the R&A Team;

(c) up to two (2) individual meetings, with each meeting having a 1.5-hour duration and assumed to be attended by R&A’s Officer-in-Charge and R&A’s Project Manager (or alternately, in lieu of the project manager, these meetings could be attended by one technical specialist/subject matter expert from R&A or from another Team member firm, along with R&A’s Officer-in-Charge).

However, these assumptions are simply for budgeting purposes, the resulting hours and budget will be compiled within the budget allowance for this task and utilized by BCAD at its discretion, as a time and materials budget. Thus, BCAD may decide to have more or less of any meetings or workshop type described above. They may also choose to not undertake one or more of the meetings or workshop sessions noted above, and/or may decide to not fully exhaust the budget established for this task.

- Develop a stakeholder database or contact list
- Contact stakeholders accordingly to invite them to participate in meetings, forums and other media
- Develop agenda and communication materials and messaging relevant to each stakeholder group in close coordination with BCAD

- Identify, engage and include relevant team members for appropriate participation for each stakeholder meeting and venue

- Conduct stakeholder events and meetings with a focus on interactive dialogue to encourage meaningful input

- Document and record comments, questions and other feedback from each meeting and event

- Summarize findings and key trends from outreach initiative

Assumptions and General Comments:

- The budget established for this task is meant to be flexibly utilized at BCAD’s discretion in order to maximize the value of the Stakeholder Engagement and Public Outreach Program formulated for the HWO Master Plan Update. Thus, BCAD may decide to have more or less of any meetings or workshop type described above. They may also choose to not undertake one or more of the meetings or workshop sessions noted above, and/or may decide to not fully exhaust the budget established for this task.

Items of Work Not Included in Scope:
Transportation, parking or meals for participants of these meetings/workshops.
Expenses for advertisement of meetings/workshops

Supporting Sub-Consultant
Basulto Management Consulting, Inc.
Dickey Consulting Services, Inc.

Data & Resources Required From BCAD or Other Parties
List of Stakeholders desired by BCAD for participation in each meeting or workshop.

Deliverables

- Final meeting schedule
- Database/contact list of stakeholders
- Meeting support materials (presentations, handouts, etc.)
- Meeting minutes and related documentation from events
Overview and Scope of Services

Ricondo & Associates, Inc. (R&A) will serve as the Prime Consultant for North Perry Airport’s (HWO’s) Master Plan Update and will assume the lead responsibility for the timely, high quality delivery of the Master Plan Update deliverables, as well as the underlying technical analyses in accordance with the contractual requirements specified in the Agreement between R&A and Broward County for this assignment. R&A will oversee and manage the work performed by our various subconsultant team members (collectively referred to as the R&A Team), and provide direction and guidance as necessary to ensure consistency among the team’s study activities and work products.

A more detailed description and summary of the project management and project coordination activities that will be provided by R&A as part of this initial phase of the HWO Master Plan Update are provided below.

II.1A R&A Team Coordination Meeting
Monthly in-person or teleconference coordination meetings will be held among the team members to review the status and progress of each task, schedule and budget performance. A maximum of eight (8) meetings or teleconferences are anticipated in Phase II of the HWO Master Plan Update.

II.1B Study Tasks Initiation Meetings
Task initiation meetings will be held at the commencement of each key study task. These meetings will include representatives from BCAD, R&A (and, if appropriate, other firms from the R&A Team), and other key personnel or stakeholders as required or as suggested by BCAD. The purpose of these meetings will be to review and validate proposed methodologies, assumptions, task inputs, scope content and exclusions, task schedule and key milestones, and specific data requirements. These meetings may be held in-person or via teleconference. It is anticipated that there will be a maximum of four (4) task initiation meetings or teleconferences in Phase II of the HWO Master Plan Update.

II.1C Client Working Sessions
It is anticipated that there will be a maximum of two (2) working sessions with BCAD in Phase II of the HWO Master Plan Update. The purpose of these working sessions is to have interactive discussions or brainstorming sessions among R&A, members from the R&A Team as appropriate, and BCAD in a collaborative setting rather than a more formal briefing environment.
II.1D  Formulation of Master Plan Update – Phase II Schedule
R&A will prepare a preliminary detailed schedule for Phase II of the HWO Master Plan Update using Microsoft Project for BCAD’s review and comment immediately following the Notice to Proceed/Consultant Work Authorization. Revisions will be made based on BCAD’s comments for further discussions with the Florida Department of Transportation (FDOT) and the Federal Aviation Administration’s (FAA’s) Airports District Office (ADO) – both of which are anticipated to be funding partners for the Master Plan Update. A second draft schedule will be prepared and submitted to BCAD for review and comment. Upon BCAD’s review, a third and final schedule will be prepared and submitted for BCAD approval. R&A will coordinate with all team members as necessary on the schedule for their participation relative to their defined roles. During the course of the project, R&A will monitor and maintain the schedule, and if necessary, will issue adjustments as required.

II.1E  FAA and FDOT Grant Support and Coordination
R&A will assist BCAD with coordination regarding FAA and FDOT grants for the HWO Master Plan Update. The following activities will be conducted:

- Submittal of the HWO Master Plan Update scope of work, budget, and schedule to FAA and FDOT, or independent consultant, as requested by BCAD.
- Response to comments from FAA, FDOT, and/or independent consultant on scope of work, budget, and schedule.
- Up to three (3) teleconferences to discuss comments and/or R&A’s response to comments.

II.1F  BCAD/R&A Team Data Exchange Platform
R&A will work with BCAD to define a platform (site) for exchanging electronic data files and deliverables throughout the HWO Master Plan Update. The site will be used exclusively for uploading and downloading data files. The site will be password protected.

II.1G  Master Plan Update Web Page
The Broward County Office of Public Communications and BCAD Public Information Office leads the design, development and maintenance of all public media including the County’s website, social media and other public communication media. As such, R&A will work closely with these County and BCAD offices by developing and providing project specific content and related materials for the website and other public media. Anticipated support responsibilities include:

- Develop key messaging with input and collaboration from internal stakeholders (i.e. BCAD, R&A Team members, Advisory Committees). Messaging will be written and developed in the appropriate voice and format based on the unique demographics of the target stakeholder group.
- Support Broward County public communications team with gathering, writing and developing content for the webpage and other related media.
- Continue to provide updated information and content throughout the master planning process.
II.1H Coordination with Other Ongoing BCAD Initiatives
As necessary, R&A will coordinate with other consulting teams and/or BCAD project managers associated with other BCAD initiatives at HWO. Coordination may be necessary to exchange information about projects with a focus towards avoiding duplication of efforts, and ensuring consistency in data assumptions. This coordination would include teleconferences, in-person meetings, and data exchanges. A maximum of two (2) in-person meetings, four (4) teleconferences, and associated data exchanges are anticipated in Phase II. It is also assumed that BCAD will provide R&A with relevant data and electronic files in digital format, and facilitate coordination with key staff involved in other BCAD projects or programs.

II.1I Update Project Manual
R&A will update the Project Manual to be used as a reference document by all members of the Master Plan Update team. This document will establish coordination protocol and will facilitate the execution of all elements of the Master Plan Update. The document will contain the following sections:

- Master Plan contacts (R&A Team, BCAD and others)
- Scope of services
- Schedule
- Document and correspondence templates

R&A will utilize the format adopted for the Project Manual during Phase I of the HWO Master Plan. The Project Manual amendments will be distributed to all members of the team and will establish the standards to be applied for all project documentation. It will be distributed electronically and maintained with the established Master Plan Update webpage.

II.1J Progress Reports
R&A will provide the BCAD Project Manager, and others as required, with monthly written progress reports on project schedule, upcoming milestones, and budget, as well as any issues that have arisen that may affect delivery of the Master Plan Update. In addition, monthly invoice billing reports will be submitted to BCAD for approval and processing. The format of these reports will be discussed and agreed upon with BCAD. In addition to formal status reports there will be informal status reports in the form of conference calls, meetings and other discussions throughout the duration of the project.

II.1K Monthly OESBD Goals Reports
R&A will provide the BCAD Project Manager, and others as required, with monthly OESBD goals reports following BCAD protocol for documentation of DBE participation.

Assumptions and General Comments:

- R&A would serve as the point of contact for communications among BCAD and members of the R&A Team unless otherwise agreed upon on a task by task basis for purposes of facilitating study performance efficiency and communications
Items of Work Not Included in Scope:
Not Applicable to this Project Management and Coordination Task

Supporting Sub-Consultant
Basulto Management Consulting, Inc.

Data & Resources Required From BCAD or Other Parties
As specifically noted under the Scope of Services above

Deliverables
- Phase II project schedule
- Monthly progress reports
- Monthly OESBD reports
- BCAD/R&A Team Data Exchange Platform
- Project Manual Amendments
- Supporting materials for the Master Plan Update web page
Overview and Scope of Services

The demand/capacity assessments and facility requirements analysis will address the Airport's ability to accommodate airside, tenant, support, and landside facility needs based on the updated aviation activity forecasts and current and future design aircraft. The updated facility requirements analysis will quantify demand and existing airside, tenant, support and landside facilities will be analyzed to determine the type and magnitude of aviation improvements ultimately required for the Airport. The facilities requirements analysis will focus on the physical facilities and associated improvements needed to safely and efficiently accommodate projected aviation demand on those aviation facilities for the twenty-year planning period (2015-2035).

11.2A: Airfield

In conjunction with the EA for the HWO airfield safety enhancements that are to be performed under a separate contract, it is anticipated that the EA Consultant will be establishing the facility requirements for all four runways and their associated parallel and runway taxiway exits, referred to as the parallel taxiway network. In order to conserve BCAD resources and avoid duplication of efforts, R&A will work closely with the EA Consultant and BCAD staff to define the facility requirements for the runways and associated taxiways. It is anticipated that the EA Consultant will perform the following analyses as part of the EA:

- Conduct runway length analysis for each runway
- Establish the design standards to be applied to each runway and its parallel taxiway network
- Document designated Hot Spots and other potential areas identified under the FAA's Runway Incursion Mitigation (RIM) program.
- Identify incompatible land uses within each runway protection zone (RPZ) will also be identified as part of the EA
- Define pavement design strength requirements for all runways and associated taxiway networks
- Identify potential enhancements to instrument approach capabilities and the associated NAVAID/equipment requirements
All analyses performed during the EA will be provided to R&A and appropriate sections will be incorporated into the demand/capacity assessments and establishment of facility requirements for the HWO Master Plan.

Other study elements to be performed by the R&A Team include:

- **Airfield Capacity Review** - R&A will perform a cursory review of the airfield capacity estimates that were generated for the previous HWO Master Plan. This review will verify and validate the hourly capacity and annual service volume estimates utilizing the methodologies prescribed in Chapter 2 of FAA Advisory Circular 150/5060-5 (Change 2), Airport Capacity and Delay. Consideration for the FAA’s South Florida Metroplex initiative and other NEXTGEN technologies would be given. The airspace and NAVAID siting criteria associated with these proposed instrument approach improvements, if any, will be defined.

- **Historical Weather Data** - R&A will also assemble and analyze 10-years of historical wind and weather data. Ceiling, visibility, wind speed and direction will be analyzed to develop a wind rose, assess existing wind coverage and determine the percentage of observations in visual and instrument meteorological conditions.

- **Airfield Design Standards** - R&A will also establish the design standards for all movement areas outside of the runway parallel taxiway networks, including taxiways, holding bays, and aircraft run-up areas. Aircraft parking aprons and associated taxilanes will be evaluated separately in conjunction with the facilities that they serve. It will also identify existing airfield movement areas in which a modification to design standards (MOS) has been issued. The FAA’s recommended airfield pavement geometry requirements prescribed under FAA Advisory Circular 150/5300-13A, *Airport Design*, will be summarized, as well as the pavement marking and lighting standards.

- **Building Restrictions** - R&A would define the areas that would either preclude or restrict future facility development or restrict height limitations associated with the baseline airfield conditions (existing airfield and planned). These limitations may be associated with object free areas, obstacle free zones, runway protection zones, runway visibility zones, airspace surfaces (Part 77 and TERPS), and air traffic control (ATC) line-of-sight requirements. The building restrictions associated with the airspace surfaces would be limited to confines of the existing airport property boundary.

Airfield facility needs will be identified in terms of linear feet, strength, separation, clearances, etc. and will be compared to existing facilities to identify excess or deficient facility capacity or capability. Where appropriate, the airfield facilities will be linked to activity demand thresholds or triggers as a means of determining the point at which demand is sufficient to warrant the improvement.

**II.2B: Landside Infrastructure**

Based upon the inventory of landside facilities and the Aviation Activity Forecasts developed in Task 4, the demand for on-airport roadways will be compared to current capacity to determine facility requirements. This assessment excludes the analysis of off-airport roadways.
Roadway Demand/Capacity: A roadway demand/capacity spreadsheet model will be developed to estimate the roadway demands and capacity for the on-airport roadway system on a link-by-link basis. Roadway capacity will vary based on the number of roadway lanes and characteristics of roadway segment using airport-specific industry-standard capacity assumptions based on roadway speed. Calculate on-airport roadway system LOS for the existing roadway system as a function of roadway demand divided by capacity.

On-airport roadway requirements will be based on future demand, and discussed in terms of number of traffic lanes, access points, intersection congestion, and level of service. Specifically, R&A will identify anticipated roadway lane deficiencies and the number of additional lanes required to provide an acceptable level of service for the future years 2020, 2025 and 2035.

Off-airport roadways will also not be assessed from demand-capacity standpoint however; existing traffic studies and existing planning studies will be reviewed to identify off-airport roadway networks that support traffic to/from the Airport which will require improvements by FDOT or other local planning agencies in order to support the traffic volumes expected to be generated at HWO.

II.2C: Fixed Base Operator (FBO) and General Aviation (GA) Facilities
The establishment of FBO and GA facility requirements will encompass a demand/capacity assessment and quantification of future facility requirements for existing FBO and GA facilities at HWO. Consideration for pending tenant facility expansion and development will be given. The information collected from the GA/FB tenants during the inventory effort and aviation activity forecasts will be utilized to establish planning ratios for these facilities. These planning ratios will serve to determine the demand levels that would trigger additional facility expansion and quantify the future facility requirements.

General aviation facility requirements will be quantified as needed to meet projected levels of demand expressed in the Aviation Activity Forecast and the alternate demand scenarios based on the demand/capacity analysis for GA facilities. Facility requirements will be expressed in terms of gross area, linear feet, or other basic units to determine excess or deficient capacity. Contingencies for drainage, landscaping, and taxilane accessibility will also be established, so that the gross requirements for facilities can be quantified. This assessment will quantify future development items needed to maintain an adequate level of service, function, and operation at the Airport.

The demand/capacity analysis and facility requirements will consider facility requirements for:

- Aircraft ramp and parking area
- T-hangars
- Conventional hangar facilities
- FBO terminals
- Flight training facilities
- Aircraft maintenance and repair shops
- Vehicle parking areas
- Other general aviation facilities that reside at HWO
All GA/FBO facility requirements will be established on a gross area (square footage) basis. The facility requirements will be summarized in tabular format to demonstrate the incremental requirement necessary to satisfy the projected aviation activity levels projected for 2020, 2025, 2030, and 2035. The tables will also identify the anticipated year and activity levels in which the existing facilities are expected to reach capacity, therefore triggering the demand for additional facility development.

II.2D: Airport Support Facilities
The goal of this task is to perform a demand-capacity assessment for various airport support facilities and establish future facility requirements at HWO. The aviation support facility requirements will be summarized in tabular format to demonstrate the incremental requirement necessary to satisfy the projected aviation activity levels projected for 2015, 2020, 2025, 2030, and 2035. The tables will also identify the anticipated year, activity levels, or event in which the existing facilities are expected to reach capacity, therefore triggering the demand for additional facility development. The support facilities to be evaluated include:

- Air traffic control tower
- Airport maintenance and equipment storage
- Airport administration and management
- Aircraft rescue and fire fighting
- Aircraft fueling and fuel storage
- FAA facilities
- Airport security and police
- Other tenants and facilities

II.2E: Facility Requirements Chapter
A Facility Requirements Chapter will be prepared to summarize the results of the demand capacity assessments and resulting facility requirements. Three submittals of the Facility Requirements Chapter would be provided, each in MSWord and portable document file (PDF) formats, as outlined below:

- Preliminary Draft for BCAD review and comment
- Final Draft for FAA/FDOT review and comment

The second round of comments/revisions will be incorporated into the draft chapter and then remain until final comments are solicited at submission of the draft Master Plan Update Report.
Assumptions and General Comments:

- BCAD will be conducting an Environmental Assessment (EA) for runway safety improvements at HWO concurrently with this Facility Requirements effort. The EA is to be performed separately under another contract. It is anticipated that the EA will include a definition of facility requirements the runways and associated parallel taxiway networks and NAVAID facilities at HWO. To ensure consistency and avoid duplication of efforts, the airfield facility requirements associated with the EA will be incorporated into the Facility Requirements Chapter prescribed herein and supplemented with other airfield facilities (taxiways/taxilanes, apron areas, etc.).

Items of Work Not Included in Scope:

- Airfield delay assessments
- Runway length analyses (to be performed by separately under a separate contract)
- Assessment of runway design standards
- FBO terminal space programming
- Assessment of military installations
- Assessment of off-airport roadways

Supporting Sub-Consultant
Basulto Management Consulting, Inc.

Data & Resources Required From BCAD or Other Parties

- Data collected during the Inventory of Existing Conditions
- FAA/FDOT approved Aviation Activity Forecasts

Deliverables

A detailed narrative report summarizing the results of the demand/capacity analyses and facility requirements including supporting graphic exhibits and tables:

- Preliminary Draft for BCAD review and comment
- Final Draft Demand/Capacity Assessment and Facilities Requirements Chapter in Microsoft Word and PDF format for BCAD, FDOT and FAA review and comment
- Electronic deliverables prepared as part of this task including PowerPoint presentations, AutoCAD and Excel workbooks
Overview and Scope of Services
A series of airport development concepts to satisfy the 2035 demand levels will be generated and evaluated. In consultation with BCAD staff and stakeholders (PAC and TAC), a preferred development concept will be selected and refined.

In conjunction with the EA for the HWO airfield safety enhancements that are to be performed under a separate contract, it is anticipated that the EA Consultant will be evaluating a series of airfield development alternatives for all four runways and their associated parallel taxiway network. In order to conserve BCAD resources and avoid duplication of efforts, R&A will work closely with the EA Consultant and BCAD staff to define the airfield development alternatives for the runways and associated parallel taxiway network. It is anticipated that the EA Consultant will consider the following airfield alternatives:

- No action alternative
- Meet need through other area airports
- Improvement to runways at HWO to meet the defined Purpose and Need
- Airport sponsor’s proposed action

All analyses performed during the EA will be provided to R&A and appropriate sections will be incorporated into the alternatives analysis for the HWO Master Plan.

The identification and evaluation of long-range development concepts will be comprised of the following sub-tasks:

II.3A: Identification and Evaluation of Initial Range of Development Alternatives
An initial range of long term development alternatives will be developed. These initial alternatives will be comprised of preliminary illustrations of future facility and infrastructure layouts necessary to satisfy the 2035 facility requirements. Concepts will consider both GA/FBO and support facilities, as well as future airfield and landside enhancements identified during prior demand-capacity and facility requirements efforts. Once the initial ranges of alternatives are developed for each airport, a screening evaluation will be conducted using qualitative screening criteria and summarized. The screening analysis will result in a short-list of up to three alternatives to be subject to further refinement and evaluation.
II.3B: Evaluate and Select Preferred Long-Range Development Concepts
The three short-listed development concepts will be further evaluated utilizing quantitative evaluation criteria. The evaluation criteria will be defined and presented to BCAD staff for review and concurrence. The evaluation criteria may include, but is not limited to:

- Operational performance
- Rough Order of Magnitude costs
- AIP and FDOT funding eligibility
- Constructability
- Potential environmental effects

A one-day planning workshop will be conducted at BCAD’s offices to review the initial range of airport development alternatives, obtain consensus on the screening analysis and present the preliminary findings of the evaluation of short-listed development concepts. Input from the various stakeholders will be documented and form the basis for the final evaluation and selection of a preferred development alternative. The workshop will conclude with the selection of a preferred long-range development concept to be carried forward for further refinement and incorporation in the HWO Airport Layout Plan. The R&A Team will prepare all meeting materials (agendas, sign-in sheets, graphics) for the workshop, and distribute meeting notes to all attendees after the workshops.

II.3C: Refine Preferred Long Range Development Concepts
The preferred long range development concepts will be refined. Detailed facility layouts will be generated to depict building location and configurations, apron limits, access taxiways/taxilanes, vehicular parking areas, and access/service roads. Surplus airport property that is not needed for aeronautical purposes will also be identified and identified for consideration for non-aeronautical purposes.

II.3D: Alternatives Chapter
An Alternatives Chapter will be prepared to summarize the results of the demand capacity assessments and resulting facility requirements. Three submittals of the Alternatives Chapter would be provided, each in MSWord and portable document file (PDF) formats, as outlined below:

- Preliminary Draft for BCAD review and comment
- Final Draft for FAA/FDOT review and comment

The second round of comments/revisions will be incorporated into the draft chapter and then remain until final comments are solicited at submission of the draft Master Plan Update Report.

Assumptions and General Comments:

- Future development concepts will be predicated on the facility requirements generated during the Demand/Capacity Assessments and Facility Requirements. Consideration for the potential redistribution of general aviation demand from FLL will also be given.
Items of Work Not Included in Scope:
Evaluation of runway development alternatives
Market assessments for non-aeronautical development opportunities
Quantification of land acquisition costs

Supporting Sub-Consultants
Basulto Management Consultants, Inc.

Data & Resources Required From BCAD or Other Parties
Consensus on preferred long-range development concept

Deliverables
A detailed narrative report summarizing the results of the Alternatives analyses including supporting graphics, exhibits, and tables:

- Preliminary Draft Alternatives Chapter in Microsoft Word and PDF format for BCAD review and comment
- Draft Alternatives Chapter in Microsoft Word and PDF format for BCAD, FDOT and FAA review and comment
- Electronic deliverables prepared as part of this task including PowerPoint presentations, AutoCAD and GIS files
Overview and Scope of Services
The purpose of this task is to identify and qualitatively evaluate potential environmental effects associated with the implementation of HWO’s preferred long range development concept. This will serve to identify potential environmental issues and the level of environmental processing that would be required in accordance with the National Environmental Policy Act (NEPA) in order to implement the preferred long range development concept for HWO. This effort will be performed in accordance with the methodologies prescribed in FAA Advisory Circular 150/5070-6B, *Airport Master Plans*.

II.4A: Document Potential Environmental Effects
Based on the identification of the preferred development concept, summarize the purpose and need for the recommended development plan and generally describe potential environmental effects in terms of the categories of impact defined in FAA guidelines as identified in FAA Order 1050.1E, Environmental Impacts: Policies and Procedures, and FAA Order 5050.4B, National Environmental Policy Act (NEPA) Implementing Instructions for Airport Actions.

II.4B: Define NEPA Processing Requirements
An overview of environmentally sensitive features in the airport environs that can affect day to day decisions as well as longer term strategies will be summarized. It will also define a strategy for subsequent NEPA processing that will consider the timing and need for NEPA processing to ensure that facility development can occur in a timely manner.

II.4C: Environmental Overview Chapter
An Environmental Overview Chapter will be prepared to document the potential environmental effects associated with implementing the preferred development concept for HWO and outline a strategy for subsequent NEPA processing anticipated for its implementation. Two submittals of the Environmental Overview Chapter would be provided, each in MSWord and portable document file (PDF) formats, as outlined below:

- Preliminary Draft for BCAD review and comment
- Final Draft for FAA/FDOT review and comment

The second round of comments/revisions will be incorporated into the draft chapter and then remain until final comments are solicited at submission of the draft Master Plan Update Report.
Assumptions and General Comments:

- BCAD’s long-standing waste and recycling program already achieves much of the intent of an airport recycling, reuse, and waste reduction plan as defined in the FAA’s guidance.
- R&A will conduct an on-site interview with BCAD staff leading the Airport’s waste and recycling program to compile existing information on waste and recycling. The on-site interview will include a facility walk-through.
- BCAD will provide documentation on the Airport’s existing waste and recycling program, as available, including data and information such as annual quantities of waste by waste stream, program costs, policies and procedures, results from previous waste audits, future plans, and current opportunities and challenges.

Items of Work Not Included in Scope:

- Preparation of formal NEPA Documents (Environmental Assessments/Impact Statements, Categorical Exclusions)
- Stormwater modeling
- Aircraft noise modeling
- Air quality modeling
- Historic, archaeological, architectural, and/or cultural resource surveys
- Phase I Environmental Site Assessment(s)
- Wetland/floodplain boundary surveys
- Wildlife and habitat surveys

Supporting Sub-Consultant
Basulto Management Consulting, Inc.

Data & Resources Required From BCAD or Other Parties

- BCAD selection of a preferred long range development concept
- Environmental Inventory from EA for Runway Safety Enhancements
- Items known from prior environmental and planning studies, documents and databases

Deliverables

A detailed narrative report summarizing the results of the alternatives analysis including supporting graphic exhibits and tables

- Preliminary Draft Environmental Overview Chapter in Microsoft Word and PDF format for BCAD review and comment
- Draft Environmental Overview Chapter in Microsoft Word and PDF format for BCAD, FAA and FDOT review and comment
- Electronic deliverables prepared as part of this task including PowerPoint presentations, AutoCAD and GIS files
Overview and Scope of Services
In order to establish a Capital Improvement Program (CIP) that can be realistically implemented, the
capacity needs for HWO, as well as its ongoing maintenance and existing facility rehabilitation needs
must be considered. Therefore, the CIP review will include a collection of projects that increase or
improve the capacity of HWO and which are necessary to accommodate future demand levels and
types. These projects will be identified through the master planning analysis described in the
previous tasks. In addition, the CIP will also reference and recognize those projects that are
intended to improve existing airport deficiencies or restore the physical condition of existing
facilities and infrastructure at the Airport.

The short-term (5-year), mid-term (10-year), and long-term (20-year) CIP’s will be developed
following the refinement of the preferred long-range airport development concept. The CIP will
define facility development consistent with those specified in the Facility Requirements analysis.
However, the implementation for these facilities will be linked to triggers of activity rather than
specific timelines. This will ensure that facility development is initiated and implemented consistent
with the demand for such facilities.

The CIP Review effort will be comprised of the follow sub-tasks.

II.5A: Establish Preliminary CIP Project Priorities and Sequencing
BCAD staff will provide a summary of the current CIP needs and priorities for HWO. In
consultation with BCAD staff, each project in the preferred long range development concept will be
assigned to a particular planning term (short term, intermediate term, or long term). Each project will
be individually described in sufficient detail to describe the nature and purpose of the project,
identify potential conflicts with other projects, and identify projects that must occur to enable
completion.

II.5B: Refine Rough Order of Magnitude (ROM) Cost Estimates
Cost estimates will be prepared for each project in the recommended development plan for the 20-
year planning horizon, with additional detail provided for the initial near-term 5-year capital
improvement projects. The Cost estimates will be provided on an item of work basis. The estimates
will be prepared with sufficient detail to provide the level of confidence expected for use in BCAD’s
financial planning and programming efforts.
II.5C: Funding Source Strategies/Implementation Schedule

The purpose of this task is to identify the funding sources available to support the planned capital development at HWO, and to determine the financial feasibility of BCAD undertaking and implementing its planned capital development. Potential funding sources for the planned capital development may include, but not be limited to: federal grants, both entitlement and discretionary; state grants; passenger facility charges (PFC), both on a pay-as-you-go basis and leveraged basis; general airport revenue bonds; BCAD funds; and other, which may include third-party financing, special facility financing, etc. The determination of the preferred funding source strategy will be based, in part, on the availability of each funding source; market conditions and the ability of BCAD to access any particular source; financial impacts to the airlines serving FLL; and BCAD policies and preferences. It is anticipated that adjustments to the phasing plan may be necessary to accommodate cash flow and debt funding considerations. These refinements will be conducted in consultation with BCAD staff and result in the development of implementation schedule for the preferred long range development concept for HWO.

Assumptions and General Comments:

- R&A will work with BCAD in the evaluation of alternatives to arrive at the preferred funding options that best support BCAD’s goals and objectives. R&A will not be involved in the development of the financial projections for operating and maintenance expenses and nonairline revenues at HWO.

- The CIP Implementation Plan will be incorporated into the ALP Narrative Report

Items of Work Not Included in Scope:

- Debt capacity analysis
- Assessment of BCAD rates and charges impacts
- Airport Management CIP Implementation Guide

Supporting Sub-Consultant

Basulto Management Consulting, Inc.

Data & Resources Required From BCAD or Other Parties

BCAD input on financial feasibility of the individual CIP priorities associated with the preferred long range development concept

Deliverables

CIP Technical Memorandum

- Preliminary Draft Technical Memorandum in Microsoft Word and PDF format for BCAD review and comment
- Draft Technical Memorandum in Microsoft Word and PDF format for BCAD, FAA and FDOT review and comment
- Electronic deliverables prepared as part of this task including PowerPoint presentations, AutoCAD and GIS files
Overview and Scope of Services
This effort is intended to update the existing Airport Layout Plans package to reflect existing conditions obtained through digital mapping developed as part of the AGIS task and illustrate planned development reflective of the preferred development alternative derived during the Master Plan Update. The Airport Layout Plan (ALP) will be prepared in accordance with FAA standards as defined in FAA Advisory Circular 150/5070-7, Airport Master Plans, FAA ARP Standard Operating Procedure (SOP) 2.00, Review and Approval of Airport Layout Plans (ALPs), and FAA Advisory Circular 150/5300-13A, Airport Design. The ALP set will be prepared as a paper-copy ALP and will include the ALP Narrative Report Chapter and completed ALP checklist.

II.6A ALP Drawings
The ALP drawings that will be updated include:

- **Title Sheet/Cover Page** - A title sheet will be prepared in accordance with the FAA checklist to serve as the drawing set cover sheet. This title sheet will include pertinent information such as the airport name, owner/operator, location, and plan set preparer. An index of drawings, graphic representations of the airport location (including the identification of the county the Airport is located in) and airport vicinity will also be presented on the title sheet.

- **Existing Airport Layout Plan** - Utilizing new digital mapping for the Airport, a new drawing will be created to identify facilities and geographical features at the Airport as they currently exist. This drawing will include existing structures, pavements, imaginary surfaces, NAVAIDs (visual and instrument), ground contours, runway protection zones, runway safety areas, property interests, and other pertinent dimensional data recommended by the FAA.

- **Future Airport Layout Plan** - Utilizing new digital mapping and other available resources, R&A will create a Future ALP to reflect the recommended long range development concept to accommodate the future facility needs as identified in the updated Master Plan.

- **Airport Data Sheet** - This sheet contains data specific to the Airport Layout Plan sheet. This data includes the wind roses for the Airport’s runways, runway data, safety separation distances, declared distance charts, elevations of specific Airport, runway and taxiway points, etc. Existing and proposed modifications to FAA airport design standards will be identified and delineated in table format along with either the waiver allowing the modification or the proposed method of addressing the modification.

- **Airport Airspace Drawing** - This drawing will depict all relevant Federal Aviation Regulations (FAR) Part 77 Imaginary Surfaces as they relate to the Airport’s immediate...
airspace in a plan and profile view. The plan will illustrate the ultimate runway configuration of the airfield with key elevations of the surfaces and stationing from the runway ends being referenced. Fifty (50) foot contour intervals will be shown for all FAR Part 77 sloping imaginary surfaces. This sheet will depict objects violating FAR Part 77 surfaces that have not been identified on the ALP or inner approach drawings.

- **Inner Approach and Provide View Drawings** These drawings will depict plan and profile views of the inner portion of the approach to each ultimate runway end at the Airport. The plan/profile extents will cover from the referenced runway out to a point where the approach surface reaches a 100-foot height above the runway end. The new digital base mapping will be used to identify obstructions to navigable airspace. In accordance with the FAA checklist, these drawings will depict the imaginary surfaces in 14 CFR Part 77, Objects Affecting Navigable Airspace, threshold siting surfaces, Glideslope Qualification Surfaces (GQS) if applicable, and any other applicable surfaces associated with TERPS, Changes 1 through 26.

- **Departure Surface** - Utilizing new digital mapping and other available resources, these drawings will depict the departure surfaces for each runway as defined in Paragraph 303 of AC 150/5300-13A, Airport Design. The drawing will include both plan and profile views and obstruction data tables. These drawings do not exist in the current ALP package and therefore will need to be created.

- **Land Use Map** - This drawing will depict the existing and recommended use of Airport property and land in the immediate vicinity of the Airport. The land uses will be depicted by general use categories such as aviation, commercial, residential, industrial, recreational, public use, etc. The specific designations to land uses within the airport property limits will be discussed with BCAD staff and revised as directed to reflect the categories that are desired. The off-airport land uses in the immediate vicinity of the Airport will be defined based on the Broward County zoning and land use maps.

- **Airport Property Map** - This drawing will depict the existing airport property boundary as well as proposed acquisition areas and avigation easements. All existing property ownership and avigation easement information associated with the property map will be provided by BCAD staff for inclusion on the Airport Property Map.

**II.6B ALP Narrative Report and Checklist**

This task will include the preparation of an ALP Narrative Report Chapter that will document, in narrative form, the proposed development plan reflected on the sheets of the traditional ALP set. This narrative will include discussions of any modifications to FAA standards, including the justification of any new modification requests. In addition, a half-size version of the ALP set (11”x17”) and eALP module set will be printed and included in the report. The ALP Checklist contained in SOP 2.00 will also be completed and included as an appendix to the narrative report.

**II.6C ALP Plans Package Submittals**

Four submittals of the ALP plans and Narrative Report Chapter would be provided in both hardcopy portable document file (PDF) format, as outlined below:

- Preliminary Draft for BCAD review and comment
- Revised Draft for BCAD review and comment
II.6D: Upload Future eALP Components to FAA Portal

Once the ALP plans package is conditionally approved by the FAA, the future eALP components will be uploaded to the FAA’s portal.

Assumptions and General Comments:

- This task considers an update to the existing ALP for HWO. All existing ALP sheets will be provided in AutoCAD format prior to the commencement of this task.
- The preparation of departure surface drawings will require the creation of new sheets in association with the ALP plans package.
- The FAA eALP portal is currently under development, but is anticipated to operational prior to concluding the ALP update efforts prescribed herein.

Items of Work Not Included in Scope:
- Updates to the Quadrant Detail Plans
- Updates to the Utilities Plan sheet
- Researching of property acquisition and avigation easements

Supporting Sub-Consultant
Basulto Management Consulting, Inc.

Data & Resources Required From BCAD or Other Parties
- Existing ALP drawing sheets in AutoCAD format
- Property ownership information in conjunction with the airport property map

Deliverables

- Preliminary Draft ALP drawings and Narrative for BCAD review and comment in hardcopy format (4 copies)
- Revised Draft ALP drawings for BCAD review and comment in hardcopy format (4 copies)
- Final Draft ALP drawings and Narrative for FAA/FDOT review and comment in hardcopy format (6 copies)
- Final ALP drawings and Narrative for FAA/FDOT approval in PDF and hardcopy format (10 copies, including two FAA approved copies for FDOT Central Office)
Overview and Scope of Services
The purpose of this task is to develop the iALP and the Joint Automated Capital Improvement Program (JACIP) tools for the HWO Master Plan Update, to assist BCAD staff in the management and maintenance of airspace data, and the submittal of CIP project data to the Florida DOT’s Florida Aviation Database (FAD).

11.7A: Incorporation of Airports GIS Attribution Tool in iALP/ AutoCAD
The attribution section of AC 150/5300-18C will be reviewed with BCAD staff to provide a good understanding of the non-graphic data requirements that need to be collected as part of the AGIS effort in a separate task. Any attribution data deemed not accessible and/or non-existent will be documented and identified to the FAA. If additional attribution data is needed, it will also be documented.

Attribution tools that include the AC 150/5300-18C standard tables both in the AutoCAD Map and iALP environments will be made available to BCAD. The table definitions may be expanded if required for additional attribution data that will be useful in other applications besides the mandated FAA requirements. The R&A Team will implement the AutoCAD Map and iALP attribution edit tools and program any additional fields to the tools to accommodate BCAD requirements. This feature will provide BCAD staff an easy to use tool to maintain the attribution data by all departments that will automatically reside in one database.

11.7B: Acquire/Share Other Sources of Data Required & Conduct Obstruction Analysis
On top of the Airports GIS data collected, other sources of data that will be reviewed are the National Flight Data Center’s (NFDC) National Airspace System Resources (NASR) data (FAA’s main source of airport data to include facility, runway, etc.), NGS’s Digital Obstruction File (DOF), Obstruction Chart (OC), OE/AAA proposed development both on and off airport, any new facility data and plans from any master planning data. Also, any County legacy CAD and GIS data (properties, utility, planimetric, planned, etc.) will be converted to GIS format as per the standards and incorporated into the iALP. This will include the verification of these data sources to identify questionable data in terms of accuracy and purpose.

Once the new obstruction points have been mapped (in a separate task) as per FAA Advisory Circulars (AC) 150/5300-16, 17b and 18C, these points will be utilized to process penetrations to Part 77 and TERPS surfaces already included into the iALP. Analytical reports, AutoCAD and Google three-dimensional graphics will be developed for discussions with BCAD. Any penetrations to the TERPS and Part 77 surfaces that need to be mitigated will be discussed with BCAD prior to
FAA submittal. Final understandable and useful graphics will be provided to BCAD for use in obstruction clearing along with a maintainable database within the iALP. In addition, the Part 77.19 penetrations will be developed and utilized for the ALP airspace sheets development.

II.7C: Identification and Approval of Planned Data to be Incorporated
After the completion of the existing base data files, meetings with BCAD will be conducted to identify the planning data to be incorporated. It is the goal of this task to meet with BCAD to identify and determine which planned projects are to be included for this ALP effort. As a minimum the permanent projects that have been FAA reviewed and approved through the Non-Rule Action (NRA) process will be extracted from the FAA’s OE/AAA system. Discrepancies on any previous planning efforts will be identified and corrected. All final data approved will be posted to the existing iALP.

II.7D: Incorporation of Current CIP Data into the iALP/JACIP
In Phase I, prior to determining the Master Plan Update projects, The R&A Team will gather existing data from the Airport’s approved CIP, and format it for use in Florida DOT’s Florida Aviation Database (FAD) and the Joint Automated Capital Improvement Program (JACIP). The R&A Team will also develop capability for tracking of project and funding information by BCAD staff.

II.7E: Incorporation of Future Development into the iALP
After FAA approval of the ALP Set, The R&A Team will update the iALP created in Phase I to reflect the future development program at HWO. CAD and GIS data will be created from the ALP Set files and other electronic data generated as part of the Master Plan Update. All final data approved will be posted to the iALP.

I.7F: JACIP Formatting of CIP
Building on the Phase I deliverables, all final Master Plan Update CIP project data that is approved will be formatted for use in Florida DOT’s Florida Aviation Database (FAD) and the Joint Automated Capital Improvement Program (JACIP).

Assumptions and General Comments:
None

Items of Work Not Included in Scope:
Other efforts not prescribed herein.

Supporting Sub-Consultant
None

Data & Resources Required From BCAD or Other Parties
As specifically noted under the Scope of Services above
Deliverables

- iALP/AutoCAD MAP/GIS and attribute tools implementation
- Analytical reports of any penetrations to any surfaces
- AutoCAD 3D graphics of penetrations
- Google 3D data files of penetrations
- Population of iALP obstruction database
- Part 77 obstruction data set for use on the ALP Part 77 sheets
- iALP planned vector and attribution ALP data
- JACIP compatible project file for upload
- ACIP Web-Based program
Overview and Scope of Services
In this task, the R&A Team will implement the approved elements of the Stakeholder Engagement Strategy and Public Outreach Program developed under a separate Phase I task. The effort scoped herein will focus on the public and stakeholder meetings.

Activities related to Program implementation include:
Schedule and coordinate logistics for stakeholder meetings according to the identified forum and vehicle for each group (i.e. public meetings, workshops, individual meetings, etc.) – for budgeting purposes, it has been assumed that Phase II of the HWO Master Plan Update will include:

(a) one (1) 3-hour public meetings, with each meeting being attended by R&A’s Officer-in-Charge, R&A’s Project Manager, one technical specialist/subject matter expert from R&A, and up to two non-R&A individuals from the R&A Team;

(b) up to two (2) Project Advisory Committee and two (2) Technical Advisory Committee meetings (assuming the meetings with both Committees would occur in the same day), with each meeting having a 2-hour duration and anticipated to be attended by R&A’s Officer-in-Charge, R&A’s Project Manager, one technical specialist/subject matter expert from R&A, and up to one non-R&A individual from the R&A Team;

(c) one, 4-hour (half day) workshop meeting being attended by R&A’s Officer-in-Charge, R&A’s Project Manager, one technical specialist/subject matter expert from R&A, and up to two non-R&A individuals from the R&A Team; and

(d) up to two (2) individual meetings, with each meeting having a 1.5-hour duration and assumed to be attended by R&A’s Officer-in-Charge and R&A’s Project Manager (or alternately, in lieu of the project manager, these meetings could be attended by one technical specialist/subject matter expert from R&A or from another Team member firm, along with R&A’s Officer-in-Charge).

However, these assumptions are simply for budgeting purposes, the resulting hours and budget will be compiled within the budget allowance for this task and utilized by BCAD at its discretion, as a time and materials budget. Thus, BCAD may decide to have more or less of any meetings or workshop type described above. They may also choose to not undertake one or more of the meetings or workshop sessions noted above, and/or may decide to not fully exhaust the budget established for this task.
• Update the stakeholder database or contact list (as necessary)
• Contact stakeholders accordingly to invite them to participate in meetings, forums and other media
• Develop agenda and communication materials and messaging relevant to each stakeholder group in close coordination with BCAD
• Identify, engage and include relevant team members for appropriate participation for each stakeholder meeting and venue
• Conduct stakeholder events and meetings with a focus on interactive dialogue to encourage meaningful input
• Document and record comments, questions and other feedback from each meeting and event
• Summarize findings and key trends from outreach initiative

Assumptions and General Comments:
• The budget established for this task is meant to be flexibly utilized at BCAD’s discretion in order to maximize the value of the Stakeholder Engagement and Public Outreach Program formulated for the HWO Master Plan Update. Thus, BCAD may decide to have more or less of any meetings or workshop type described above. They may also choose to not undertake one or more of the meetings or workshop sessions noted above, and/or may decide to not fully exhaust the budget established for this task.

Items of Work Not Included in Scope:
Transportation, parking or meals for participants of these meetings/workshops.
Expenses for advertisement of meetings/workshops

Supporting Sub-Consultant
Basulto Management Consulting, Inc.
Dickey Consulting Services, Inc.

Data & Resources Required From BCAD or Other Parties
List of Stakeholders desired by BCAD for participation in each meeting or workshop.

Deliverables
• Final meeting schedule
• Updated database/contact list of stakeholders
• Meeting support materials (presentations, handouts, etc.)
• Meeting minutes and related documentation from events
Overview and Scope of Services
The final Master Plan Update deliverables will represent the formal documentations that will become a matter of public record approvals. These documents will include an Executive Summary, a Draft Master Plan Update Report, and a Final Master Plan Update Report.

II.9A: Prepare Executive Summary
R&A will prepare and submit a draft Executive Summary that summarizes the results of the aviation forecasts, the facility requirements, the recommended plan and Capital Improvement Program. The Executive Summary shall include approximately 15 to 20 pages with color exhibits.

II.9B: Assemble Draft Airport Master Plan Update Report
To insure proper coordination of the planning effort and assure agreement between the R&A Team, Broward County, and FAA, a Draft Airport Master Plan Report will be submitted for formal review. The draft report will contain all Master Plan Chapters prescribed herein (revised based on comments provided on original drafts), ALP drawings and the financial evaluation. The draft documents and plans will also be submitted to the FAA for review.

II.9C: Finalize Airport Master Plan Update Report
The final airport master plan update report consolidating all previous analyses will be prepared after all agency and participants have made their comments on the draft final report and BCAD has directed the R&A to incorporate these comments into a final report. Digital files of all final chapters and associated graphics will be provided to the BCAD in a readable CD format. A total of ten (10) PDF versions will be provided on CD’s.

Assumptions and General Comments:
The costs associated with printing and reproduction are speculative and therefore will be determined upon initiation of this task.

Items of Work Not Included in Scope:
Other documents not prescribed herein.
Supporting Sub-Consultant
Basulto Management Consulting, Inc.

Data & Resources Required From BCAD or Other Parties
BCAD Review comments from Draft submittals

Deliverables

- PDF version of the Draft Executive Summary for BCAD review and comment
- Executive Summary Report in both hardcopy (quantity to be determined) and an electronic file version in Adobe Acrobat (PDF) format
- Draft Airport Master Plan Update Report in both hardcopy (quantity to be determined) and an electronic file version in Adobe Acrobat (PDF) format
- Final Airport Master Plan Update Report in both hardcopy (quantity to be determined) and an electronic file version in Adobe Acrobat (PDF) format
HWO Scope of Work Lump Sum Breakdown

**Phase I**
1. It is anticipated that Phase I will be completed 12 months after Notice to Proceed (NTP).
   A detailed schedule for Phase II will be completed as part of Phase I subsequent to NTP.
2. Total negotiated lump sum fee for Phase I is $301,869.00

**Phase II**
3. It is anticipated that Phase II will be completed 24 months after the completion of Phase I.
4. The total negotiated lump sum fee for Phase II is $268,922.00

Total negotiated lump sum for all phases of the HWO Master Plan Update is $570,791.00
ATTACHMENT V
EXHIBIT B
SALARY COSTS

(THE REMAINDER OF THIS PAGE IS INTENTIONALLY LEFT BLANK.)
EXHIBIT B  
SALARY COSTS

Project No: RFP# R1277707P1  
Project Title: Airport Master Plan Update Consultant Services  
Consultant/Subconsultant Name: Ricondo and Associates, Inc. (Prime Consultant)

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FRINGE = HOURLY RATE X FRINGE (54.00) %
PROFIT = (HOURLY RATE + OVERHEAD + FRINGE) X PROFIT (7.00)%

MULTIPLIER = (HOURLY RATE + OVERHEAD + FRINGE + PROFIT) / HOURLY RATE

3.00
EXHIBIT B
SALARY COSTS

Project No: RFP# R1277707P1
Project Title: Airport Master Plan Update Consultant Services
Consultant/Subconsultant Name: Acai Associates, Inc.

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FRINGE  = HOURLY RATE X FRINGE (16.91)%
PROFIT  = (HOURLY RATE + OVERHEAD + FRINGE) X PROFIT (9.00)%

MULTIPLIER = (HOURLY RATE + OVERHEAD + FRINGE + PROFIT) / HOURLY RATE

2.88
## EXHIBIT B
### SALARY COSTS

Project No:  RFP# R1277707P1

Project Title:  Airport Master Plan Update Consultant Services

Consultant/Subconsultant Name:  Arora Engineers, Inc.

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Multiplier of 2.59 is calculated as follows:

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FRINGE = HOURLY RATE * FRINGE (36.58)%
PROFIT = (HOURLY RATE + OVERHEAD + FRINGE) * PROFIT (9.00)%

MULTIPLIER = (HOURLY RATE + OVERHEAD + FRINGE + PROFIT) / HOURLY RATE

---

Page 222 of 249
EXHIBIT B
SALARY COSTS

Project No: RFP# R1277707P1

Project Title: Airport Master Plan Update Consultant Services

Consultant/Subconsultant Name: Basulto Management Consulting, Inc.

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FRINGE = HOURLY RATE X FRINGE (8.02) %
PROFIT = (HOURLY RATE + OVERHEAD + FRINGE) X PROFIT (9.00)%

MULTIPLIER = (HOURLY RATE + OVERHEAD + FRINGE + PROFIT) / HOURLY RATE  

3.00
## EXHIBIT B
### SALARY COSTS

**Project No:** RFP# R1277707P1  
**Project Title:** Airport Master Plan Update Consultant Services  
**Consultant/Subconsultant Name:** Craven Thompson & Associates, Inc.

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Multiplier of 2.87 is calculated as follows:  
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PROFIT = (HOURLY RATE + OVERHEAD + FRINGE) X PROFIT (9.00)%  

MULTIPLIER = (HOURLY RATE + OVERHEAD + FRINGE + PROFIT) / HOURLY RATE  

2.87
EXHIBIT B
SALARY COSTS

Project No: RFP# R1277707P1
Project Title: Airport Master Plan Update Consultant Services
Consultant/Subconsultant Name: Dickey Consulting Services, Inc.

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Multiplier of 3.00 is calculated as follows:
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FRINGE    = HOURLY RATE X FRINGE (39.27)%
PROFIT    = (HOURLY RATE + OVERHEAD + FRINGE) X PROFIT (9.00)%

MULTIPLIER = (HOURLY RATE + OVERHEAD + FRINGE + PROFIT) /HOURLY RATE  3.00
EXHIBIT B

SALARY COSTS

Project No: RFP# R1277707P1

Project Title: Airport Master Plan Update Consultant Services

Consultant/Subconsultant Name: Florida Transatlantic Holdings, LLC.

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FRINGE = HOURLY RATE X FRINGE (00)% (See Above)
PROFIT = (HOURLY RATE + OVERHEAD + FRINGE) X PROFIT (9.00)%

MULTIPLIER = (HOURLY RATE + OVERHEAD + FRINGE + PROFIT) / HOURLY RATE

2.29
EXHIBIT B
SALARY COSTS

Project No: RFP# R1277707P1
Project Title: Airport Master Plan Update Consultant Services
Consultant/Subconsultant Name: Kimley-Horn and Associates, Inc.

FILL IN POSITIONS AS APPLICABLE

<table>
<thead>
<tr>
<th>TITLE</th>
<th>MAXIMUM HOURLY RATE ($/HR)</th>
<th>MULTIPLIER</th>
<th>MAXIMUM BILLING RATE ($/HR)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Principal</td>
<td>$102.40</td>
<td>3.00</td>
<td>$307.20</td>
</tr>
<tr>
<td>Project Manager</td>
<td>$91.36</td>
<td>3.00</td>
<td>$274.08</td>
</tr>
<tr>
<td>Chief Professional</td>
<td>$84.14</td>
<td>3.00</td>
<td>$252.42</td>
</tr>
<tr>
<td>Senior Project Professional</td>
<td>$80.30</td>
<td>3.00</td>
<td>$240.90</td>
</tr>
<tr>
<td>Professional</td>
<td>$64.44</td>
<td>3.00</td>
<td>$193.32</td>
</tr>
<tr>
<td>Planner</td>
<td>$69.72</td>
<td>3.00</td>
<td>$209.16</td>
</tr>
<tr>
<td>GIS Specialist</td>
<td>$45.20</td>
<td>3.00</td>
<td>$135.60</td>
</tr>
<tr>
<td>Junior Professional</td>
<td>$39.44</td>
<td>3.00</td>
<td>$118.32</td>
</tr>
<tr>
<td>Administrative Assistant</td>
<td>$30.30</td>
<td>3.00</td>
<td>$90.90</td>
</tr>
</tbody>
</table>

Multiplier of 3.00 is calculated as follows:

OVERHEAD = HOURLY RATE X OVERHEAD (136.60)%
FRINGE = HOURLY RATE X FRINGE (38.63)%
PROFIT = (HOURLY RATE + OVERHEAD + FRINGE) X PROFIT (9.00)%

MULTIPLIER = (HOURLY RATE + OVERHEAD + FRINGE + PROFIT) / HOURLY RATE**

3.00
EXHIBIT B
SALARY COSTS

Project No: RFP# R1277707P1
Project Title: Airport Master Plan Update Consultant Services
Consultant/Subconsultant Name: Lea+Elliott, Inc.

FILL IN POSITIONS AS APPLICABLE

<table>
<thead>
<tr>
<th>TITLE</th>
<th>MAXIMUM HOURLY RATE ($/HR)</th>
<th>MULTIPLIER X (2.82)</th>
<th>MAXIMUM BILLING RATE ($/HR)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Principal</td>
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<td>$281.38</td>
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<tr>
<td>Associate Principal</td>
<td>$79.48</td>
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<td>$224.13</td>
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<tr>
<td>Senior Associate</td>
<td>$79.48</td>
<td>2.82</td>
<td>$224.13</td>
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<tr>
<td>Senior Professional</td>
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<tr>
<td>Professional</td>
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<td>Technical Support</td>
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<td>Administrative Support</td>
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<td>$62.12</td>
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Multiplier of 2.82 is calculated as follows:
OVERHEAD = HOURLY RATE X OVERHEAD (102.89)%
FRINGE = HOURLY RATE X FRINGE (55.42) %
PROFIT = (HOURLY RATE + OVERHEAD + FRINGE) X PROFIT (9.00)%

MULTIPLIER = (HOURLY RATE + OVERHEAD + FRINGE + PROFIT) / HOURLY RATE

2.82
EXHIBIT B
SALARY COSTS

Project No: RFP# R1277707P1
Project Title: Airport Master Plan Update Consultant Services
Consultant/Subconsultant Name: Quantum Spatial, Inc.

FILL IN POSITIONS AS APPLICABLE

<table>
<thead>
<tr>
<th>TITLE</th>
<th>MAXIMUM HOURLY RATE ($/HR)</th>
<th>MULTIPLIER</th>
<th>MAXIMUM BILLING RATE ($/HR)</th>
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<tbody>
<tr>
<td>Production Manager</td>
<td>$76.70</td>
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<td>$204.02</td>
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<tr>
<td>Project Manager</td>
<td>$60.37</td>
<td>2.66</td>
<td>$160.58</td>
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<tr>
<td>Flight Department Manager</td>
<td>$63.11</td>
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<td>$167.87</td>
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<td>Image Terrain Technician</td>
<td>$27.38</td>
<td>2.66</td>
<td>$72.83</td>
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<tr>
<td>CONUS Pilot</td>
<td>$36.28</td>
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<td>$96.50</td>
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<tr>
<td>CONUS Sensor Operator</td>
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<td>ABGPS Technical Lead</td>
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<td>Imagery Processing Lead</td>
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<td>CADD Edit Technical Lead</td>
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<td>CADD Edit Technician</td>
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<td>Geomatics Supervisor</td>
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<td>$108.69</td>
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<td>Geomatics Technician</td>
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<td>$76.34</td>
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<td>Clerical</td>
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<td>$94.72</td>
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Multiplier of 2.66 is calculated as follows:
OVERHEAD = HOURLY RATE X OVERHEAD (120.29)%
FRINGE = HOURLY RATE X FRINGE (24.00) %
PROFIT = (HOURLY RATE + OVERHEAD + FRINGE) X PROFIT (9.00)%

MULTIPLIER = (HOURLY RATE + OVERHEAD + FRINGE + PROFIT) / HOURLY RATE

\[
\frac{\text{HOURLY RATE} + \text{OVERHEAD} + \text{FRINGE} + \text{PROFIT}}{\text{HOURLY RATE}} = 2.66
\]
## EXHIBIT B
### SALARY COSTS

Project No: RFP# R1277707P1

Project Title: Airport Master Plan Update Consultant Services

Consultant/Subconsultant Name: R.J. Behar & Company, Inc.

---

**FILL IN POSITIONS AS APPLICABLE**

<table>
<thead>
<tr>
<th>TITLE</th>
<th>MAXIMUM HOURLY RATE ($/HR)</th>
<th>X</th>
<th>MULTIPLIER</th>
<th>MAXIMUM BILLING RATE ($/HR)</th>
</tr>
</thead>
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<tr>
<td>Senior Principal</td>
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<tr>
<td>Principal</td>
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<tr>
<td>Chief Engineer</td>
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<td>2.77</td>
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<td>Project Manager</td>
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<td>Engineer</td>
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<td>2.77</td>
<td>$111.91</td>
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<td>Entry Level Engineer</td>
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<td>$70.39</td>
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</table>

Multiplier of 2.77 is calculated as follows:

OVERHEAD = HOURLY RATE X OVERHEAD (114.64%)
FRINGE = HOURLY RATE X FRINGE (39.54%)
PROFIT = (HOURLY RATE + OVERHEAD + FRINGE) X PROFIT (9.00%)
MULTIPLIER = (HOURLY RATE + OVERHEAD + FRINGE + PROFIT) / HOURLY RATE

---

Page 230 of 249
**EXHIBIT B-1**

**KEY STAFF**

**Ricondo & Associates, Inc.**

<table>
<thead>
<tr>
<th>POSITION</th>
<th>NAME</th>
</tr>
</thead>
<tbody>
<tr>
<td>1  Officer</td>
<td>Pete Ricondo, P.E.</td>
</tr>
<tr>
<td>2  Director</td>
<td>David Ramacorti, CM</td>
</tr>
<tr>
<td>3  Managing Consultant</td>
<td>Remy Lucette, PMP, CM</td>
</tr>
</tbody>
</table>

*Key staff job descriptions are attached.*
EXHIBIT B-1
KEY STAFF

ACAI Associates, Inc.

<table>
<thead>
<tr>
<th>POSITION</th>
<th>NAME</th>
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</thead>
<tbody>
<tr>
<td>1 Principal</td>
<td>Adolfo J. Cotilla, AIA</td>
</tr>
<tr>
<td>2 Senior Project Manager</td>
<td>Paul Pannier, AIA</td>
</tr>
<tr>
<td>3 Project Manager</td>
<td>W. Randy Scott</td>
</tr>
<tr>
<td>4</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td></td>
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<td>7</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td></td>
</tr>
</tbody>
</table>

Key staff job descriptions are attached.
### EXHIBIT B-1
**KEY STAFF**

**Arora Engineers, Inc.**

<table>
<thead>
<tr>
<th>POSITION</th>
<th>NAME</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 GIS Manager</td>
<td>David Grigg</td>
</tr>
<tr>
<td>2 Senior Planner</td>
<td>Andre Lennertz</td>
</tr>
<tr>
<td>3 Senior CAD Specialist</td>
<td>Walls Alonso</td>
</tr>
<tr>
<td>4 Senior GIS Specialist</td>
<td>Tim Lesser</td>
</tr>
<tr>
<td>5</td>
<td></td>
</tr>
</tbody>
</table>

*Key staff job descriptions are attached.*
**EXHIBIT B-1**  
**KEY STAFF**

_Basulto Management Consulting Inc._

<table>
<thead>
<tr>
<th>POSITION</th>
<th>NAME</th>
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<tbody>
<tr>
<td>1</td>
<td>Managing Consultant/Principal</td>
</tr>
<tr>
<td>2</td>
<td>Senior Consultant</td>
</tr>
<tr>
<td>3</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td></td>
</tr>
</tbody>
</table>

*Key staff job descriptions are attached.*
## Key Staff

**CRAVEN THOMSPON & ASSOC. INC.**

<table>
<thead>
<tr>
<th>POSITION</th>
<th>NAME</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Principal Civil Engineer</td>
<td>Patrick J. Gibney, P.E.</td>
</tr>
<tr>
<td>2 Senior Civil Engineer</td>
<td>Philip Joseph, P.E.</td>
</tr>
<tr>
<td>3 Director of Surveying</td>
<td>Douglas M. Davie, P.S.M.</td>
</tr>
<tr>
<td>4</td>
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*Key staff job descriptions are attached.*
EXHIBIT B-1
KEY STAFF

Dickey Consulting Services, Inc.

<table>
<thead>
<tr>
<th>POSITION</th>
<th>NAME</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Project Director</td>
<td>Sheryl A. Dickey</td>
</tr>
<tr>
<td>2 Project Coordinator/Quality Control</td>
<td>Justina Hicklyn</td>
</tr>
<tr>
<td>3 Document Control</td>
<td>Martina St. Rose</td>
</tr>
</tbody>
</table>

*Key staff job descriptions are attached.
## Florida Transatlantic Holdings, LLC

<table>
<thead>
<tr>
<th>POSITION</th>
<th>NAME</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 President/Managing Partner</td>
<td>John W. Dohm, SIOR, CCIM, PA</td>
</tr>
<tr>
<td>2</td>
<td></td>
</tr>
<tr>
<td>3</td>
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<tr>
<td>8</td>
<td></td>
</tr>
</tbody>
</table>

*Key staff job descriptions are attached.*
**EXHIBIT B-1**

**KEY STAFF**

*Kimley-Horn and Associates, Inc.*

<table>
<thead>
<tr>
<th>POSITION</th>
<th>NAME</th>
</tr>
</thead>
<tbody>
<tr>
<td>1  Project Manager</td>
<td>Dave Rickerson</td>
</tr>
<tr>
<td>2  Senior Project Professional</td>
<td>Jill Capelli</td>
</tr>
<tr>
<td>3  Professional</td>
<td>Kevin Clarke</td>
</tr>
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<td>4</td>
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</tr>
<tr>
<td>5</td>
<td></td>
</tr>
</tbody>
</table>

*Key staff job descriptions are attached.*
**EXHIBIT B-1**

**KEY STAFF**

**LEA+ELLIOTT, INC.**

<table>
<thead>
<tr>
<th>POSITION</th>
<th>NAME</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Principal</td>
<td>Sanjeev Shah</td>
</tr>
<tr>
<td>2 Associate Principal</td>
<td>Sambit Bhattacharjee</td>
</tr>
</tbody>
</table>

*Key staff job descriptions are attached.*
**EXHIBIT B-1**

**KEY STAFF**

*Quantum Spatial, Inc.*

<table>
<thead>
<tr>
<th>POSITION</th>
<th>NAME</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Production Manager</td>
<td>Marlin Zook</td>
</tr>
<tr>
<td>2 Project Manager</td>
<td>Doug Fuller</td>
</tr>
<tr>
<td>3</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td></td>
</tr>
</tbody>
</table>

*Key staff job descriptions are attached.*
**EXHIBIT B-1**

**KEY STAFF**

R. J. BEHAR & COMPANY, INC.

<table>
<thead>
<tr>
<th>POSITION</th>
<th>NAME</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Chief Engineer</td>
<td>Javier Rodriguez, P.E.</td>
</tr>
<tr>
<td>2 Project Manager</td>
<td>Rafael De Arazoza, P.E.</td>
</tr>
<tr>
<td>3 Senior Engineer</td>
<td>Carlos Mazorra, P.E.</td>
</tr>
<tr>
<td>4</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td></td>
</tr>
</tbody>
</table>

*Key staff job descriptions are attached.*
LETTER OF INTENT BETWEEN BIDDER/OFFEROR AND DISADVANTAGED BUSINESS ENTERPRISE (DBE) / AIRPORT CONCESSIONS DISADVANTAGED BUSINESS ENTERPRISE (ACDBE) SUBCONTRACTOR/SUPPLIER

(Form to be completed and signed for each DBE/ACDBE firm)

<table>
<thead>
<tr>
<th>Solicitation Number:</th>
<th>R1277707P1</th>
<th>Project Title:</th>
<th>Airport Master Plan Update Consultant Services</th>
</tr>
</thead>
</table>

Bidder/Offeror Name: Ricondo & Associates, Inc.

Address: 1000 NW 57th Court, Suite 920 City: Miami State: FL Zip: 33126

Authorized Representative: Pete Ricondo Phone: 305-677-0370

DBE/ACDBE Subcontractor/Supplier Name: ACAI Associates, Inc.

Address: 2937 W. Cypress Creek Road, Suite 200 City: Fort Lauderdale State: FL Zip: 33309 Phone: 954-484-4000

Authorized Representative: Adolfo J. Corrino, Jr.

A. This is a letter of intent between the bidder/offeror on this project and a DBE/ACDBE firm for the DBE/ACDBE to perform subcontracting work on this project, consistent with Title 49 CFR Parts 26 or 23 as applicable.

B. By signing below, the bidder/offeror is committing to utilize the above-named DBE/ACDBE to perform the work described below.

C. By signing below, the above-named DBE/ACDBE is committing to perform the work described below.

D. By signing below, the bidder/offeror and DBE/ACDBE affirm that if the DBE/ACDBE subcontracts any of the work described below, it may only subcontract that work to another DBE/ACDBE if it wishes to receive DBE/ACDBE credit for said work.

<table>
<thead>
<tr>
<th>Work to be performed by DBE/ACDBE Firm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Description</td>
</tr>
<tr>
<td>Terminal and Facilities Planning Support</td>
</tr>
<tr>
<td>Architectural Analysis</td>
</tr>
</tbody>
</table>

AFFIRMATION: I hereby affirm that the information above is true and correct.

<table>
<thead>
<tr>
<th>Bidder/Offeror Authorized Representative</th>
<th>DBE/ACDBE Subcontractor/Supplier Authorized Representative</th>
</tr>
</thead>
<tbody>
<tr>
<td>Senior Vice President</td>
<td>President</td>
</tr>
<tr>
<td>(Signature)</td>
<td>(Signature)</td>
</tr>
<tr>
<td>(Title)</td>
<td>(Title)</td>
</tr>
<tr>
<td>11/10/2014</td>
<td>11/10/14</td>
</tr>
</tbody>
</table>

Visit [http://www.census.gov/eos/www/naics/](http://www.census.gov/eos/www/naics/) to search. Match type of work with NAICS code as closely as possible. To be provided only when the solicitation requires that bidder/officer include a dollar amount in its bid-offer.
LETTER OF INTENT BETWEEN BIDDER/OFFEROR AND DISADVANTAGED BUSINESS ENTERPRISE (DBE) / AIRPORT CONCESSIONS DISADVANTAGED BUSINESS ENTERPRISE (ACDBE) SUBCONTRACTOR/SUPPLIER (Form to be completed and signed for each DBE/ACDBE firm)

Solicitation Number: R1277707P1
Project Title: Airport Master Plan Update Consultant Services

Bidder/Offeror Name: Ricondo & Associates, Inc.
Address: 1000 NW 57th Court, Suite 920 City: Miami State: FL Zip: 33126
Authorized Representative: Pete Ricondo Phone: 305-677-0370

DBE/ACDBE Subcontractor/Supplier Name: Arora Engineers, Inc.
Address: 61 Wilmingt on-West Chester Pike City: Chadds Ford State: PA Zip: 19317 Phone: (610) 459-7900
Authorized Representative: Manik K. Arora, PE, President & CEO

A. This is a letter of intent between the bidder/offeror on this project and a DBE/ACDBE firm for the DBE/ACDBE to perform subcontracting work on this project, consistent with Title 49 CFR Parts 26 or 23 as applicable.

B. By signing below, the bidder/offeror is committing to utilize the above-named DBE/ACDBE to perform the work described below.

C. By signing below, the above-named DBE/ACDBE is committing to perform the work described below.

D. By signing below, the bidder/offeror and DBE/ACDBE affirm that if the DBE/ACDBE subcontracts any of the work described below, it may only subcontract that work to another DBE/ACDBE if it wishes to receive DBE/ACDBE credit for said work.

Work to be performed by DBE/ACDBE Firm

<table>
<thead>
<tr>
<th>Description</th>
<th>NAICS</th>
<th>DBE/ACDBE Contract Amount</th>
<th>DBE/ACDBE Percentage of Total Project Value</th>
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</thead>
<tbody>
<tr>
<td>Surveying and mapping, GIS</td>
<td>541370</td>
<td>2%</td>
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</tr>
<tr>
<td></td>
<td>541512</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

AFFIRMATION: I hereby affirm that the information above is true and correct.

Bidder/Offeror Authorized Representative

[Signature] Senior Vice President 11/14/2014
[Title] (Date)

DBE/ACDBE Subcontractor/Supplier Authorized Representative

[Signature] President & CEO 11/18/2014
[Title] (Date)

* Visit [http://www.census.gov/eos/www/naics/](http://www.census.gov/eos/www/naics/) to search. Match type of work with NAICS codes as closely as possible.

* To be provided only when the solicitation requires that bidder/offer include a dollar amount in its bid-offer.

In the event the bidder/offeror does not perform work as awarded in the proposal contract, all work as represented in the Letter of Intent and Affirmation shall be null and void.

Broward County Board of
County Commissioners

OFFICE OF ECONOMIC AND SMALL BUSINESS DEVELOPMENT

LETTER OF INTENT BETWEEN BIDDER/OFFEROR AND DISADVANTAGED BUSINESS ENTERPRISE (DBE) / AIRPORT CONCESSIONS DISADVANTAGED BUSINESS ENTERPRISE (ACDBE) SUBCONTRACTOR/SUPPLIER

(From to be completed and signed for each DBE/ACDBE firm)

<table>
<thead>
<tr>
<th>Solicitation Number:</th>
<th>Project Title:</th>
</tr>
</thead>
<tbody>
<tr>
<td>R1277707P1</td>
<td>Airport Master Plan Update Consultant Services</td>
</tr>
</tbody>
</table>

Bidder/Offeror Name: Ricondo & Associates, Inc.

Address: 1000 NW 57th Court, Suite 920  
City: Miami  
State: FL  
Zip: 33126

Authorized Representative: Pete Ricondo  
Phone: 305-677-0370

DBE/ACDBE Subcontractor/Supplier Name: Basulto Management Consulting, Inc.

Address: 1601 Harrison Street  
City: Hollywood  
State: FL  
Zip: 33020  
Phone: 954-456-1844

ACDBE Authorized Representative: Jose Basulto

A. This is a letter of intent between the bidder/offeror on this project and a DBE/ACDBE firm for the DBE/ACDBE to perform subcontracting work on this project, consistent with Title 49 CFR Parts 26 or 23 as applicable.

B. By signing below, the bidder/offeror is committing to utilize the above-named DBE/ACDBE to perform the work described below.

C. By signing below, the above-named DBE/ACDBE is committing to perform the work described below.

D. By signing below, the bidder/offeror and DBE/ACDBE affirm that if the DBE/ACDBE subcontracts any of the work described below, it may only subcontract that work to another DBE/ACDBE if it wishes to receive DBE/ACDBE credit for said work.

<table>
<thead>
<tr>
<th>Work to be performed by DBE/ACDBE Firm</th>
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</thead>
<tbody>
<tr>
<td>Description</td>
</tr>
<tr>
<td>Constructibility analysis, cost estimating</td>
</tr>
<tr>
<td>Airport planning support</td>
</tr>
</tbody>
</table>

AFFIRMATION: I hereby affirm that the information above is true and correct.

Bidder/Offeror Authorized Representative

[Signature]  
Senior Vice President  
11/10/2014

DBE/ACDBE Subcontractor/Supplier Authorized Representative

[Signature]  
11/10/2014

* Visit [http://www.census.gov/eos/www/naics](http://www.census.gov/eos/www/naics) to search. Match type of work with NAICS code as closely as possible.

* To be provided only when the solicitation requires that bidder/offer include a dollar amount in its bid-offer.

In the event the bidder/offeror does not receive award of the same contract, any and all representations on this Letter of Intent and Affirmation shall be null and void.

DBE ACDBE Letter of Intent - Rev January 2013

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FOFFICE OF ECONOMIC AND SMALL BUSINESS DEVELOPMENT

LETTER OF INTENT BETWEEN BIDDER/OFFEROR AND DISADVANTAGED BUSINESS ENTERPRISE (DBE) / AIRPORT CONCESSIONS DISADVANTAGED BUSINESS ENTERPRISE (ACDBE) SUBCONTRACTOR/SUPPLIER

(Form to be completed and signed for each DBE/ACDBE firm)

<table>
<thead>
<tr>
<th>Solicitation Number:</th>
<th>Project Title:</th>
<th>Bidder/Offeror Name:</th>
<th>Address:</th>
<th>Authorized Representative:</th>
<th>DBE/ACDBE Subcontractor/Supplier Name:</th>
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<tbody>
<tr>
<td>R1277770P1</td>
<td>Airport Master Plan Update Consultant Services</td>
<td>Ricondo &amp; Associates, Inc.</td>
<td>1000 NW 57th Court, Suite 920, Miami, FL 33126</td>
<td>Pete Ricondo</td>
<td>Dickey Consulting Services, Inc.</td>
</tr>
</tbody>
</table>

Solicitation Number: R1277770P1

Project Title: Airport Master Plan Update Consultant Services

Solicitation Number: R1277770P1

Bidder/Offeror Name: Ricondo & Associates, Inc.

Address: 1000 NW 57th Court, Suite 920, Miami, FL 33126

Authorized Representative: Pete Ricondo

Phone: 305-677-0370

DBE/ACDBE Subcontractor/Supplier Name: Dickey Consulting Services, Inc.

Address: 1033 Sistrunk Boulevard, Suite 206, Fort Lauderdale, FL 33311

DBE Authorized Representative: Sheryl Dickey

ACDBE Authorized Representative: Sheryl Dickey

A. This is a letter of intent between the bidder/offeror on this project and a DBE/ACDBE firm for the DBE/ACDBE to perform subcontracting work on this project, consistent with Title 49 CFR Parts 26 or 23 as applicable.

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C. By signing below, the above-named DBE/ACDBE is committing to perform the work described below.

D. By signing below, the bidder/offeror and DBE/ACDBE affirm that if the DBE/ACDBE subcontracts any of the work described below, it may only subcontract that work to another DBE/ACDBE if it wishes to receive DBE/ACDBE credit for said work.

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<tbody>
<tr>
<td>Description</td>
</tr>
<tr>
<td>Public, Stakeholder, and Community</td>
</tr>
<tr>
<td>Outreach</td>
</tr>
</tbody>
</table>

AFFIRMATION: I hereby affirm that the information above is true and correct.

Bidder/Offeror Authorized Representative: Senior Vice President

(Title) 11/10/2014

DBE/ACDBE Subcontractor/Supplier Authorized Representative: President/CFO

(Title) 11/14/2014

Visit [http://www.census.gov/eos/www/naics](http://www.census.gov/eos/www/naics) to search. Match type of work with NAICS code as closely as possible.

1 To be provided only when the solicitation requires that bidder/offer include a dollar amount in its bid-offer.
**OFFICE OF ECONOMIC AND SMALL BUSINESS DEVELOPMENT**

**LETTER OF INTENT BETWEEN BIDDER/OFFEROR AND DISADVANTAGED BUSINESS ENTERPRISE (DBE) / AIRPORT CONCESSIONS DISADVANTAGED BUSINESS ENTERPRISE (ACDBE) SUBCONTRACTOR/SUPPLIER**

Form to be completed and signed for each DBE/ACDBE firm

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<th>Solicitation Number: R1277707P1</th>
<th>Project Title: Airport Master Plan Update Consultant Services</th>
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</table>

**Bidder/Offeror Name:** Ricondo & Associates, Inc.  
**Address:** 1000 NW 57th Ct, Suite 920  
**City:** Miami  
**State:** FL  
**Zip:** 33126  
**Authorized Representative:** Pete Ricondo  
**Phone:** 305-677-0370

**DBE/ACDBE Subcontractor/Supplier Name:** R.J. Behar & Company, Inc.  
**Address:** 6861 S.W. 196th Avenue, Suite 302  
**City:** Pembroke Pines  
**State:** FL  
**Zip:** 33332  
**Phone:** 954-680-7771

**DBE**  
**ACDBE**  
**Authorized Representative:** Robert J. Behar, PE/President

A. This is a letter of intent between the bidder/offeror on this project and a DBE/ACDBE firm for the DBE/ACDBE to perform subcontracting work on this project, consistent with Title 49 CFR Parts 26 or 23 as applicable.

B. By signing below, the bidder/offeror is committing to utilize the above-named DBE/ACDBE to perform the work described below.

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<tbody>
<tr>
<td>Description</td>
<td>NAICS</td>
</tr>
<tr>
<td>Roadway Planning Support and Engineering Analysis; Traffic Studies and Data Collection; Cost Estimating Support</td>
<td>541330</td>
</tr>
</tbody>
</table>

**AFFIRMATION:** I hereby affirm that the information above is true and correct.

**Bidder/Offeror, Authorized Representative**  
**Signature**  
**Title:** Senior Vice President  
**Date:** 11/11/2014

**DBE/ACDBE Subcontractor/Supplier Authorized Representative**  
**Signature**  
**Title:** President  
**Date:** 11/12/2014

*Visit http://www.census.gov/eos/www/naics/ to search. Match type of work with NAICS code as closely as possible.  
*To be provided only when the solicitation requires that bidder/offer include a dollar amount in its bid-offer.

In the event the bidder/offer does not receive award of the prime contract, any and all representations in this Letter of Intent and Affirmation shall be null and void.

DBE/ACDBE Letter of Intent - Rev January 2013
End of Agreement for RFP# R1277707P1