EXECUTIVE CHAMBER

CITY OF WARWICK RHODE ISLAND

SCOTT AVEDISIAN
MAYOR

August 17, 2006

Mr. John Silva, Environmental Program Manager
Federal Aviation Administration
New England Region
12 New England Executive Park
Burlington, Massachusetts 01803

RE: Comments - City of Warwick *Draft Supplemental Alternatives Analysis (ka, Runway Length Analysis),* Draft Environmental Impact Statement (DEIS) for T. F. Green Airport (PVD)

Dear Mr. Silva:

I would like to take this opportunity to provide comments on the *Draft Supplemental Alternatives Analysis* included within the ongoing Environmental Impact Statement (EIS) for T.F Green Airport (airport)

The City's review has determined that the study falls short of a rational, reasonable analysis that recognizes area constraints as well as changes within the airline industry. It is impossible to determine optimal runway length characteristics for the airport without considering the constraints already imposed on the host community from airport use along with fundamental changes in the airline industry itself.

The runway length selected, along with its five variants, unsuccessfully adopts as the sole measure of study a single runway length based on undependable forecasts, anecdotal service destinations and aircraft use data that focuses on past operational use characteristics. As drafted, the basis of the Runway Length Analysis is at odds with current trends in pricing, aircraft usage and overall market changes.

Several factors have concurrently transformed the airline industry. The unprecedented, rapid escalation in fuel costs, financial instability of certain legacy airlines and the growth of the low-cost carrier group have shifted market share and transformed the overall industry, resulting in the reallocation of larger, older aircraft to serve more profitable routes. The consultant's forecast uses a traditional carrier fleet mix as the singular method in determining how the projected demand will be met and entirely ignores the use of smaller aircraft to serve routes that may not be served by larger aircraft.

The "embargoed passengers" assumption is significant because this perceived deficiency in passenger accommodation, predicted by year 2020, becomes the sole basis for rationalizing the

singular runway alternative. Ignoring the market's ability to accommodate so-called "embargoed passengers" has resulted in a flawed analysis. It has been historically proven in the marketplace that profitable routes will be served by competing air carriers.

Nowhere is this more evident than in the flawed assumptions included in previous-forecasts for T.F Green Airport, which failed to predict non-stop service to Las Vegas without constructing a longer runway. As we are acutely aware, those past forecasts were proven incorrect when Southwest Airlines began providing non-stop service to Las Vegas with the current runway configuration. This proves that, at best, the consultant's forecasts are extremely unreliable, especially when they have limited knowledge of an airline's planned service routes and use of aircraft type. In the airline industry, competitive advantage is many times all that stands between an airline's profitability and potential insolvency.

Certainly, we must learn from the miscalculations of the past and include in the current study variables that present potential changes resulting from market forces. This study must be adjusted to reflect the current marketplace, which supports a likelihood that competing air carriers will utilize smaller aircraft and/or additional flights in order to accommodate the anticipated *"passenger payload reduction" (embargoed passengers)* thereby reducing the overall runway length required at T.F. Green Airport.

The Planning Department calculates that by 2020, the projected payload reduction associated with a proposed 8,600 lf. main runway could be completely served by the addition of two (2) new weekly departures from competing air carriers using B737s or similar aircraft. Not only is this feasible but it is likely in this competitive atmosphere.

Consequently, the current study must acknowledge the inherent unreliability of variables used in the projected 2020 analysis and include for constancy possible scenarios, similar to the one previously mentioned. Including rational marketplace conditions will provide a more dependable range within the study-forecast data, resulting in more realistic projections of passenger payload reduction.

The inability of the consultant to build upon generic assumptions with real world developments ignores current aviation industry trends thereby artificially eliminating consideration of a shorter runway PRIOR to initiating the environmental impact phase of the EIS.

Excluding shorter runway length alternatives PRIOR to the environmental impact phase of the EIS eliminates a critical benchmark of assessment between projects, a flaw that cannot be overcome within the *Environmental Alternatives* phase of the EIS.

Not including shorter runway alternatives eliminates the ability to assess the minimum impact on the natural environment and community by and between viable alternatives. This could result in the flawed conclusion that the proposed alternative presents the *least* amount of environmental impact necessary to meet the Purpose and Need for the project.

In summary, the City of Warwick strongly advocates the enhancement of the study within the draft *Runway Length Analysis* PRIOR to the Environmental Assessment phase of the EIS. This should be accomplished by including shorter runway alternatives, through extension of the baseline study of the forecast data, to one that integrates potential changes within the airline industry, including adverse market conditions, rising fuel costs shifting business models, the solvency of certain legacy airlines, improvements in aircraft technology and redistribution of aircraft fleet mix as opposed to exclusively relying on the FAA Advisory Circular, which is

neither representative of local community conditions or accurate as a means of predicting overall runway use in year 2020.

The aforementioned variables impact the projected operational length requirements of the main runway beyond that which is directed within the FAA Advisory Circular which is, in the City's opinion, a guide to be used in conjunction with actual conditions and logic, not rigid regulations that are draconian in measure.

We should not design public infrastructure in a vacuum. Reasoned variables that comply with the overall intent of the Purpose and Need must be included in the study. The City of Warwick understands that T.F Green Airport plays a fundamental role within the transportation needs of the region, but that does not eliminate the need to consider the existing constraints that confront this airport.

The City requests that the FAA expand the runway length analysis to include reasonable and comprehensive analysis that includes changes in technology, reassignment of aircraft and changes in the market place which, according to existing data, will result in shorter runway alternatives beyond those which are currently being studied.

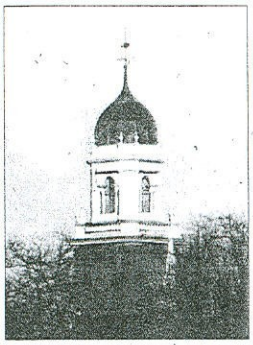
The study of the No Build alternative with varied shorter runway proposals within the EIS PRIOR to the initiation of the environmental analysis phase of the study will allow a comprehensive review of environmental and social impacts while providing the basis for comparison within a benefit-cost study as a means of determining overall program viability. The City strongly encourages the FAA to adopt these changes as they are of critical importance in protecting our citizens and natural resources.

I have attached the details of our assessment and evaluation on this matter.

Should you have any questions or comments regarding this matter please contact Mark Carruolo, Planning Director, at (401) 738-2000, ext. 6289.

Sincerely,

Scott Avedisian
Mayor



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Planning Board

Warwick Station Redevelopment Agency

Zoning Board

Conservation Commission

Harbor Management Commission

Historic District Commission

Historic Cemetery Commission

ADDENDUM - Comments Draft Supplemental Alternatives Analysis

To: Mark Carruolo, Planning Director

From: William DePasquale AICP, Principal Planner

Date: August 16, 2006

RE: ADDENDUM Comments -City of Warwick
Draft Supplemental Alternatives Analysis (kA; Runway Length Analysis),
Draft Environmental Impact Statement (DEIS), T. F. Green Airport (PVD)

Dear Mr. Carruolo:

I have reviewed the *Draft Supplemental Alternatives Analysis (Study)* included within the ongoing Environmental Impact Statement (EIS) for T.F Green Airport (Airport). Based on my review I conclude that the study fails to provide an accurate group of optimal runway length characteristics for T.F. Green Airport. In my opinion, the study integrates little empirical data reflecting prominent changes in aircraft technology, reallocation of fleet aircraft and the general transformation within the airline industry.

As drafted the study presents a static forecast and fleet mix, which is contrary to what is widely accepted as a dynamic industry. Adapting the forecast and fleet mix to consider changing airline fleets and market induced competition is critical to accurately forecast future fleet mix and predicted *"Passenger Payload Reduction"*. The forecast produced in this study employs traditional use of the carrier fleet mix as the solitary method of serving the 2020 market entirely discounting optimal pricing strategies such as peak-load pricing using smaller 737 or similar type aircraft to serve profitable non-stop routes and absorption of embargoed passengers by competing air carriers.

The lack of this study's use of enhanced methods to include realistic and anticipated marketplace factors and industry trends produced a flawed forecast and fleet mix. Without acknowledging principle forces in the current and future marketplace the assessment of environmental impact within the Environmental Impact Study (EIS) will be incomplete because less costly and damaging runway alternatives that meet the "purpose and need" for this project will be removed from direct study.

In particular the forecast excludes market absorption of the *"passenger payload reduction or so called embargoed passengers"* by competing airlines and does not recognize competition and profit driven changes in fleet assignment (*B737 reassignment replacing 767 to serve a high profit destination)* An air carrier's fleet mix is important in directing changes by legacy airlines in attempt to compete with the low cost carriers (LCC) group.

In the current environment, higher fuel and personal costs of legacy airlines require new scheduling and pricing strategies that seek to maximize profit per passenger by maintaining peak pricing and high load factors. In order to compete with the point to point low-cost carrier group legacy air carriers will be compelled to adapt the marketplace through efficient use of their family of aircraft a fact not recognized by the consultants in this study.

Many legacy airlines have already re-assigned the larger 200–300 seat B767 aircraft to serve more profitable international routes as a way of maximizing load factors and profit per passenger.

The operational and physical characteristics of the B767-300 "Design Aircraft" were originally lumped together although the 767 aircraft actually includes three distinct engine configurations with very different runway length requirements. The varied powerplants for the B767 were originally grouped together by the consultant and assumed to require the longest runway length. Based on a written request from the City of Warwick the consultant separated the engine configuration by operational performance. At least 1/3 of the B767 engines flown by United Airlines (UAL) requires less than the 9,350-lf runway length forwarded by the consultant. In the instant case United Airlines (UAL) is forecasted to fly the most demanding a 767-300 with a Pratt and Whitney JT9D-7R4D/7R4E engine configuration which is presented in the study as the design aircraft representing 7 percent of forecasted non-stop west coast flights by year 2020.

Boeing 767 Aircraft - 200 to 300 seat market

Delta	***GE* Engines CF6 25 October 1982**
United Air Lines	***Pratt and Whitney* - JT9D 19 August 1982**
American Airlines	***GE* Engines -CF6-80C2**
	***Pratt*- PW4000**
	***Rolls Royce* - RB211-524H**

Boeing 767
DESIGN AIRCRAFT (term used by FAA to describe the aircraft type for which minimum runway length is designed)

Aircraft Model	Engine	Runway length Required 2,300 N.M. (non-stop) West Coast	% of total operations by 2012	% of total operations by 2020
767 -300	Pratt and Whitney jt9d-7r4d/7r4e	10,700 lf	.5%	3.5%*
767-300	GE CF6-80A/80A2	9,350 LF	.5%	3.5%*
767-300	**GE/PW CF6-80c2b2/pw4052**	**8,100 LF**	**.5%**	**3.5% ****

* ***1% of all operations by 2012 and 7% of operations by 2020***
** ***1/3 of all 767-300 design aircraft requires only an 8,100 LF runway***
767 with JT9D-7R4D certified 30 July 1982 with CF6-80A 30 certified September 1982

Industry trends conflict with the consultant's forecast data regarding future fleet allocation. The study discounts the ability for United Airlines (UAL) to select between five families of aircraft in their fleet that include; B737-300/500, B747-400, B757/767, 777, Airbus 319/320. UAL is able to serve a profitable market with the use of a smaller B737-500B or B757 aircraft, which require a shorter runway than the single runway length proposed in the study.

Moreover American Airlines and Delta Airlines maintain B767 aircraft with the GE Engine CF6-80C2 / CF6 25 configuration which have improved performance characteristics (takeoff) over the UAL Pratt and Whitney JT9D 19 engine a fact that discredits the perception that all 767 aircraft would be detrimentally impacted should a shorter runway be considered.

The *Runway Length Analysis* forecasts traditional carrier fleet mix as the solitary method of determining how carriers will serve demand by 2020 discounting entirely the use of smaller aircraft to serve routes that otherwise might not be served by larger aircraft as well as those additive flights by competing air carriers.

Evaluating the projected payload reduction by year 2012 associated with a 8,600 LF runway market place, competitors would require approximately two (2) new departures a week by a B737 or similar type of aircraft to serve the forecasted *"passenger payload reduction or so called embargoed passengers"*.

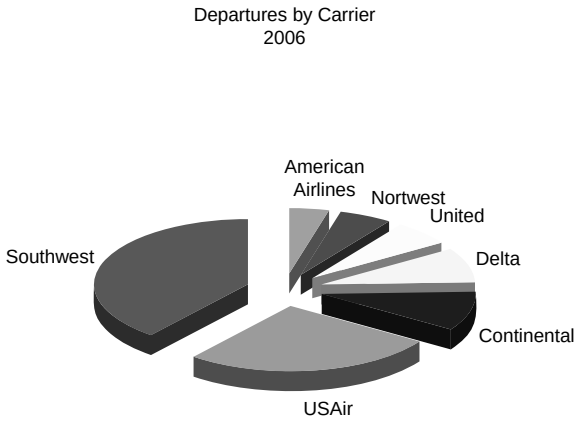
Preliminary Resource Effects resulting from Varying Runway 5-23 Lengths

Runway Length (feet)	Stream Bed Impacts	Wetland Impacts	Passenger payload reduction 2012 (projected)	No Passenger Payload Reduction Market Absorption From Competing Air Carriers
8,100	0 LF	0 acres	99,840	3.7 additional flights a week using a B737 or similar aircraft
8,600	160 LF	.2 acres	43,824	1.9 additional flights a week using a B737 or similar aircraft
9,350	***901 LF***	***1.9 acres ****	***0***	

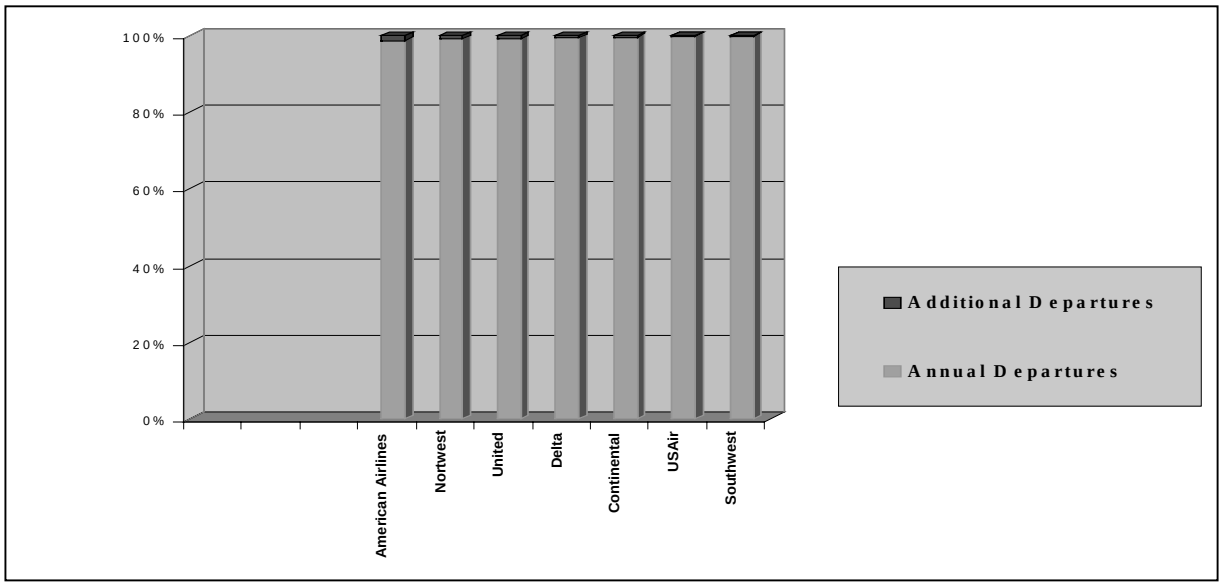
****1% of all operations by 2012 and 7% of all operations by 2020 account for the destruction of almost two acres of freshwater wetlands***

The addition of two (2) new flights a week would be required by any one or divided amongst all seven competing air carriers. The current and future marketplace demand in the region will support service to profitable destinations especially if the destination is under-served.

The study refuses to acknowledge how value pricing forces carriers to consider productivity per passenger as the foremost factor in assigning new service destinations. The forecast as drafted fails to consider optimized approaches to future changes in fleet assignment and routing. To defy economic reality and suggest that a partially filled 767 aircraft would translate into *no service* to a profitable destination is an atypical scenario in this highly competitive aviation environment.



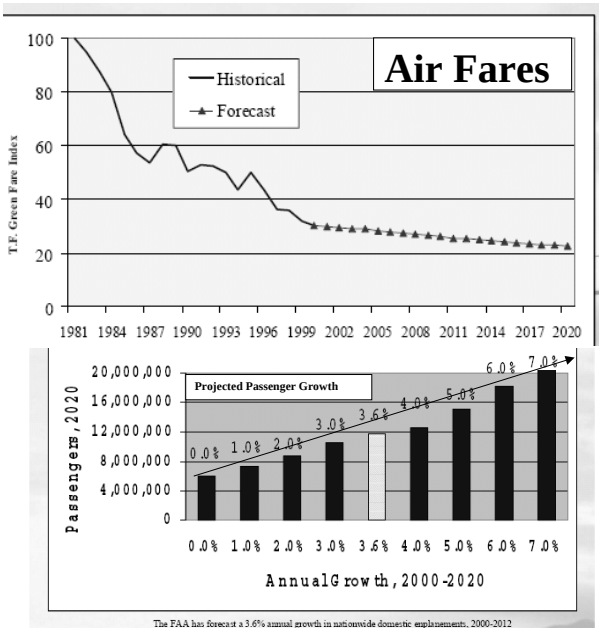
Total Departures Year End Projected	Additional Departures - Year End Market Absorption	Annual Percent Increase
27022	*104*	*.4%*



The case of Southwest Airlines supports the apparent market place changes. A previous consultant analysis forecasted no possible non-stop West Coast service from T.F Green Airport because of the shorter runway length and fleet mix of the local air carriers. Shortly after the forecast was presented in the Airport Master Plan Southwest Airlines announced non-stop service to Las Vegas using the B 737 aircraft.

This occurrence validates the City position that FAA and their consultants have very little knowledge of actual air carrier strategies and future service destinations. Assessment of the airline industry is difficult because dynamic events and competitive advantage reign in this demanding business environment. Transition of legacy airlines to more profitable business models required to compete with the low cost carrier group will guide future changes in fleet assignment and market strategies that are not readily shared with consultants seeking to generate operational and fleet mix forecasts.

Competitive forces within the southern New England regional airport marketplace has reduced air fares and is predicted to continue passenger growth in the 2020 forecast period assuring that future service to profitable non-stop west coast service will be met by either the low cost carrier group or by a transformed legacy carrier. Specifically improved financial performance of T.F Green Airport serving point-to-point operations will enhance the success of servicing air carriers when compared to older congested hub-and-spoke airports such as Boston-Logan International Airport.



Conversely the single runway length selected in this study, along with its five variants assumes that the 2020 forecast is unaffected by trends in pricing, aircraft usage and overall market conditions. Forecasting is not limited to the knowledge base of a consultant, competitive advantage by and between air carriers must be a reasoned variable within the forecast database.

This fact compels the consultant expand the range of probability to reflect current and future trends and develop a multiple runway scenarios that would better reflect the built-in uncertainties and past miscalculations. Similarly, technological advances in aircraft design have propelled aircraft to fly longer with greater fuel efficiency. This study's forecast does not adequately address advancements in the aerospace industry including the assessment of retirement schedules of older aircraft as well as the initiation of new aircraft purchases that are more fuel-efficient and travel further.

Generally the consultant relies on anecdotal projected service destinations and aircraft use data that is focused on aircraft use characteristics of past years failing to acknowledge marked industry trends that indicate a shift which includes the reallocation of larger older aircraft to serve more profitable routes as a reaction to competition and changing market share and growth in the low-cost carrier group. Restructuring of the airline industry may result in changes to legacy air carriers pricing structures and levels of service transforming the air service market to compete with the low-fare carrier group. Air carrier pricing strategies can dramatically change market share through price competition impacts profitability or financial viability of air service at the airport and support the perspective that competing air carriers would serve the projected "passenger payload" reduction through the initiation of new flights and the use of smaller aircraft.

Major Airlines Serving T.F Green Airport - 1st and 2nd qtr. 2006 Departures

Air Carrier	Total departures 1st quarter 2006	Total departures 2nd quarter 2006	Year end projected	Predicted Forecasted Passenger Payload Penalty 2020	
				8,300 lf/ 165,238 2.35 additional flights per week	8,600lf/ 108,109 1.9 additional flights per week
American Airlines	289	276	1130		
Northwest	308	444	1504		
United	380	437	1634		
Delta	558	603	2322		
Continental	596	707	2606		
USAir	1358	2258	7232		
Southwest	2465	2832	10594		
Total			***27022***	**Say 2 additional flights per week**	

Current and future fleet mix operating at this airport are primary components in the consultant's forecasting of runway length alternatives using as a guide the Federal Aviation Administration Airport Reference Code (ARC) standards included within AC 150/5300-13 entitled *Airport Design*.

Whereas the City appreciates that the FAA design criteria must adhere to the principals of the FAA advisory circular (AC) the operational and physical characteristics of B767-300 aircraft operated at the airport as the "Design Aircraft" is questionable as to it's forecasted role at the airport because of the changing market conditions described above. The technical evaluation of the "Design Aircraft" forecasting projected use of the B767 is suspect which is a critical factor in driving the perceived need for a longer runway which is actually required to meet the purpose and need for this project.

Constructing larger than required runway length will cause to fail a cost-benefit analysis and thrust onto the community both an unnecessary and unwarranted impact on the community. The economic viability of hub operations is challenging allowing point to point service at regional airports such as T.F. Green Airport to focus on efficient scheduling and utilization of aircraft. The inability of the consultant to build on generic assumptions with real world developments defies current market trends within the aviation industry thereby eliminating the possibility that a shorter runway will be considered PRIOR to initiation of the E*nvironmental Impact* phase of the EIS.

The consultant's argument for greater environmental and social impact to gain a longer runway is directly related to eliminating "*passenger payload reduction or so called embargoed passengers"*. The "embargoed passengers" assumption is significant because this perceived deficiency in passenger accommodation predicted by 2020 becomes the sole basis for rationalizing the single longer runway alternative. Ruling out adaptability of the market to accommodate "embargoed passengers" is a defect in this analysis that must be corrected. The FAA Advisory Circular (AC) should not be used as a means to the end approach influencing overall runway length. Instead, the FAA Advisory Circular (AC) ought to be used as a guide to determining minimum runway length appreciating the dynamic nature of the air service marketplace and the inherent inaccuracy of forecast data.

The subjectivity of the FAA Advisory Circular (AC) is witnessed by this Study's recent arguments for the 10,700 LF main runway alternative which was described by the FAA as the minimum runway length necessary to comply with the FAA AC. Just months after aforesaid assessment the "steadfast regulation" was explained away when the consultant removed belly cargo from the aircraft data reducing the overall runway length to 9,350 LF from the original 10,700 LF main runway. Considering the overall impact that the airport places on the host community and the long standing and fervid objection from the community why wasn't the "steadfast regulation" (FAA Advisory Circular (AC)) changed by the consultant in the first calculation.

The proposed runway extension is located in a densely populated community which would direct rational argument to reason that the FAA Advisory Circular is to be used as a guide that embraces reality and not a stagnate document beyond reproach. Optimal runway length is one that provides no impediment to travel and is balanced within the community in concert with its natural environment and cultural resources.

The study has no provision for considering changes by individual carrier's ability to meet the future marketplace demand. No air carrier has "signed on" the servicing the assumed service destinations and the fleet mix assignments and contain no "margin of error" for accuracy of predicting operations, destinations and fleet mix usage by 2020. As significant the consultant fails to stipulate variability of future UAL operations and the potential reallocation of the B767 with smaller B737-300/500 and B757 aircraft which could easily serve non-stop west coast routes that do not necessitate flying a B767 with a "payload penalty".

All Scheduled and Charter Aircraft Forecasted To Operate at T.F. Green Airport in 2012 and 2020 capable of serving non-stop West Coast Destinations

Aircraft	Carrier	% of projected operations by 2012 (500 ops +)	
737-300	DL, US, & UA	4%	
737-500	WN	3%	
737-700	WN	29%	
737-800	D L, AA	1%	
757-200	AA, UA DL, US, NW	7%	
767-300	***Dl, UA US***	***1%***	*** See below**
A-319	US, NW, & UA	3%	
A-320	UA, & US	9%	
		57% of the entire fleet mix serving T.F.Green Airport by 2012 will be cable of non-stop west coast service	****Only 1.75 % of the fleet mix serving T.F.Green Airport by 2012 will be 767 aircraft 1/3 of the aircraft as listed below require only a 8100 lf runway*** ***therefore only about 1.7 % of the of the fleet mix serving T.F.Green by 2012 will require a 9,350 lf runway or greater***

The use of alternate aircraft within an air carriers internal fleet mix is a common marketplace practice. This study requires additional emphasis on projected loading factors in the competitive market place and the impact of air carrier's reallocation of smaller aircraft with higher load factors as a condition impacting the total number of "embargoing " passengers.

The one runway length forwarded for study in the environmental analysis phase of the EIS defies the very definition of the word "option". The entire concept and definition of "alternative analysis" is to consider honest alternatives based on assumed variable understanding that the forecasts and assumptions over a period of twenty years maybe imperfect. If this honest assessment had been performed, one would conclude that a variety of runway lengths should be forwarded to test the range of benefits, cost and impacts fixed to the varied runway lengths. As mentioned no air carrier has "signed on" to fly non-stop West Coast flights establishing the future market place as predictions and subject to change.

Without acknowledging industry changes and margin of error, the speculative data is used as the sole means of establishing one runway length alternative for this airport. The study fails includes alternate runway lengths based on changes to the assumed variables such as changes in fleet mix, bankruptcies, rising fuel costs and improvements in aircraft technology. In fact, the study barely acknowledges the recent revolution in aircraft technology instead choosing to focus on outmoded data sets and older production models and business plans.

I recommend the study be expanded to include additional research into the areas of contemporary pricing strategies and capacity reactions of legacy air carriers entering the low cost carrier market and how entry into this market has impact financial stability or instability of the legacy air carriers the primary carrier forecasted to fly the B767 aircraft in the 2020 forecast period. The current study is planned around use of the largest most infrequent aircraft based on hypothetical service destinations and conditions forecasted over twenty years a premise that is unreasonable if not appropriately buffered by supplementary scenarios that are viable and likely to occur in the future.

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The City of Warwick is of the opinion that the lack of variability within the forecast and fleet mix assumptions included in the runway length analysis ignores contemporary and future challenges that face the air transportation industry and includes an idyllic level of service without reasoned counterbalancing of physical and environmental constraints that surround this airport landuse.

The inability of the study to reflect the aforesaid will result in advancing a single runway length option to the *Environmental Analysis* phase of the EIS that is more costly and causes unnecessary displacement of families, filling of wetlands, disruption of transportation infrastructure, destruction of cultural and historic resources and reduction of affordable housing stock.

In the alternative I recommends redrafting the *Draft Supplemental Alternatives Analysis* to integrate the aforementioned factors in the forecast creating a range of potential passenger payload penalties and adopting shorter runway proposals 8,100 LF and 8,600 LF in addition to the NO BUILD alternative and 9,350 LF runway length options **prior** to the initiation of the *Environmental Analysis* study.

In my opinion the addition of the shorter alternatives and no build alternative would allow a comprehensive review of environmental and social impacts while providing the basis for comparison within a benefit-cost study as a means of determining overall program viability.

WJDJR

END