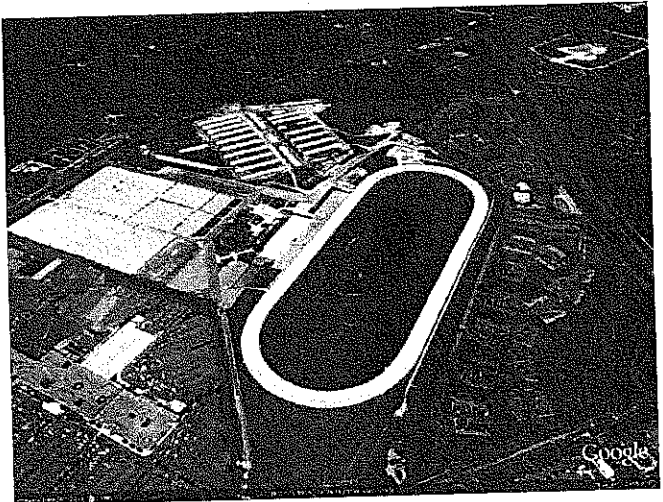
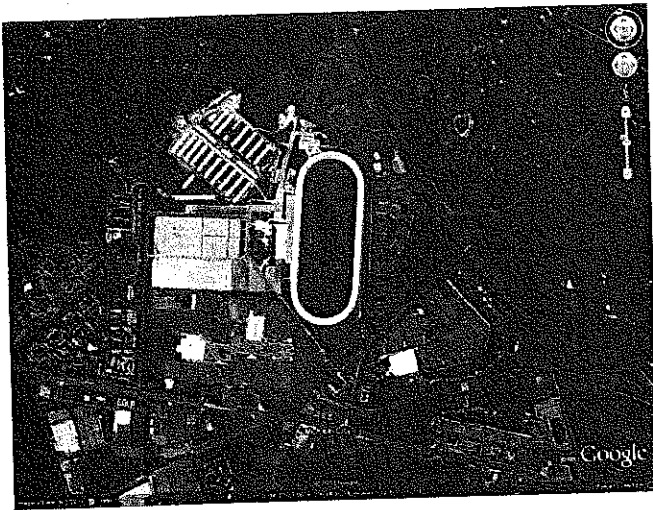


# Section 1: Technical Approach



## Project Understanding

The South Jersey Economic Development District (SJEDD), working with the Township of Hamilton, has developed renderings for development of the International Center for Aviation Excellence (ICAE), which would be located within the 250-acre site that houses the Atlantic City Race Course, adjacent to the Hamilton Mall. The conceptual project received approval from the Township of Hamilton Planning Board and the SJEDD is now working with the NJ Pinelands Commission for further approvals.

As currently envisioned, elements of the ICAE would be constructed in phases, based on economic and market conditions, with the first phase of site development anticipated to be the completion of a 250 room hotel to support visitors to the FAA Tech Center, to research facilities proposed adjacent to the Tech Center to be known as NextGen, intended to support research on the next generation of the nation's air traffic control system, and for passengers accessing the Atlantic City International Airport (ACY). Future ICAE research/office facilities are also envisioned as supporting FAA our private industry aeronautic research.

Even if the nearby airport and FAA Tech Center did not provide the research opportunities that are anticipated, the site of the proposed ICAE would make it a prime location for a research park for other regional and national businesses. The ICAE site is located proximate to many transportation resources including major regional access routes (the Atlantic

City Expressway and the Black Horse Pike (Route 40/322)) and the Atlantic City Rail Line (ACRL) through its station in Egg Harbor. The project site is also near the ACY, which, given the limited expansion capacity available to the currently congested Philadelphia and Newark regional airports, has the potential for significant future air service and passenger growth.

In addition to the adjacent mall and retail sites along Route 322, the site is also located near other key trip generators including Stockton College, the AtlanticCare Health Center and FAA Tech Center, each of which has a significant employee, student and/or patient draw, providing trip densities that are at or near levels needed to support transit mode travel choices. This proximity and density has been recognized by a number of entities in recent years, including the SJTA and NJ TRANSIT and in the short term has resulted in the operation of a shuttle between the Tech Center, the ACY, Stockton, AtlanticCare and the Egg Harbor station of the ACRL. In the mid-term NJ TRANSIT and SJTA are looking at the creation of a new train station near Pomona Road, with the Atlantic City Regional Transportation Study calling for direct access from the rail line to the airport as a long term improvement. In our opinion, **the existence of shuttle service to these locations, as well as the current transit service at the adjacent Hamilton Mall, make the issue of determining viable site transit alternatives one of the two major elements of the project.**

As is the case with many potential opportunities, there is often the need to address and eliminate potential project limitations. In this case, the very

same transportation advantages offered to the site also have the potential to limit its growth opportunity. For more than a decade, Atlantic County and other entities have identified the vehicle congestion along Route 322 and the lack of north/south roadway connections as a limitation for the area. At the present time, connection limitations between minor arterial roadways and local roads force all traffic onto major arterial roadways resulting in excessive turning movement delay as regional and local traffic occupy the same roads. Atlantic County through its master planning effort has identified the creation of strategic local collector road connections to separate local and regional system needs, reducing the delay and accidents created by excessive turning movements. One such connection has been identified in the midst of the project site, with an access roadway that can remove traffic traveling to the mall, to the ICAE site, and between Leipzig and Wrangleboro/Pomona Roads.

Successful multi-modal circulation planning is an exercise in finding the proper balance of land use and transportation within a geographic region. **We therefore believe that addressing the issue of identifying the proper location for, and the appropriate cross section of, the collector roadway connection on the site will be one of two major elements, along with identification of viable transit services and opportunities, of this work effort.** Establishing proper connections, including the connection identified in the County master plan, can make the site more attractive to tenants and visitors, while carelessly considered connections may serve to bifurcate the site or limit the effectiveness of the road in reducing congestion along Route 322, if not further exacerbate the existing congestion issues in the area.

Addressing the land use transportation infrastructure during early stages of the site development will provide the best opportunity for addressing regional County needs while optimizing site development alternatives.

### Project Approach

In completing the work effort AECOM will incorporate a multi-modal context approach that will result in a circulation plan for the site that creates a proper balance in the development of transportation improvements to improve the operation of the surrounding transportation system, to support the needs of the community and surrounding land uses and to provide the modal options necessary to safely and efficiently move people into, through and around the site.

The Circulation Plan or the ICAE will incorporate the following concepts into all of the task efforts and project work products that are detailed in the accompanying scope of work.

#### 1. Complete Project Analysis and Public Outreach Activities to Optimize Rather than Maximize

AECOM will complete the project to balancing transportation goals such as:

- Mobility for Non-Drivers
- Protecting Limited Roadway Capacity
- Providing Accessibility to Land Uses
- Reducing Costs

#### 2. Planning for Travel Choice

This means developing a Circulation Plan that considers all forms of transportation and thinks of "Moving People" rather than "Moving Vehicles".

#### 3. Mix Land Uses and Make them More Compact

SJEDD and Hamilton Township have already spent considerable effort considering a thoughtful land use mix. If we identify any transportation elements that could enhance or suggest modifications to the preliminary concepts we will make suggestions to minimize the impact of transportation of the project development and identify any needed increases in density to make transit alternative more feasible.

#### 4. Plan in a Regional Context

This project is one of the best examples of such regional context thought. Access to high tech jobs, the location and role of the site in the regional transportation network. These are elements too often given consideration as an afterthought to circulation planning, but given considered thought as part of this project.

#### 5. Separate Regional and Local Traffic

Inclusion of county and local road connections will provide opportunities to remove traffic from the regional Route 322 arterial roadway network. Providing multiple points of connectivity will reduce the impact of any one connection on the development site or on surrounding land uses.

## 6. Plan for Pedestrians, Pedestrians and More Pedestrians

The location of the mall and the inclusion of a transit center on the site will encourage transit use and pedestrian activity. My providing attractive pedestrian amenities roadway traffic is lessened, jobs are more accessible to individuals without automobiles and traffic flow is improved for those people still operating vehicles on surrounding roadways. Additionally, pedestrian improvements that encourage alternate roads are much less costly to the community from an economic, environmental and social perspective.

## 7. Remember that Land Use Shapes Transportation and Transportation shapes Land Use

Our proposals for transportation improvements are made using a context sensitive solutions approach that takes land use and other considerations, such as pedestrian accessibility and environmental issues into account.

## 8. Protect Existing Capacities

New development should be an economic benefit to a community and not an expensive transportation improvement congestion filled nightmare. As we develop a circulation plan for the site we will confirm that the development and the improvements are "right sized" so that they do not diminish, and in this instance hopefully enhance existing capacity issues on the surrounding transportation roadway network.

## 9. Minimize the Need for Parking

Parking is a particular area where "right sizing" makes sense. The creation of a transit center and the existence of extensive parking surrounding the mall, make opportunities for shared use parking, and diminished parking requirement a potential at this location. We will identify parking issues for consideration by the Steering Committee as we complete tasks in this project.

## 10. Open the Process and Re-Think Goals

As can be seen through the number of stars and triangles shown on our project schedule, we intend to complete this project in an interactive fashion with the Steering Committee and interested stakeholders as working partners. The diversity of the AECOM team member backgrounds makes it highly likely that we will be thinking and rethinking the best way to address circulation and transportation issues on the site until the day we submit the final Implementation Report.

## Project Management

AECOM understands that the successful completion of any project must incorporate effective project management to complement excellence in planning and engineering services. For that reason, AECOM will implement a project management approach to complement the elements of our technical project approach so that the project team is provided with the appropriate management tools it needs to ensure successful execution of each task of the technical work scope.

We understand that communication is a central element of a successful project. Throughout the course of the project, continued interaction with the SJTPO Project Manager will be maintained through conferences, progress reports, and consultation in order to review the progress of the project. Coordination and communication among the AECOM, SJTPO and the Steering Committee will be maintained through our project manager, Michelle MacKinnon.

Additionally, a clearly defined and organized project-specific Project Management Plan (PMP) will be developed to ensure project work is delivered on time, within budget, and in conformance with the Steering Committee's objectives, criteria, and direction. Upon receipt of notice to proceed, AECOM will develop the PMP to define and control all administrative processes and issues affecting the work, and the PWP will be distributed to all team members so that they have a definitive reference for all project activity, requirements and communication. The principal areas addressed in the PMP will include:

- Project Team Organization
- Description of Services and Scope of Work
- Work Breakdown Structure (WBS)
- Accounting Information and Procedures
- Project Schedule
- Description of Project Deliverables
- Document Control and Filing Procedures
- Communications
- Public Outreach Plan
- Project-Specific Quality Assurance Plan
- Document Preparation Style Guide

## Subconsultant Management

**TechniQuest Company (TQC)** will be working with AECOM on this project and will be performing work under the transportation assessment task. The AECOM project manager will consistently monitor TQC's utilization to ensure that the 15.61% DBE/ESBE goal for the project is achieved.

All submissions will be made through AECOM. TQC will be obliged by contract to report their progress on all project work for incorporation in the monthly progress reports. In addition, TQC will be required to submit its own Quality Plan that conforms to the AECOM Quality Plan, which is ISO 9001 certified.

## Scope of Services

### Task 1: Stakeholder Visioning Process

This task will provide the communication and outreach support needed to facilitate the integration of SJEDD and Hamilton's concept renderings for the ICAE with the needs of the community and surrounding land uses, with the needs of prospective site developers, and with the County's long standing desire to improve circulation in the area to address existing congestion, which, if unabated would detract from the optimum utility of the site. The expectation is that, by the end of this project, there will be consensus among Steering Committee members and key partners such as NJ TRANSIT, on needed roadway and transit concepts at the site so that a phased subregional implementation plan can be accepted and adopted by Hamilton Township, Atlantic County and the NJDOT.

Work will be completed under this task so that it will be useful and useable to future stages of site and infrastructure development.

#### 1.1 Key Issue Identification

**Site Visit** This task will supplement the data collection and analysis completed in Task 2. AECOM team will coordinate with the SJTPO PM to schedule a field visit to the study location with interested Steering Committee members to review proposed development concepts and previously identified transportation issues and deficiencies.

**Stakeholder Interviews** AECOM we will work with SJTPO to schedule interviews with key stakeholders to identify ICAE key issues. AECOM anticipates interviewing, in group settings where possible, the chairs of the Hamilton Township Planning and Zoning

Boards, the Hamilton Township Administrator, the County of Atlantic Department of Regional Planning and Development and the South Jersey Economic Development District. Additional telephone interviews may be conducted with SJTA, NJDOT and NJ TRANSIT representatives.

**Steering Committee Meeting** Issue identification will also be a topic of the first steering committee meeting so that members can provide input into the issue identification process.

#### 1.2 Development of Circulation Plan Goals and Objectives

Based upon the key issue identification driven by the results of Task 1.1 AECOM will develop draft goals and objectives for the plan. Preliminary circulation plan goals and objectives will be vetted at the first Steering Committee meeting, supplemented by committee input on key project issues. These goals and objectives will then help drive the selection of performance measures or measures of effectiveness used in our Task 2 analysis work and will direct the range of possible transportation improvements identified in Task 4.

#### 1.3 Collaboration Meetings and Workshops

AECOM will work with the SJTPO PM to identify all relevant stakeholders and to design collaboration meetings and/or workshops to aid in gaining consensus and mutual decision-making. Before each meeting or workshop, the AECOM team will meet with the SJTPO PM to review meeting goals and meeting materials (agenda, handouts, slides, maps, etc.) before they are distributed.

AECOM intends to work hand-in-hand with SJTPO staff and the Steering Committee when crafting materials and methods. We recognize that SJTPO staff and the Steering Committee have substantial experience interacting with Hamilton Township and Atlantic County officials and we intend to work with you in any engagements we plan. All meetings will be documented with a meeting summary and all materials will be provided to the SJTPO both electronically and in hard-copy.

AECOM team will work with SJTPO's PM to design interactions with NJDOT staff, and staff from SJTA, NJ TRANSIT, Atlantic County and the SJEDD--- -significant stakeholders in the circulation plan development process and key implementing agencies. Importantly, AECOM's key team members are well-respected transportation professionals and

held in that regard by NJDOT, SJTA and NJ TRANSIT. We have established professional relationships with key decision-makers at NJDOT, SJTA and NJ TRANSIT --- as well as those from Atlantic County. We will sit down with SJTPO project staff to review all meeting objectives and materials in advance of such meetings and well before distribution.

AECOM will use Marge Quinn as our facilitator for larger interactive workshop sessions to enable our PM, Officer In Charge, and other key task leaders to participate in the meeting dialogue and to answer questions or clarify information presented. Marge is a professional transportation planner, well-versed in smart growth and context sensitive solutions in multiple settings, working with state agencies, local municipalities and interested citizens. She has planned and facilitated many meetings of the kind anticipated throughout this study.

#### Task 1 Deliverables

- Interview guide and interview summaries
- Plan goals and objectives
- All Stakeholder Outreach and Steering Committee meeting agendas, summaries and materials
- Facilitated, large group, interactive meetings.

#### Task 2: Multimodal Conditions Assessment

Work completed under this Task will include: 1) the identification and assessment of existing conditions and the issues impacting existing conditions for all transportation modes; 2) the translation of proposed ICAE development and background growth into future travel demand; and 3) an assessment of the impact of that future travel demand and previously identified transportation infrastructure modifications on the future transportation network. These existing and future conditions will then be used as a base for the development of a transportation improvement program in Task 4 of this work effort.

AECOM proposes the following subtasks in completing the multimodal conditions assessment for the project:

##### 2.1 Data Collection

##### Traffic Data Collection

In order to assess existing and proposed traffic circulation performance in the vicinity of the project site, the project team suggests a two-level technical approach. As the first level, weekday AM and PM

peak period intersection turning movement counts will be collected to determine existing and future performance of key intersections (along S. Leipzig Avenue, Black Horse Pike and Wrangleboro Road) in the immediate vicinity of the project site. Most traffic impact studies for new developments and/or redevelopments only require this level of technical analysis to understand and mitigate immediate vicinity traffic impacts. However, the proposed ICAE site is also the location of a local roadway collector connection that was first identified in the Atlantic County Master Plan more than 10 years ago. Given the modification to both local and regional traffic circulation that such a traffic connection could produce, in combination with the importance of ICAE to the region and to the ACY airport and FAA Tech Center, a second level of technical analysis will focus on assessing roadway segment capacity for key roadway links connecting ICAE with the airport and FAA Tech Center. Access to/from the Atlantic City Expressway will also be analyzed closely by determining the performance of exit and merge ramps at ACE exits 12 and 14 and by suggesting necessary improvements.

Wherever possible, AECOM will utilize existing and available traffic data, including the SJTPO count information identified in the RFP. In addition, the AECOM will also identify other relevant counts collected in recent years by other sources like NJDOT prior to conducting new intersection turning movement counts and ATR counts. AECOM will request relevant ACE traffic count data including exit/entry toll booth counts for Exit 12 from the South Jersey Transportation Authority (SJTA). Traffic count data will be collected (either retrieval of recent available data or collection of new data) for the following locations.

Intersection Turning Movement Count Locations (Weekday 2-hour AM peak period and 2-hour PM peak period):

11. 1S. Leipzig Avenue and Almond Street
12. S. Leipzig Avenue and Hamilton Mall Access Driveway North
13. S. Leipzig Avenue and Hamilton Mall Access Driveway South
14. S. Leipzig Avenue and Black Horse Pike (Route 322)
15. 5. Black Horse Pike (Route 322) and Hamilton Mall Access Driveway
16. Black Horse Pike (Route 322) and Harding Highway (Route 40)

17. Black Horse Pike (Route 40/322) and Wrangleboro Road
18. Wrangleboro Road and Hamilton Mall Access Road/ACE

Considering the proximity of key commercial land uses like the Hamilton Mall, the above intersection data collection will also include pedestrian and bicycle crossing counts at these intersections to assess safety and mobility of non-motorized travel modes.

#### Bi-Directional Seven-day ATR Classification Count Locations:

1. Black Horse Pike (Route 322) between Montgomery Drive and S. Cologne Avenue
2. Wrangleboro Road between ACE Ramp and Pearce Road
3. Delilah Road between Zaberers Avenue and English Creek Road
4. Tilton Road between English Creek Road and Louis Lane
5. 5Eastbound ACE exit ramp to S. Leipzig Avenue at Exit # 14
6. Westbound ACE merge ramp from S. Leipzig Avenue at Exit # 14
7. Eastbound ACE exit ramp to Wrangleboro Road at Exit # 12
8. Westbound ACE merge ramp from Wrangleboro Road at Exit # 12

The AECOM team will balance the raw traffic count data collected in the field to be used in the traffic simulation and conditions assessment subtasks described later.

#### Transit Data Collection

As the region experiences growth due to cutting edge facilities like NextGen and ICAE, transit will play a key role in regional connectivity and mobility. Currently there are following three NJ Transit bus routes that serve the Hamilton Mall located right next to the project site:

502: Atlantic City – Hamilton Mall – Atlantic Cape Community Collage

508: Atlantic City – Richard Stockton Collage – Hamilton Mall

553: Upper Deerfield – Atlantic City (via Hamilton Mall)

SJTA currently operates a shuttle bus service during commuting hours connecting Egg Harbor Rail Station, Richard Stockton Collage, ACY and FAA Tech Center with three scheduled trips during morning and four schedule trips during evening hours. This shuttle route may be modified to include ICAE as well. The proposed transit depot on the project site presents a great opportunity for connection between local SJTA shuttle service and NJ Transit's regional bus routes described above.

AECOM will collect existing operating details for the NJ TRANSIT routes as well as SJTA shuttle service including operating frequencies, schedules, current daily boarding, and travel times to determine how ICAE transit Depot can be used effectively to promote more regional transit connections and increased use of transit.

#### **Data Collection Deliverables**

The following data will be included in appendices:

1. Recent intersection turning movement counts from various sources (if available) – AM and PM peak periods
2. New intersection turning movement counts – 2-hour AM and PM peak periods
3. Recent ATR counts from various sources (if available)
4. New 7-day ATR counts with vehicle classification
5. Summary of existing transit service operation - operating frequencies, schedules, current daily boarding, and travel times
6. Summary of observed pedestrian crossing activity at the intersections

#### **2.2 Traffic Simulation**

To demonstrate existing and anticipated future transportation circulation performance, AECOM will develop a micro-simulation model using Synchro/SimTraffic software. This model will provide intersection level of service performance to determine

impacts associated with development of the project site on the surrounding transportation infrastructure. The following scenarios will be modeled and analyzed.

1. Existing Condition Peak Hour Performance (AM and PM peak hours) – this scenario will establish baseline to understand existing operational performance and issues during peak hours of travel. Based on analysis of both AM and PM peak hours, the AECOM team will be able to determine the worse peak hour of the day for future analysis.
2. Future No-Build Condition Peak Hour Performance (worse peak hour) – this scenario will establish anticipated network performance during the opening year of ICAE project site just prior to opening of the site. Outputs from the SJTPO Regional Travel Demand Model will be used to determine the appropriate annual traffic growth factors for this scenario.
3. Future Build Condition Peak Hour Performance (worse peak hour) – this scenario will establish anticipated network performance in the vicinity of the project site under the full build condition by loading site generated traffic on the network. While the project site will be developed in phases, the analysis of full build condition will help understand the complete impact of the project site on circulation and determine improvements.
4. Future Build Condition Peak Hour Performance with Improvements (worse case peak hour) – this scenario will determine network improvements required, if any, to ensure transportation network operation at an acceptable level of service.

In addition to assessing network performance using Synchro models, traffic simulation using SimTraffic software will be an excellent tool for demonstrating circulation performance to stakeholders and general public. As a part of the Atlantic City Regional Transportation Plan, AECOM modeled more than 100 intersections in Atlantic City, which was instrumental in optimizing signalized network performance during weekend casino rush hours to ensure effective coordinated traffic circulation on the island with significantly reduced stops and delays and improved travel experience for visitors and residents.

#### Traffic Simulation Deliverables

The following data will be included in appendices:

1. Intersection performance Synchro report cards – Existing Condition (AM and PM peak hours)

2. Intersection performance Synchro report cards – Future No-Build Condition (worse peak hour)
3. Intersection performance Synchro report cards – Future Build Condition (worse peak hour)
4. Intersection performance Synchro report cards – Future Build Condition with Improvements (worse peak hour)

#### 2.3 Travel Demand Forecasting

Travel demand forecasting model is an important tool to predict future travel conditions and traffic needs. The South Jersey Travel Demand Model (SJTDM), originally developed in 1990s with TP+/MINUTP platforms is currently under transition to a new CUBE Base/Voyager software platform.

The AECOM team will work with SJTPO to update transit network in the SJTDM to determine how the proposed transit depot with new opportunities for regional connections will impact the overall transit ridership for this area.

The project team with the support from SJTPO will also work on determining SJTDM based appropriate traffic growth projections for future year analysis in order to assess future traffic circulation impacts.

#### Travel Demand Forecasting Deliverables

1. Summary of transit ridership impacts due to new opportunities for regional connections
2. Traffic growth projection summary for key network links connecting ICAE with other key local and regional generators like the ACY airport, FAA Tech Center, Richard Stockton Collage, Atlantic City etc.

#### 2.4 Conditions Assessment

The project site is in the immediate vicinity of key commercial trip generators like the Hamilton Mall and Wrangleboro Consumer Square. Once developed the site itself will be a key generator in the region. Thus, it is important to assess various aspects of multimodal transportation to ensure effective traffic circulation not only for the employees and residents of the proposed site but also for the overall region. AECOM will conduct conditions assessment for the following aspects:

*O-D Patterns:* In order to effectively assess traffic circulation needs and challenges, it is important to understand major origin and destination trip pairs in

the region and their assignment on transportation infrastructure. For example according to data from the Casino Control Commission, two out of every three casino employees working in the Atlantic City in 2008 resided either in Egg Harbor Township or Hamilton Township. Black Horse Pike which is one of the major regional access corridors for Atlantic City from Egg Harbor Township and Hamilton Township is located in the immediate vicinity of the project site. Thus, as a part of this multimodal conditions assessment AECOM will review key relevant O-D patterns based on the data from the SJTDM and other sources and summarize their impacts on the traffic circulation in the vicinity of the project site.

**Link Capacity:** Based on the ATR counts collected during data collection and traffic growth projections retrieved from the SJTDM, AECOM will conduct HCS segment capacity analysis under existing and future conditions to determine adequacy of available capacity for key roadway segments. Considering the emphasis on the key new regional connection between ICAE and ACY/FAA Tech Center/NextGen, appropriate segments of Tilton Road, Wrangleboro Road, Delilah Road, Black Horse Pike will be included in the link capacity analysis.

**Access to/from Key Regional Roadways:** With proximity of the project site to the major regional corridors like ACE (both via Exit 12 and 14) and Black Horse Pike, it is important to determine potential improvements that can facilitate better circulation in the area. AECOM will closely assess performance of ramps to/from ACE in the vicinity of the project site and will suggest improvements that can result in improved access to/from these regional gateways.

**Transit Opportunities:** based on the travel time, route and current shuttle ridership details, AECOM will assess possibility for modifying the current SJTA shuttle route to establish transit connection between ICAE and ACY, FAA Tech Center, NextGen, Stockton Collage, Egg Harbor Rail Station etc. AECOM will summarize extended or modified routes for the shuttle service and its impact on the current operation of the shuttle.

**Pedestrian Connections and Access to Transit Facilities:** AECOM will assess/propose pedestrian connections between the project site and the key commercial facilities in the vicinity like the Hamilton Mall. Considering the proposed transit depot on the project site, AECOM will also assess adequacy of/gaps in the existing pedestrian facilities like sidewalks and crosswalks leading to/from the transit depot.

## Task 2 Conditions Assessment Deliverables

- Technical memorandum summarizing findings and assessment of multimodal transportation circulation elements

## Task 3: Analysis of Social & Economic Benefits of Transportation Infrastructure and Site Development Improvements

Through this Task AECOM will use a structured approach to develop a comprehensive, rigorous, and well documented benefit cost analysis that the Steering Committee and other project sponsors can use to explain the merits of the project to stakeholders, funding partners and the general public. The approach to the benefit cost is outlined below.

### 3.1 Review Documents and Identify Benefits and Costs

**Existing Documents.** The project team will review relevant reports including past analyses, state and county economic data and development strategies, infrastructure condition reports, and work completed for this effort to identify materials for use in the Benefit Cost Assessment. The information obtained will be updated as needed. Project documents may include: the environmental documents, economic and real estate analyses (if any), maintenance plan, traffic projections, and land use plans.

**List of Project Benefits.** AECOM will develop a list of benefits for the project, indicating the list of private and public beneficiaries and the geographic scope of the recipients of each benefit type. The comprehensive listing and methodology for quantifying each benefit type will be developed and reviewed with the Steering Committee, but at minimum will include:

- **Real Estate Tax Benefits.** The real estate taxes for the various uses within the ICAE will be calculated by applying the appropriate tax rates to estimated market value. Market value will be estimated by capitalizing the estimated net operating income for each of the uses. In order to derive net operating income, AECOM economics will utilize average office rents and residential rental rates for new development in the area. For the hotel use, we will look at average daily rates and occupancy for similar area hotels. If the plan includes for-sale residential units, comparable average sales figures will be applied.
- **Income Tax Benefits.** In order to calculate income taxes attributable to the project, wage rates

based on the state wage survey will be applied to the projected jobs derived as part of the economic benefits assessment. Forecast annual hotel tax revenues will be based on the operating income derived as part of the real estate tax assessment.

### **3.2 Quantify and monetize benefits and costs in real dollars.**

Based on the plan worked out in Task 4, the team will monetize all benefits and costs consistent with US DOT Guidance for benefit cost studies. This analysis will use a variety of methods as applicable. The combination of methodologies ensures a comprehensive analysis of the project that does not rely on a "one size fits all" approach to benefits analysis. AECOM has experience building custom applications and applying REMI, TREDIS and RIMS II.

### **3.3 Discount benefits and costs to present dollars using an appropriate discount rate.**

Pivoting off the phased implementation plan timeframes and projections on how facility use (and the associated benefit stream) will grow over time, AECOM will estimate an annual stream of costs and benefits for each benefit type, aggregating to a total over time. The annual stream will be discounted and summed to obtain an aggregate total.

### **3.4 Provide qualitative analysis for benefits and costs that cannot be quantified and document BCA**

AECOM will prepare a qualitative analysis for any benefits and costs that cannot be quantified consistent with best practices for benefit cost analysis.

### **3.5 Technical Memorandum**

AECOM will document its analysis of benefits and costs in a technical memorandum that provides details on inputs and assumptions that underpin the quantitative and qualitative analysis

#### **Task 3 Analysis of Transportation, Social & Economic Benefits Deliverables**

- Technical Memorandum outlining Site Development and Transportation Social and Economic Benefits

#### **Task 4: Subregional Transportation Improvement Program**

##### **4.1 Identify Potential Range of Solutions**

This task will use the simulation and regional modeling tools developed in Task 2, and the benefits

analysis completed in Task 3 to assess the adequacy of previously identified regional transportation improvements and the localized transportation needs created by site travel demand. The improvement program will look to incorporate vehicle, bicycle and pedestrian connectivity components wherever feasible, including connections to adjacent land uses, including the Mall.

##### **4.2 Program Development Strategy Session**

The range of solutions to address issues identified through the work of Task 2 will be discussed with the Steering Committee to ascertain interest and feasibility prior to the development of a detailed improvement program. At the meeting, we will present the initial observations, receive comments, and discuss and consider alternative strategies. Where situations require, AECOM will propose up to 3 alternative program solutions to address particular program needs.

##### **4.3 Refine Program Improvement Strategies**

After the Steering Committee strategy session, AECOM will work to refine the improvement strategies. As part of this process, we will incorporate Task 5 Financial Plan analysis to the refined improvement list.

A primary focus of this task will be to review existing shuttle service connections between the AC Rail Line and the ACY and Tech Center, along with existing NJTRANSIT bus operations to determine ways to enhance transit opportunities at and through the site to minimize new service costs.

Since some of the site access components may modify when a developer for the site is actually selected, we will attempt to identify program improvements that can be easily modified to address specific site development needs at a later date.

#### **Task 4 Subregional Transportation Improvement Program Deliverables**

- Technical Memorandum detailing possible multi-modal transportation infrastructure and service improvements, with particular emphasis on the development and feasible operation of the proposed transit center on the site.

#### **Task 5: Financial Plan**

Following the completion of Task 2 (transportation impact assessment), Task 3 (benefits assessment) and Task 4 (sub-regional transportation improvement program), the AECOM team will develop a high-level financial plan for the proposed multi-modal

transportation options. This plan will demonstrate the funding capacity and financing strategies necessary for the South Jersey region to construct and operate the proposed new regional connections while continuing to operate and maintain the current roadway and transit networks. As a key part of the financial plan, AECOM will prepare a high-level "sources and uses of funds" analysis that integrates projections of ridership, expenses, and revenues for both the capital and the operations and maintenance (O&M) requirements of the proposed options.

The financial plan will also describe and assess the reasonableness of the key assumptions underlying these projections. The financial plan will include the capital and O&M cash flow requirements over a medium-term horizon of ten to twenty years. The financial plan will support SJTPO's decision-making regarding funding, project scope, project timing, and other key dimensions of the broader implementation plan.

#### Capital Costs

This task will identify costs of long-term assets, such as land, passenger facilities, structures, equipment, and other support facilities that will be needed for project implementation. The objective of this task is to identify order-of-magnitude capital costs at a conceptual level of detail associated with the construction of each improvement. This information can be used to compare the relative cost differences among service options and build alternatives. Costs will be estimated using actual NJ TRANSIT and NJ DOT construction and procurement costs for roadways, bus, park and ride or other modal elements. Additional study and design costs will be incorporated as applicable.

The capital cost estimates will be prepared in 2012 dollars. Transit costs will be inflated using the FTA SCC worksheets to Year of Expenditure (YOE) dollars per the project investment schedule that will be established. Costs will be annualized using standard assumptions for the years of useful life for each investment item and an appropriate annualization factor.

#### Operations & Maintenance Costs

For transit improvements, AECOM will prepare the Operating and Maintenance Costs (O&M) consistent with the guidance contained in Procedures and Technical Method for Transit Project Planning, Section II.4, Operating and Maintenance Cost, Federal Transit Administration, September 1990, as revised, as well as a recent FTA O&M costing guidance.

Total O&M costs will be presented for both opening year and forecast horizon year.

#### Task 5 Financial Plan Deliverables

- Financial Plan Technical Memorandum Identifying applicable Capital, Operations and Maintenance Costs for transportation improvements and operations associated with the circulation plan and proposed transit center.

#### Task 6 Implementation and Staging Plan

In this Task AECOM will develop a phased plan of implementation. In the plan transportation improvements will be staged to address the needs of the proposed site development phases and the transportation infrastructure financial costing constraints as determined in Task 5. This plan will include each strategy, the estimated cost, potential funding source, responsible agency, and proposed timeframes for planning, design, and construction. As part of preparing the plan, we will identify unfunded strategies and propose potential funding sources

The Task 5 Financial plan, including costs and implementation phasing will be incorporated into the final implementation and staging plan document that will be set up to serve as a reference guide and "Next Steps" action plan for transportation improvements on the site.

As applicable, the implementation plan will identify density triggers that might be needed to implement any recommended transit improvements.

At a Steering Committee conducted under Task 1 we will present and discuss the draft plan. We will ask the agencies to confirm the appropriateness of jurisdictional areas and responsible entities, and we also will discuss incorporating the strategies into agency capital programs.

#### Prepare Summary Materials

Finally, AECOM will prepare the final implementation plan, along with related new and updated summary materials. These materials will be available to distribute to stakeholders and other interested groups.

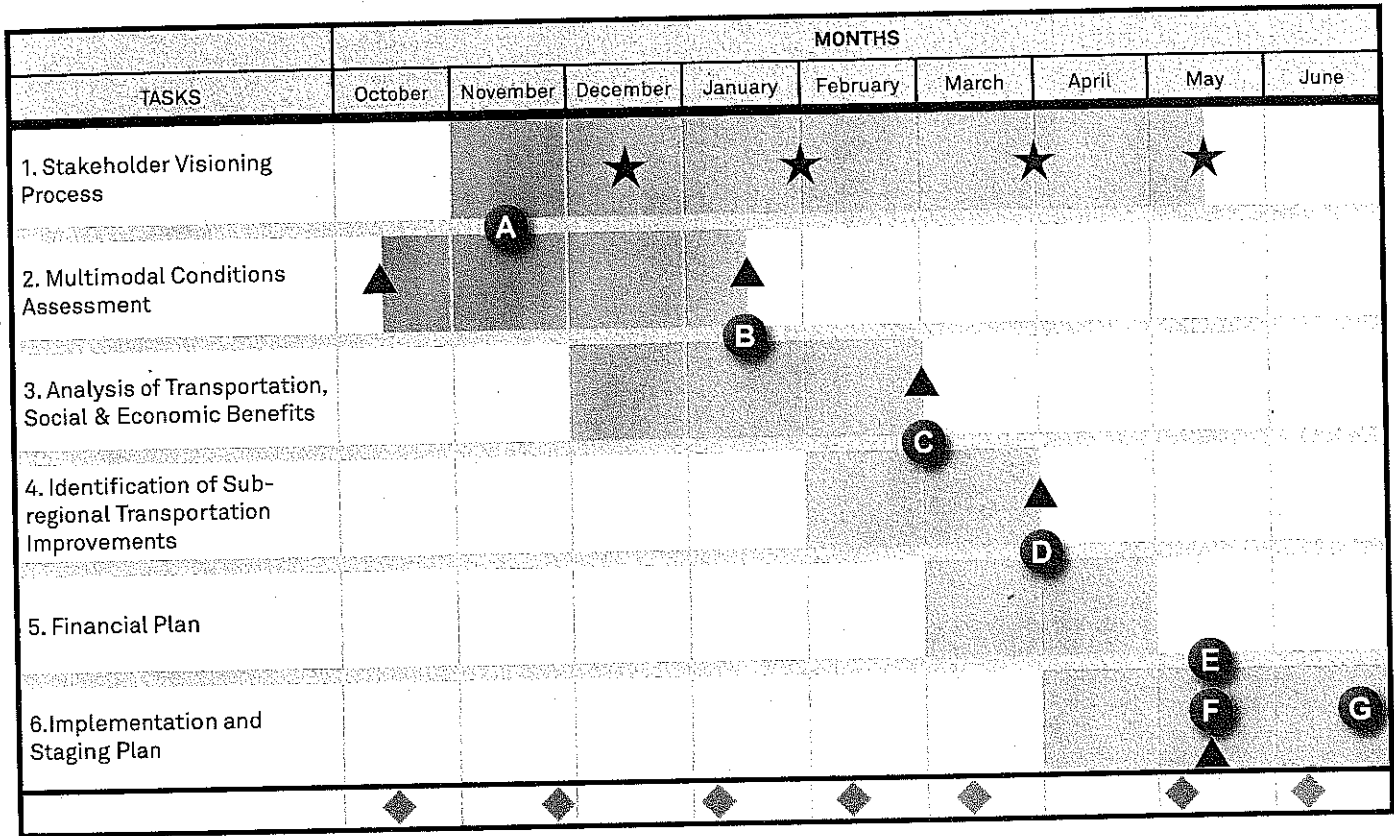
#### Task 6 Implementation and Staging Plan Deliverables

- Draft Implementation and Staging Plan
- Final Implementation and Staging Plan
- Summary implementation plan handout materials

#### Project Schedule

A schedule for the project is attached.

# Project Schedule



- Key Outreach Activity or Technical Task Deliverable
  - A - Traffic Data Collection (ATR and Turning Mvt, bus mvts, passengers)
  - B - Technical Memorandum on Multi-modal Transportation Assessment
  - C - Technical Memorandum on project transportation, social and economic benefits
  - D - Technical Memorandum outlining needed transportation improvements
  - E - Technical memorandum on Financial Plan
  - F - Submission of Draft Final Report and Circulation Plan
  - G - Submittal of Final Report and Circulation Plan
- ★ Hamilton Twp and Atlantic County Public Officials Meeting Or Briefing
- ◆ SJTPO Kick Off and Project Status Meetings
- ▲ Steering Committee Meeting



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September 9, 2011

Timothy G. Chelius, PP, AICP  
Executive Director  
South Jersey Transportation Planning Organization  
782 South Brewster Road, Unit 6B  
Vineland, NJ 08361

**RE: Cost Proposal - International Center for Aviation Excellence Circulation Plan**

Dear Mr. Chelius:

AECOM Technical Services, Inc. (AECOM) is pleased to submit our Cost Proposal for the International Center for Aviation Excellence Circulation Plan. The Cost Proposal reflects the multimodal approach and areas of emphasis that we have indicated in the accompanying Technical Proposal document based on our understanding of the work that South Jersey Transportation Planning Organization has requested.

You will note that the cost proposal provides 15.67% of the total proposed budget for work to be done by our DBE subconsultant TechniQuest Corporation (TQC). TQC's budget allocation is **in line with SJTPO's goals for DBE participation indicated in the Request for Proposal.**

AECOM is prepared to revise our cost proposal for the project should there be a need to revise the scope or project emphasis that we have identified in our technical proposal.

We are providing you with one hard copy and one electronic copy of our cost proposal in a separate sealed envelope, as well as six hard copies and one electronic copy of the technical proposal. If you have any questions or require further information, please do not hesitate to contact me at (973) 643-0807 x202 or Michelle at (609) 310-3179 or [michelle.mackinnon@aecom.com](mailto:michelle.mackinnon@aecom.com).

Thank you for your consideration.

Sincerely yours,

Gary Davies, PE, PP  
Vice President  
AECOM Technical Services, Inc.

**COST PROPOSAL**  
**International Center for Aviation Excellence Circulation Plan**

**PROJECT COST SUMMARY**

	AECOM	TechniQuest	Total
Total Hours	552	302	854
Total Salary Cost	\$ 28,471	\$ 5,702	\$ 34,173
Overhead Rate (%)	160.30%	130.00%	
Total Overhead	\$ 45,638	\$ 7,413	\$ 53,051
Total Fixed Fee	\$ 7,411	\$ 1,312	\$ 8,722
Total Direct Expenses	\$ 1,500	\$ 1,000	\$ 2,500
<b>PROJECT TOTAL</b>	<b>\$ 83,020</b>	<b>\$ 15,427</b>	<b>\$ 98,447</b>
SBE Percent		15.67%	

DBE/ESBE PROJECT TARGET = 15.61



**COST PROPOSAL**  
**International Center for Aviation Excellence Circulation Plan**  
**AECOM Salary Levels by Title**

	2011 Rates	Expected 2012 Rates	
<b>Officer</b>			
Gary Davies	94.63	97.47	
AVERAGE		94.63	97.47
<b>Principal Planner</b>			
Marge Quin	76.17	78.46	
Jeff Roux	72.99	75.18	
Christine Bishop Edkins	61.82	63.67	
AVERAGE		70.33	72.44
<b>Economic Analyst</b>			
Toni Horst	79.66	82.05	
Patrica Folan	69.85	71.95	
AVERAGE		74.76	77.00
<b>Financial Analyst</b>			
Mark Schofield	51.71	53.26	
AVERAGE		51.71	53.26
<b>Senior Planner</b>			
Michelle MacKinnon	54.02	55.64	
Mayuresh Khare	53.04	54.63	
Jim Hess	52.40	53.97	
Anna Aleynick	51.69	53.24	
AVERAGE		52.79	54.37
<b>Planner</b>			
Guillermo Calves	43.65	44.95	
Amanda Lukacs	30.60	31.52	
Brian Albright	30.94	31.87	
AVERAGE		35.06	36.11

**COST PROPOSAL**  
**International Center for Aviation Excellence Circulation Plan**  
**TechniQuest Salary Levels by Title**

		2011 Rates	Anticipated 2012 Rates	
<b>Principal</b>				
	Haseeb Ashon	51.20	52.74	
	AVERAGE		51.20	52.74
<b>Engineer</b>				
	Michael Yu	26.00	26.78	
	AVERAGE		26.00	26.78
<b>Technician</b>				
	AVERAGE	77.02	79.33	
			77.02	79.33
<b>Field Surveyor I</b>				
	AVERAGE	18.00	18.54	
			18.00	18.54
<b>Field Surveyor II</b>				
	AVERAGE	15.00	15.45	
			15.00	15.45



**COST PROPOSAL**  
**International Center for Aviation Excellence Circulation Plan**  
**REPRESENTATIVE DIRECT SALARY LEVELS**  
**AECOM Technical Services, Inc.**

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	2011 Avg. Hourly Rate (\$/hr)	2012 Anticipated Hourly Rate (\$/hr)
Officer	94.63	97.47
Principal Planner	70.33	72.44
Economic Analyst	74.76	77.00
Financial Analyst	51.71	53.26
Senior Planner	52.79	54.37
Planner	35.06	36.11

**COST PROPOSAL**  
**International Center for Aviation Excellence Circulation Plan**  
**REPRESENTATIVE DIRECT SALARY LEVELS**  
**TechniQuest Company**

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	2011 Hourly Rate (\$/hr)	2012 Hourly Rate (\$/hr)
Principal	51.20	52.74
Engineer	26.00	26.78
Technician	77.02	79.33
Field Surveyor I	18.00	18.54
Field Surveyor II	15.00	15.45



**COST PROPOSAL**  
**International Center for Aviation Excellence Circulation Plan**

**AECOM Technical Services, Inc.**

**Task 1: Stakeholder Visioning Process**

<b>Staff Classification</b>	<b>Number of Person Hours</b>	<b>FY2011 Avg. Hourly Rate</b>	<b>Task Labor Totals</b>
Officer	8	94.63	757.04
Principal Planner	40	70.33	2813.07
Economic Analyst	0	74.76	0.00
Financial Analyst	0	51.71	0.00
Senior Planner	40	52.79	2111.47
Planner	0	35.06	0.00
<b>TOTAL</b>	<b>88</b>		<b>5,681.58</b>
Fringe Rate		40.00%	2,272.63
Overhead Rate		120.30%	6,834.94
<b>Total Overhead Rate</b>		<b>160.30%</b>	<b>9,107.57</b>
Fixed Fee (Profit)			<u>\$ 1,478.91</u>
		<b>Task Total</b>	<b>\$ 16,268.06</b>

COST PROPOSAL  
International Center for Aviation Excellence Circulation Plan

TECHNIQUEST

Task 1: Stakeholder Visioning Process

Staff Classification	Number of Person Hours	FY2011 Avg. Hourly Rate	Task Labor Totals
Principal	0	51.20	0
Engineer	0	26.00	0
Technician	0	77.02	0
Field Surveyor I	0	18.00	
Field Surveyor II	0	15.00	
<b>TOTAL</b>	<b>0</b>		<b>0</b>
Fringe Rate		26.25%	0
Overhead Rate		103.75%	0
Total Overhead Rate		130.00%	0
Fixed Fee (Profit)		\$ -	
		Task Total	<u>0</u>



COST PROPOSAL

International Center for Aviation Excellence Circulation Plan

AECOM Technical Services, Inc.

Task 2: Multimodal Conditions Assessment

Staff Classification	Number of Person Hours	FY2011 Avg. Hourly Rate	Task Labor Totals
Officer	4	94.63	378.52
Principal Planner	16	70.33	1125.23
Economic Analyst	0	74.76	0.00
Financial Analyst	0	51.71	0.00
Senior Planner	40	52.79	2111.47
Planner	100	35.06	3506.18
TOTAL	160		7,121.40
Fringe Rate		40.00%	2,848.56
Overhead Rate		120.30%	8,567.04
<b>Total Overhead Rate</b>		<b>160.30%</b>	<b>11,415.60</b>
Fixed Fee (Profit)			\$ 1,853.70
		Task Total	<u>\$ 20,390.70</u>

COST PROPOSAL  
International Center for Aviation Excellence Circulation Plan

TECHNIQUEST

Task 2: Multimodal Conditions Assessment

Staff Classification	Number of Person Hours	FY2011 Avg. Hourly Rate	Task Labor Totals
Principal	2	51.20	102.4
Engineer	100	26.00	2600
Technician	0	77.02	0
Field Surveyor I	0	18.00	0
Field Surveyor II	200	15.00	3000
<b>TOTAL</b>	<b>302</b>		<b>\$ 5,702.40</b>
Fringe Rate		26.25%	\$ 1,496.88
Overhead Rate		103.75%	\$ 5,916.24
<b>Total Overhead Rate</b>		<b>130.00%</b>	<b>\$ 7,413.12</b>
Fixed Fee (Profit)			<u>\$ 1,311.55</u>
			<b>Task Total \$ 14,427.07</b>



COST PROPOSAL  
International Center for Aviation Excellence Circulation Plan

AECOM Technical Services, Inc.

Task 3: Analysis of Transportation, Social & Economic Benefits

Staff Classification	Number of Person Hours	FY2011 Avg. Hourly Rate	Task Labor Totals
Officer	2	94.63	189.26
Principal Planner	0	70.33	0.00
Economic Analyst	44	74.76	3289.22
Financial Analyst	0	51.71	0.00
Senior Planner	16	52.79	844.59
Planner	0	35.06	0.00
TOTAL	62		4,323.07
Fringe Rate		40.00%	1,729.23
Overhead Rate		120.30%	5,200.65
<b>Total Overhead Rate</b>		<b>160.30%</b>	<b>6,929.88</b>
Fixed Fee (Profit)			\$ 1,125.29
		Task Total	\$ 12,378.24

COST PROPOSAL  
International Center for Aviation Excellence Circulation Plan

TECHNIQUEST

Task 3: Analysis of Transportation, Social & Economic Benefits

Staff Classification	Number of Person Hours	FY2011 Avg. Hourly Rate	
Principal	0	51.20	
Engineer	0	26.00	
Technician	0	77.02	
Field Surveyor I	0	18.00	
Field Surveyor II	0	15.00	
<b>TOTAL</b>	<b>0</b>		<b>0</b>
Fringe Rate		26.25%	0
Overhead Rate		103.75%	0
<b>Total Overhead Rate</b>		<b>130.00%</b>	<b>0</b>
Fixed Fee (Profit)			\$ -
		Task Total	<u><u>0</u></u>



COST PROPOSAL

International Center for Aviation Excellence Circulation Plan

AECOM Technical Services, Inc.

Task 4: Subregional Transportation Improvement Program

Staff Classification	Number of Person Hours	FY2012 Anticipated Avg. Hourly Rate	Task Labor Totals
Officer	4	97.47	389.88
Principal Planner	0	72.44	0.00
Economic Analyst	0	77.00	0.00
Financial Analyst	0	53.26	0.00
Senior Planner	24	54.37	1304.89
Planner	60	36.11	2166.82
TOTAL	88		3,861.58
Fringe Rate		40.00%	1,544.63
Overhead Rate		120.30%	4,645.49
<b>Total Overhead Rate</b>		<b>160.30%</b>	<b>6,190.12</b>
Fixed Fee (Profit)			<u>\$ 1,005.17</u>
		Task Total	<u>\$ 11,056.87</u>

COST PROPOSAL  
International Center for Aviation Excellence Circulation Plan

TECHNIQUEST

Task 4: Subregional Transportation Improvement Program

Staff Classification	Number of Person Hours	FY2012 Anticipated Avg. Hourly Rate		
Principal	0	52.74		
Engineer	0	26.78		
Technician	0	79.33		
Field Surveyor I	0	18.54		
Field Surveyor II	0	15.45		
TOTAL	0		0	
Fringe Rate		26.25%	0	
Overhead Rate		103.75%	0	
Total Overhead Rate		130.00%		0
Fixed Fee (Profit)			\$ -	
		Task Total	<u>\$0.00</u>	



COST PROPOSAL

International Center for Aviation Excellence Circulation Plan

AECOM Technical Services, Inc.

Task 5: Financial Plan

Staff Classification	Number of Person Hours	FY2012 Anticipated Avg. Hourly Rate	Task Labor Totals
Officer	2	97.47	194.94
Principal Planner	0	72.44	0.00
Economic Analyst	0	77.00	0.00
Financial Analyst	40	53.26	2130.38
Senior Planner	16	54.37	869.93
Planner	0	36.11	0.00
TOTAL	58		3,195.24
Fringe Rate		40.00%	1,278.10
Overhead Rate		120.30%	3,843.88
<b>Total Overhead Rate</b>		<b>160.30%</b>	<b>5,121.98</b>
Fixed Fee (Profit)			\$ 832
		Task Total	\$ 9,148.94

COST PROPOSAL  
International Center for Aviation Excellence Circulation Plan

TECHNIQUEST

Task 5: Financial Plan

Staff Classification	Number of Person Hours	FY2012 Anticipated Avg. Hourly Rate		
Principal	0	52.74		
Engineer	0	26.78		
Technician	0	79.33		
Field Surveyor I	0	18.54		
Field Surveyor II	0	15.45		
<b>TOTAL</b>	<b>0</b>			<b>0</b>
Fringe Rate		26.25%	0	
Overhead Rate		103.75%	0	
Total Overhead Rate		130.00%		0
Fixed Fee (Profit)				\$ -
Fixed Fee (Profit)			Task Total	<u>\$ -</u>



COST PROPOSAL  
International Center for Aviation Excellence Circulation Plan

AECOM Technical Services, Inc.

Task 6 Implementation and Staging Plan

Staff Classification	Number of Person Hours	FY2012 Anticipated Avg. Hourly Rate	Task Labor Totals
Officer	4	97.47	389.88
Principal Planner	0	72.44	0.00
Economic Analyst	0	77.00	0.00
Financial Analyst	8	53.26	426.08
Senior Planner	24	54.37	1304.89
Planner	60	36.11	2166.82
TOTAL	96		4,287.66
Fringe Rate		40.00%	1,715.06
Overhead Rate		120.30%	5,158.06
<b>Total Overhead Rate</b>		<b>160.30%</b>	<b>6,873.12</b>
Fixed Fee (Profit)			\$ 1,116
		<b>Task Total</b>	<b>\$ 12,276.86</b>

COST PROPOSAL  
International Center for Aviation Excellence Circulation Plan

TECHNIQUEST

Task 6 Implementation and Staging Plan

Staff Classification	Number of Person Hours	FY2012 Anticipated Avg. Hourly Rate	Task Labor Totals
Principal	0	52.74	0
Engineer	0	26.78	0
Technician	0	79.33	0
Field Surveyor I	0	18.54	0
Field Surveyor II	0	15.45	0
<b>TOTAL</b>	<b>0</b>		<b>0</b>
Fringe Rate		26.25%	0
Overhead Rate		103.75%	0
Total Overhead Rate		130.00%	
Fixed Fee (Profit)			<u>\$ -</u>
			Task Total \$ -