

## PLANNING AND DEVELOPMENT DEPARTMENT



December 7, 2007

Dear Planning Commissioners:

Attached is the Planning and Development Department report on 2007-1240 which proposes to amend the 2010 Comprehensive Plan and remove limitations on the Jacksonville Aviation Authority's (JAA) ability to extend runway 14-32 by 2000 feet.

As you know, this issue has come up from time to time over the past several decades and has been the subject of much contentious debate. When the JAA indicated they would seek this text amendment, the department took the extra step of hiring an aviation consultant, Woodward and Associates, to analyze data and help prepare our report. The firm's principal, Woodie Woodward, Ph.D., served in senior positions in the U.S. Senate and in the Administrations of four Presidents. She also served for five years as the Associate Administrator for Airports for the Federal Aviation Administration. Given the importance of this issue to the community and its technical nature, I firmly believe it was important for the department to have an independent technical expert review the data and analysis used to justify this request.

In addition, I have been posed with the circumstance where a previous director issued a policy statement that the department would not support the runway extension without community support. However, the department must provide recommendations and reports to the Planning Commission and City Council based on the best current information available to the department.

There are three primary issues surrounding this discussion. First, does this proposal benefit the Jacksonville economy and improve the overall aviation system? Second, does the runway extension improve safety for both those utilizing the airfield and those in its proximity? And third, does the runway extension negatively impact the surrounding community? From the department's perspective, these are all salient issues. However, given the previous commitment of the Planning and Development Department, I believe the last question is of far greater importance than the first two and should, in effect, trump them. In other words, from the department's view, this is not a question of whether the economic and safety benefits outweigh the community impact.

After thorough review of all pertinent information by the consultant and planning staff, we recommend approval of the text amendment as substituted. The Department also proposed three significant changes to the proposed text amendment:

1. The JAA proposed a weight limitation of 60,000 lb. maximum takeoff weight and a prohibition on serving as a certificated commercial service airport in accordance with FAR Part 139. The Department further recommends language limiting operations to ARC C-2 classified airplanes. This will limit the class of aircraft using Craig Field to those which are currently allowed to operate there today.
2. The department proposes that the JAA will establish a noise monitoring program and in the case the noise impacts exceed the contours as established in the Part 150 study, they will initiate appropriate mitigation. Further, the City may direct the JAA to conduct a Part 161 Study (Noise and Approval of Airport Noise and Access Restrictions) to limit noise and/or operational access in a manner that contains the noise contours within boundaries identified in the Part 150 Study.
3. The department recommends prohibiting future extensions or additional runways, including a parallel runway.

The key underlying document used in our analysis is the JAA's Part 150 Noise and Land Use Compatibility Study which was published in 2006 and approved by the Federal Aviation Administration in May 2007. Because the study was approved by the FAA it is assumed to meet professionally accepted standards and practices. In addition to FAA review and approval, the assumptions in the report were independently reviewed by our consultant. According to the Part 150 Study the areas within the noise contour will be reduced and shift with the extension of the runway. As a result, in 2020, there will be less land (reduced from 401.6 acres to 349.3 acres) and less projected population (from 1137 to 894) in the noise contour with the runway extension than without it.

Regardless of the extension, the amount of aviation activity will increase at Craig Field in sheer numbers. It is true that there are aircraft that can land at Craig Field that tend to not use Craig Field today because of the current limitations. Activity of such aircraft is assumed to increase. The Part 150 Study accounts for the projected increase in overall operations (209,566 annual operations to 214,562 annual operations) and greater jet activity (from 3% to 7% of total operations) with a longer runway. The study projects the most likely scenario. However, airport master plans have historically overstated projected activity. Ultimately, the best data available to the department and independently reviewed by the Federal Aviation Administration and aviation

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experts indicate there will be a positive impact on the surrounding community. While there are additional benefits to the community as a whole, this is the primary basis for our recommendation of approval.

This is a particularly difficult issue for the Planning Commission to consider. I believe that the Planning and Development Department's role in an issue like this is not to simply provide a sound recommendation based on the best available data, but provide thorough and thoughtful background information, data and analysis so you can make a sound decision. In fact, I think the latter is far more important. I hope you find that this report meets that objective.

Sincerely,

A handwritten signature in black ink, appearing to read "Bradford G. Thoburn". The signature is fluid and cursive, with a long horizontal stroke at the end.

Bradford G. Thoburn  
Director of Planning and Development

BGT

**Report On Proposed Text Amendment**  
**To The Future Land Use Element and Transportation**  
**Element**

**2007-1240**

**Applicant's Proposal**

This amendment seeks to add and revise policies related to the expansion of the runway facilities at Craig Airport while continuing to ensure that the City support the maintenance of Craig Airport in its current role as a General Aviation Reliever Airport to Jacksonville International Airport, as defined by FAR Part 91 General Aviation regulations.

In the maintenance of Craig Airport in its current role as a General Aviation Reliever Airport to Jacksonville International Airport, the Jacksonville Aviation Authority shall continuously implement the Federal Aviation Administration's approved Part 150 Noise Compatibility Program and the JAA safety improvement program for Craig Airport; this amendment will include a 2000 foot runway extension which shall be limited to the southeastern most portion of Runway 32, and only permitted where such extension will increase safety by increasing the runway available for stopping on landing, and aborting on take-off; where such extension will increase safety and minimize noise impacts on surrounding residential neighborhoods; where JAA will continue to develop and monitor an FAA-approved voluntary noise abatement program that will minimize flights over any residential areas; where any residence located in the most recently updated noise impacted area as defined by the FAA will be eligible for purchase by JAA in accordance with FAA policies and procedures for purchase of property for noise compatibility purposes at fair market value; that Craig Airport will not serve as a certificated commercial service airport in accordance with FAR PART 139; that certified gross landing weight of 60,000 lbs shall be the maximum certified gross landing weight for all aircraft for the proposed extension and; that the JAA will continue to meet with a Craig Airport Citizen's Advisory Committee on a quarterly basis, at a minimum, to discuss future planning and development issues.

In addition, this amendment seeks to ensure that the City shall amend the 2010 Comprehensive Plan as necessary to incorporate additional data and analysis, generated as a result of the completion of the airport master plans for Jacksonville International, Craig, and Herlong Airports, and to facilitate the implementation of these master plans and any subsequent revisions, so long as

the status of General Aviation Reliever Airport under FAR Part 91 General Aviation regulations be maintained for Craig Airport.

## **Background information**

Craig Municipal Airport (IATA: CRG, ICAO: KCRG, FAA LID: CRG) is a public aviation facility located eight miles (13 km) east of downtown Jacksonville, owned and operated by the Jacksonville Aviation Authority. Originally built by the U.S. Navy and U.S. Army Air Corps during World War Two for combat pilot training, this mid-sized general aviation facility now handles personal aircraft and small commuter planes and falls under the Federal Aviation Regulation (FAR) classification of Part 91, General Aviation Reliever Airport. The airport has a control tower, serves as home to more than 300 planes, and handles 400-500 aircraft operations daily. Two Fixed-Base Operations, or FBOs (Craig Air Center and Sky Harbor), providing fuel service, aircraft maintenance and repair, and hangar facilities for lease, operate out of the facility, as do numerous flight training schools. The facility is roughly 1295 acres in size, and is served by vehicular entrances located along St. Johns Bluff Road, north of Atlantic Boulevard. In 2005 the facility reported an estimated 162,000 operations (take-offs and landings).

The Federal Aviation Regulations (FAR) are organized into sections, called parts, due to their organization within the Code of Federal Regulations (CFR). Each part deals with a specific type of activity. For example, 14 CFR Part 141 contains rules for pilot training schools. Part 91 refers to General Operating and Flight Rules.

By definition, a General Aviation Facility is one which encompasses all Civil Aviation other than Scheduled Air Service. Some types of aviation considered General Aviation include but are not limited to; Aerial Photography, Aerobatics, Air Charter Service, Air Cargo Service, Crop Dusting and Insect Control, Flight Training, Executive Transportation, Search and Rescue and Traffic Reporting. The airport is located near a number of residential areas, and has become a noise sensitive facility. As a result, the airport continues its efforts to be a good neighbor and has established a Noise Abatement Program.

Zoning and Land Use activity in the vicinity of Craig Airport is reflected in (98 zoning applications over the last 10 years) a comparison of like analysis of the Property Appraiser's Property Use (PUSE) Codes from 1999, (the first year Planning and Development archived parcel data in a digital format retrievable via GIS), and 2007 shows an increase in the total number of residential units from 21,350 in 1999 to 25,786 in 2007. In 1999, based on PUSE codes, there were 15,904 Single Family Residences, 199 Multi-Family Residences including 146 individual condos, for a total of 21,250 residential units (15,904 SF, 146 condo, 5300mf units). In 2007, based on PUSE codes, there were 21,140 Single Family

Residences, 697 Multi-Family Residences including 652 individual condos, for a total of 25,786 residential units (21,140 SF, 652 condo, 4500mf units). The decrease in multi family rental units and the increase in condos between 1999 and 2007 represent the recent trend in apartment to condominium conversion.

The following is a timeline of the planning process regarding this proposal **as stated by JAA:**

### **1963**

Since 1963, when the Airport was owned and operated by the City Of Jacksonville, Department of Aviation, various proposals have been put forth to extend one or both runways at the airport to increase the safety of operations during landings and take-offs. With the advent of business jet and other higher performance aircraft since 1963, this need has become more critical. The 1963 Master Plan indicated a planned 1,000 foot extension to the southeast end of Runway 14/32 and a planned 1,000 foot extension to Runway 5/23.

### **1969**

In 1969-1970, the Jacksonville Area Planning Board contracted for a Jacksonville Airports System Plan. The study indicated that one other airport in the system besides JIA should be equipped with IFR (Instrument Flight Rules – Low ceilings and visibilities caused by bad weather) capabilities for use by all-weather general aviation aircraft. Because of concerns about conflicts between the Navy at Cecil Field and Mayport with civilian aircraft at Herlong and Craig, the study recommended de-emphasizing development of Herlong. Further, the study recommended the development of an engineering-economic analysis to determine (1) if Craig Airport could be expanded into a large general aviation facility with IFR capabilities, or (2) if construction of a new airport between Jacksonville and St. Augustine was feasible or required, or (3) if joint use of a military facility was feasible.

### **1970-1974**

In late 1968, the City of Jacksonville transferred ownership and operation of all three airports in Duval County to the Jacksonville Port Authority. They began a Master Plan study for Jacksonville International Airport, Craig Airport and Herlong Airport in 1972 to determine needed aviation development between 1972 and 1992. The study forecasted operations at Craig to grow from 20,000 in 1962 to over 356,000 by 1992. The initial study recommendations were for Craig Airport to have a 3,700 foot parallel runway to Runway 14/32 located 1,400 feet northeast of the current runway with provisions for a 2,000 foot extension to the southeast on existing Runway 14/32 increasing the length to 6,000 feet in the long term.

One major concern voiced in the report was the compatibility of airport operations with surrounding land use. The Jacksonville Area Planning Board's Plan-1990 indicated that Craig Airport would be completely encircled by urban development by or before 1990. Because Craig Airport was planned to remain a general aviation facility, the report noted the importance of enforcing maximum compatibility in the approach zones off the ends of present and proposed runways.

The final study recommended that all airports in the system be developed to accommodate forecasted aviation activity but with no further improvements at Craig or Herlong in excess of that necessary to accommodate light general aviation activities. This included the 3,700 parallel at Craig and the development of a fourth airport in Duval or adjacent county or at a joint use military airport.

On January 10, 1973, the Authority received a letter from the US Navy ruling out any possibility of a joint use facility or the potential release of any military airport in the region. The letter also objected to any significant increase in operations at Craig or Herlong.

On February 27, 1973, the authority board voted to develop JIA, Craig and Herlong as proposed in the study recommendations and plan for the addition of a fourth airport after 1982. Following this vote the final report was issued in 1974.

## **1976-1990**

In 1979, the JPA began another planning effort to look at the necessary improvements to meet the future aviation needs of the community. Since the previous study had recommended a new airport site, the study reviewed efforts to identify a new site. A 1976 Florida Aviation System Plan had determined that the increase in aviation activity was not sufficient to justify the construction of a new airport facility, particularly in light of the economic cost, airspace constraints, environmental concerns and licensing delays. The 1979-1981 study was developed as an Environmental Assessment (EA) for an extension to Runway 14/32 at Craig.

The EA alternatives included: Alternative 1 – Do Nothing; Alternative 2 – Build 4,000 feet of additional pavement to the southeast on the Runway 32 end and relocate the Runway 14 threshold 2,000 feet southeast for a 6,000 foot runway and add a 3,200 foot parallel northeast of the existing Runway 14/32; Alternative 3 - Add 2,000 feet to the southeast end of Runway 32 for a 6,000 foot Runway 14/32 with no relocated threshold and a 3,200 foot parallel as in Alternate 2; Alternative 4 - Add 2,000 feet to the southeast end of Runway 32 for a 6,000 foot Runway 14/32 with no relocated threshold and a 3,200 foot parallel to Runway 5/23.

In 1979 there were 111,500 general aviation operations at Craig. Of these operations approximately 360 were from jet operations with no jets based at Craig. By 2005, the study forecasted 323,000 operations with an airfield Annual Service Volume (ASV) of 190,000 operations. Annual Service Volume is a measure of the runway capacity with no delay of over 15 minutes. Jet aircraft were forecasted to make up approximately 8,075 of these operations. The need for the proposed parallel runway was driven by the number of forecasted operations in the study period. The need for the 6,000 foot runway was driven by the need to safely handle the increasing numbers of jet aircraft that were beginning to use Craig Airport without the extension. As a part of the EA process, an extensive noise analysis was conducted that included actual monitoring of selected sites around the airport. The preferred alternate of the EA was Alternative 2 because it shifted noise away from the Holly Oaks neighborhood while also increasing the runway length to safely provide for the increasing numbers of jet aircraft using the airport.

In March 1981, a pre-application conference was held in compliance with Chapter 380, Florida Statutes, to coordinate the Florida Development of Regional Impact/Application for Development Approval DRI/ADA process with the Federal Environmental Assessment process. On May 7, 1981, the Public Hearing for the Federal EA was held. On August 11, 1983, the FAA issued a Finding of No Significant Impact. In 1986, it was determined that additional DRI analysis would be required. In 1987, an extensive public information program was begun to inform the City Council, neighborhood groups, the military and other interested parties about the need for the extension, the safety benefits and the projected noise impacts and improvement of conditions in Holly Oaks. These efforts continued through 1989. It should be noted that by 1987, with the changes in aircraft operating procedures mandated by the FAA, the military was no longer opposed to increase operations and IFR procedures at Craig.

In 1988, the Florida Department of Transportation conducted a Northeast Florida Aviation Systems Plan study. The study looked at all of the airports in the region and concluded that development of all of the regions airports would be required to meet long range aviation demand. The study did not see the same growth in aircraft operations as previous studies. The 1988 FASP study forecast Craig to have 210,000 operations in 2005 which decreased the need for a parallel runway. However, the study did see the need for the extension to Runway 14/32 to increase the safety of business jets operating at Craig.

In 1990, the City Council passed the 2010 Comprehensive Plan that contained a provision that supported continued operation of Craig Airport provided that no further expansion of its runways shall be permitted.

#### **1991-1994**

In 1991, the JPA began another system Master Plan to identify and discuss options to meet the aviation needs of the regional airport system. The study noted that operations at Craig had increase by 65 percent from 1979 to 1989, and based aircraft had increased by 43 percent with 183,000 operations and 269 based aircraft of which 6 were jet aircraft. This study still projected a high number of potential aircraft operations with 347,000 operations and 366 based aircraft forecast by 2010. Of these 2,900 were forecast to be jet operations and 11 were forecast to be based jets.

The 1992 and 1994 Comprehensive Aviation Planning Program for Craig recommended a runway length of 5,400 to 5,600 feet to accommodate 75 to 100 percent of the C-II aircraft in the general aviation fleet at 60 percent useful load. The study projected an Annual Service Volume (ASV) of 246,000 and recommended a short parallel runway for capacity prior to 2010. The final recommendation was for a 1,600 foot extension to both Runway 14/32 and 5/23 and a 3,200 foot parallel south of Runway 5/32. This configuration shifted much of the touch and go traffic off on to 5/32 and the 5/32 parallel to decrease noise over Holly Oaks. The parallel runway was programmed for construction in 1995 with the extension to Runway 14/32 programmed for 2001.

The study also looked at the need for a fourth airport, not to replace Craig or Herlong as envisioned in the 1973 timeframe, but to serve future demand that might not be met at the existing airports.

## **1997**

In 1993, the Navy identified NAS Cecil Field for closure in 1999 as a part of the Defense Base Closure and Realignment Act (BRAC). In 1997, the JPA undertook the Northeast Florida Aviation System Plan and Cecil Field Feasibility study to determine if a need existed for another civilian airport in Northeast Florida. This study looked at the forecasted demands and expansion capacities of every airport in the region. For Craig, the study noted 191,000 operations in 1990 and forecast 215,000 operations by 2000 and 264,000 operations by 2015. There were 269 aircraft (6 jets) based at Craig in 1990 with a forecast of 256 (9 jets) in 2000 and 355 (11 jets) in 2015.

This plan recommended a runway length at Craig of 7,000 feet to serve 75 percent of the general aviation business jet fleet to 60,000 pounds maximum take-off weight (MTOW) at 90 percent useful load. The study identified the need for all of the regions' airports, including a civilian airport at Cecil Field, to serve forecasted aviation needs of the community. Again, this was a major change from the conditions projected in 1973.

## **1999-2001**

In 1999, JPA began another planning effort to determine the facilities required to meet the future aviation demands at Craig. This Master Plan study identified the need for a 2,000 foot extension to the southwest on the Runway 32 end. This would provide 6,000 feet of take-off runway and with a 1,000 foot displaced threshold on both Runway 14 and 32, would provide 5,000 feet for landing. This proposal provided the runway safety requirements for 75 to 90 percent of the business jet fleet at 60 percent useful load.

This plan began to recognize that operations were not increasing at the rate the earlier plans had projected and therefore did not propose a separate parallel runway as a requirement. It did project the increasing use by business jets even without a runway extension. This plan recognized the need to increase the safety of the runway for these types of operations by increasing the runway length.

As a part of this study, additional noise analysis was conducted that looked at the noise impacts to the Kensington neighborhood as well as the Holly Oaks neighborhood, even though the Kensington neighborhood is well outside any FAA recognized noise impact zones. The proposed plan was a compromise that attempted to reduce noise impacts to both neighborhoods. As a part of the additional analysis, JPA developed a voluntary noise abatement program to improve the noise impacts caused by aircraft flights from Craig Airport.

This plan was followed by an extensive public involvement program that attempted to inform the residents of the need for the improvement as well as the noise mitigation benefits.

## **2001 to present**

In 2001, the Jacksonville Aviation Authority (JAA) took over ownership and operation of the Duval County airports system from the JPA. In September of 2001, the United States was attacked by terrorists, and people were unsure of the economy and the future of General Aviation. The Florida Army Guard Helicopters relocated to Cecil Field, removing one of the major noise complaint issues from Craig.

In 2005-2006, JAA began the development of a Part 150 study to develop FAA approved noise mitigation measures for Craig Airport. This study report 135,500 annual operations in 1997; 137,800 in 2000; 174,500 in 2009 and 210,000 operations without a runway extension in 2020 and 214,000 operations with an extension. Jet operations were 4,750 in 2004 and are projected to grow to 5,200 in 2009 and 6,400 in 2020.

The noise contours show a clear reduction in noise over the Holly Oaks area from the proposed runway extension with relocated thresholds with no appreciable increase in noise over Kensington.

In 2006-2007, JAA began another Master Plan Update. The forecast for this effort indicates there were 162,000 operations with 4,900 jet operations and 10 based jets in 2005. Operations are projected to grow to 177,000 with 7,900 jet operations in 2010 and 212,000 in 2020 with 14,863 jet operations in 2020. This plan also recommends a 2,000 foot extension to the southeast on the Runway 32 end for a 6,000 foot runway for take-offs and a 1,000 displaced threshold on each runway end for 5,000 feet for landings in each direction. There is no parallel runway recommended.

We are now requesting a text change to the 2010 Comp Plan to establish the parameters that will allow the JAA to meet the aviation needs of the flying public while protecting the surrounding neighborhoods from the impacts of operating aircraft over 60,000 pounds and/or aircraft operating in a Part 139 air carrier role.

## **Applicant's Justification**

The Department asked the applicant to respond to several questions. Below are the Department's questions and the applicant's responses.

**QUESTION** - The City of Jacksonville made a policy decision in the early 1990s to not allow any runway extension at Craig. From an aviation perspective, what is the difference in circumstances between then and now?

**RESPONSE** - Aircraft operations over the last 40 years demonstrate that Craig does not have a capacity issue but rather a potential safety issue from the increased use of the runway by B-I/II and C-I/II business jet aircraft. JAA believes the capacity issue can be handled by our system of airports without adding a parallel runway at Craig. However, because of Craig's central location, we believe business owners will continue to increase business jet usage at Craig with or without an extension. In 1990, jet activity at Craig was limited but has steadily grown. Even with increased usage, business jets will only account for 3 to 7 percent of the future activity at Craig. This is a very important percentage to Jacksonville's overall economic well-being.

Since 1990, Cecil Field has been added to the JAA system. Even with this new airport, business jet usage at Craig has increased. We believe, and the technical analysis indicates, that this increased usage requires a longer runway at Craig to increase the safety factors for these aircraft. We believe, and the technical analysis supports, that the runway extension will increase safety both on and off the airport while reducing the future noise impacts to the surrounding neighborhoods.

The past and current managers of Craig for over 40 years have consistently maintained that the runway at Craig should be extended for safety reasons and to meet the aviation needs of the greater Jacksonville community. During the same 40 year period, there has never been any plan by any of the past or current managers to bring large commercial service airplanes to Craig. We believe these facts have been lost in the past discussions on this issue.

QUESTION - What impact has the addition of Cecil Field as a civilian facility had on the need, or lack thereof, for a runway extension at Craig?

RESPONSE - Cecil Field's primary role is to serve as a Maintenance, Repair and Overhaul (MRO) facility for large commercial service and high performance military aircraft. While there is some use as a corporate general aviation facility that use has been slow to develop as there is limited area for corporate hangar development at the airport. As discussed in the first question, the 1997 Northeast Florida Aviation System Plan and Cecil Field Feasibility study forecasted the need for maintaining and improving all of the airports in the Northeast Florida Aviation System to meet long term forecasted demand. This included Craig Airport with an extended runway.

QUESTION - After an extension, what would be the limiting characteristic, from a physical facility perspective, to a broadened use of the facility beyond the current Part 91 classification?

RESPONSE - The facilities at Craig are designed to accommodate C-II category aircraft weighing 60,000 or less. This will limit larger wingspan category III aircraft, higher approach speed category D aircraft and aircraft heavier than 60,000 MTOW from using the airport.

The runway length of 6,000 feet for take-offs and 5,000 feet for landing will accommodate 75 percent of the aircraft listed in FAA A/C 150/5325-4B Runway Length Requirements for Airport Design (sent separately) at 60 percent useful load under all conditions and most of the 75 percent fleet of aircraft at 90 percent load. While this length will support the 100 percent fleet of aircraft listed in the Advisory Circular at 60% load on many days, these aircraft would be less likely to base at Craig because of they could not use the runway at increased loads on hot or wet weather days.

The airport does not have the Aircraft Firefighting, Security and other supporting facilities required to obtain a Part 139 Certificate required to operate scheduled aircraft with over 9 seats or unscheduled aircraft with over 31 seats. It has never been in any of the airport plans since 1963 nor is it in any future plans to operate Craig Airport as a Part 139 Air Carrier Airport.

QUESTION - What changes to taxiways and other ground facilities would be needed to accommodate broadened use of the facility beyond the current Part 91 classification?

RESPONSE - The taxiways are marked at 35 foot width which serves Group II aircraft. The taxiways would have to be increased to 50 foot width to serve Group III aircraft. An Aircraft Fire and Rescue Station, increased security and terminal facilities would have to be added to serve Part 139 operations if they have over 9 seats on scheduled passenger service or over 31 seats on unscheduled service regardless of aircraft category.

QUESTION - Does an extension affect public safety off the airport grounds?

RESPONSE - Public safety off the airport grounds should not be negatively impacted by the proposed extension. The extension to the southeast moves the start of take-off roll further away from the airport's northwest property boundary providing increased room for an aircraft experiencing troubles to remain on airport property. Additionally, the displaced threshold puts aircraft further away from the northwest property boundary upon landing.

Currently the property to the southeast is undeveloped. JAA is aware that a developer has plans to potentially construct residential units off the southeast end of the airport. JAA will work with the developer to encourage more compatible development in the areas closest to the runway extension. Because aircraft will take-off from the same place they do today in this direction, there is no change in safety. While the landing threshold will be 1,000 feet closer than today, the increased runway length for landing and take-offs will still increase off-airport safety in this direction.

QUESTION - How does the noise contour change from the current configuration when a runway extension is projected?

RESPONSE - In 2004, the 65-70 DNL contour covered 13.8 acres of off airport property. Without a runway extension, this will grow to 18.8 acres by 2009 and 39.9 acres by 2020. With the extension, the 2020 projected 65-70 DNL contour will be 9.4 acres which is lower than it is today. There is a discrepancy between the listed aircraft in the Craig Airport Master Plan Update and the Part 150 Study.

QUESTION - Will an extension increase the number of flights?

RESPONSE - The Part 150 study forecasted 210,000 annual operations in 2020 without the extension and 214,000 annual operations with the extension.

QUESTION - If the number of flights is increased, how will additional traffic be accommodated on Atlantic Blvd.?

RESPONSE - The growth projected at Craig has been included in the planning forecast for Craig since at least the 1972 Craig Airport Master Plan. JAA has provided property for drainage ponds to FDOT for the Atlantic Road widening, the Monument Road widens and property for right-of-way for the St. Johns Bluff Road widening. In addition, the latest revisions to Florida's growth management laws exempt aviation facilities from concurrency requirements. The 1994 Master Plan did look at trip generation rates and forecasted 2500 daily trips and 240 peak hour trips when aircraft traffic was projected to reach 347,000 annual operations. Based on the 1994 analysis we are currently generating less than 160 peak hour trips. We estimate the pm peak hour trips are even lower.

QUESTION - After an extension of the runway, what additional improvements to the facility would be needed to increase capacity?

RESPONSE - A parallel runway would be required to produce any significant increase in capacity. All of the Master Plans prior to 2001 projected annual operations of between 250,000 and 340,000. This exceeds the annual service volume of the existing two runway system which is between 190,000 and 246,000 annual operations depending on the various operating assumptions made by each consultant.

All of the plans prior to 2001 proposed a parallel runway to provide for the projected level of operations. The 2001 and 2007 Master Plans have projected lower annual operations in the 230,000 to 240,000 range and proposed to relocate Runway 5/23 500 feet to the south theoretically resulting in a modest capacity increase that would provide for the forecasted operations.

QUESTION - Is there a demonstrated need for the extension?

RESPONSE - FAA guidelines require that facilities should be provided when there are more than 500 operations of a particular type aircraft occurring or forecast to occur at an airport. The 2007 Master Plan reports that there were 4,920 jet operations that were recorded in 2006. Of these 1,554 were from aircraft at Craig and 3,366 were from transient aircraft. Based on the requirements in FAA AC 150/5325-4B (provided separately), a runway length of 6,000 feet for take-off and 5,000 feet for landing is required to meet the safety needs of 75 percent of the general aviation aircraft fleet listed in the FAA Circular at 60 percent useful load under all weather conditions.

QUESTION - Is there an alternative to the extension, such as an Engineered Material Arresting System (EMAS)?

RESPONSE - The EMAS system is to be used when the FAA required Runway Safety Area can not be provided to standard based on terrain features, property limits or other physical constraints. At Craig we have currently meet the standard s for Runway Safety Areas and will be able to meet the standard with the runway

extension. FAA requires that a runway be designed for 500 operations of the most demanding aircraft using or forecast to use the runway system. We currently have B-II and C-I/II aircraft that are using Craig that based on the FAA standard should have 6,000 feet of runway. These aircraft can safely use Craig by reducing the useful load the aircraft is carrying or by operating on cooler good weather days when the existing length meets the operator's requirements for safe operations. EMAS does not solve this deficiency. Also EMAS would not allow aircraft taking off on Runway 32 to the north to be 2,000 further away from the Holly Oaks neighborhood, thereby removing the noise mitigation benefits of the 2,000 foot extension for take-offs and 1,000 foot displaced threshold for landings, that the JAA proposal provides.

QUESTION - Does the extension change the size and type of airplane Craig Airport can support?

RESPONSE - Craig Airport is already serving over 4,920 jet operations that would benefit from the proposed extension. This represents approximately 14 daily arrivals or departures by 7 aircraft in 2006. This number is projected to grow to over 14,500 by 2020. This represents approximately 40 daily arrivals or departures by 20 aircraft. These aircraft are all B-I/II and C-I/II business jets operating at 60,000 pounds or less maximum gross take-off weight. A list will be provided

QUESTION - Does an extension change the size and type of plane that Craig Airport is likely to support after the improvements?

RESPONSE - A list will be provided. FAL20 and CL601 are added aircraft.

There is a discrepancy between the listed aircraft in the Craig Airport Master Plan Update and the Part 150 Study

QUESTION - Understanding that Part 91 currently applies, what increased role, if any, would Craig Airport likely play in the overall JAA system of airport services after the extension, related to number of planes or flights which would choose to use the facility rather than JIA, Cecil, Herlong or St Augustine Municipal?

RESPONSE - As discussed in the 1997 Northeast Florida Aviation System Plan, all of the system's airports are required to meet projected growth in the region. Operations at Craig will continue to grow with or without an extension and the airport will continue to serve Category B-I/II and C-I/II general aviation business jets as well as increasing numbers of the other GA (General Aviation) aircraft. Craig's role in the system will continue to be a General Aviation Reliever Airport for JIA.

QUESTION - What are the descriptions of the FAA classifications for various types of airports?

RESPONSE - The National Plan of Integrated Airports System published by the FAA and FAA Order 5090.3C defines the classification of airports as such.

Commercial Service Airports – Airports that are publicly owned, enplane 2,500 or more passengers annually, and receive scheduled passenger aircraft service. Commercial service airports are classified as either Primary or Non-Primary.

Commercial Service (Non-Primary) - Publicly owned airports that receive scheduled passenger aircraft service and enplane more than 2,500, but less than 10,000 passengers annually.

Commercial Service (Primary) - Publicly owned airports that receive scheduled passenger aircraft service and enplanes more than 10,000 passengers annually.

Large Hubs – (Are) those airports that each account for at least 1% of total U.S. Passenger enplanements.

Medium Hubs – (Are) those airports that each account for between 0.25% and 1% of total U.S. passenger enplanements.

Small Hubs – (Are) those airports that each account for between 0.05% and 0.25% of total U.S. passenger enplanements.

Non-Hubs - Those airports that each account for less than 0.05% of all U.S. passenger enplanements, but more than 10,000 annual enplanements.

General Aviation Airports – Airports not meeting the criteria to be classified as Commercial Service.

General Aviation Reliever Airports – Airports designated by FAA as having the function of relieving congestion at a commercial service airport and providing more general aviation access to the overall community. Craig is a General Aviation Reliever Airport.

QUESTION - Can you provide pictures of types of aircraft that will comply with the weight limitations?

RESPONSE - Pictures will be provided. INSERT Photos or reference to attached! Craig Draft Master Plan Update, Page 4-9 ATTACHMENT (2)!

QUESTION - Can you tell us whether there is a smaller weight of plane that would accomplish the bulk of the JAA objectives?

RESPONSE - The FAA Runway length standard references aircraft at 60,000 pounds or less. It provides a list of the 75 percent fleet and the 100 percent fleet. JAA's objective is to provide a safe runway for the 75 to 100 percent fleet at 60 percent useful load under all weather conditions.

QUESTION - Would any smaller extension of the runway be acceptable to JAA?

RESPONSE - All of the current analysis supports the need for a 6,000 foot runway for take-offs and a 5,000 foot runway for landings.

QUESTION - What are the consequences of not extending the runway?

RESPONSE - JAA believes this will increase the risk that an aircraft will have an accident on take-off or landing that could have been prevented or mitigated by a longer runway length.

QUESTION - If the justification does not include them, can you please let us know the JAA objectives for the runway extension?

RESPONSE - JAA's objectives for the runway extension are to increase the safety of operations at Craig both take-offs and landings for the small and medium business jets that are currently using Craig and are forecast to use Craig in the future, improve the efficiency of JAA's airport system to enable the system to meet projected demand, decrease the projected noise impact on the surrounding neighbors and contribute to the economic growth for all of Jacksonville.

QUESTION – Jeannie Fewell Letter?

RESPONSE - We (JAA) believe(s) the dialogue we are having with Councilman Bill Bishop and the process we are going through in the review of the Comp Plan Text Amendment meets the spirit of community involvement addressed in the Fewell letter. We believe the position that proposed developments must have unconditional support of the neighborhoods and residents of the community to gain Planning Department support is not the standard that has been applied to most of the developments that the Planning Department reviews. Rather, we believe the Planning Department must make judgments that weigh the community benefit of an action with the concerns of surrounding residents and recommend what is best for the community as a whole.

## Staff Analysis

The City of Jacksonville's Planning and Development Department has the obligation to review and make recommendations that protect and/or enhance both the community at large and specific communities facing new or changing policies. In this regard, the Department established the following criteria: the proposal's consistency with all applicable plans, the proposal's economic impact, the proposal's impact to safety, and the proposal's noise impact, to determine the Department's recommendation. The material provided by the applicant, the Department's consultant, and the Department's independent analyses will be applied to this criteria. While the recommendation criteria do not represent the entire universe of possible criteria to judge this proposal, they do represent what the Department believes to be the most important.

Furthermore, the validity of assumptions in studies provided to the Department is assumed to represent professionally accepted standards and practices. In particular, the Part 150 Noise and Land Use Compatibility Study as approved by the FAA on May 22, 2007, is assumed to meet the professional accepted standards and practices test. The Department does not have the expertise to call into question material facts of a document approved by the FAA. In order to independently verify the validity of the JAA's statement, the Department acquired the services of Woodward and Associates as an independent expert. The consultant's report is attached as Appendix 1.

The applicant's provided history of Craig Airport and the planning efforts that have taken place indicate that the Master Plans for Craig have included a 6,000 foot runway since the early 1970s. However, the 1992 Master Plan Study dated March 1974 makes a recommendation of an additional parallel runway of 4,000 feet. No recommendation of a 6,000 foot runway could be found. The earliest recommendation of a 6,000 foot runway in the material provided to the Department by the applicant is in the Master Plan Update to Craig Airport dated October 2001. The recommendation is also in the current Approved Part 150 Noise and Land Use Compatibility Study and the Current Draft of the Master Plan Update.

A review of the City of Jacksonville's 2010 Comprehensive Plan indicates that the proposal would not be inconsistent. In particular, Policy 8.1.5 of the Transportation Element states "The City should support the JAA in the implementation of the plans and policies which will enable it to provide sufficient airport-related facilities at the City's airports which meet the constrained demands for services, and facilities as forecasted in the 2010 Comprehensive Plan and which meet the goals, objectives, and performance criteria of CFASPP." and Policy 11.1.2 "The City shall support both the private and public sector (JPA, JAA, and JTA) in their efforts to meet existing and future demands for transit, airport, port, and rail services and facilities." Additional applicable policies can be found in Appendix 2 to this report. Given that the runway

extension is part of the planning process in both the Master Plan and the Part 150 study, the above policies suggest the proposal is consistent with the all applicable plans.

The applicant provided the Department with results of studies that indicate the proposal has the potential to generate both positive and negative economic impacts. Copies of the material will be placed in the appendix. One study was completed in December 1999, by TriState Planning & Engineering in association with Prosser, Hallock, Inc. of Jacksonville. In it, the extension was forecasted to increase the economic benefit to the City by at least \$6.6 million annually. The longer runway at Craig would make Jacksonville more accessible and attractive to businesses that rely upon corporate aircraft, and would increase the airport's contribution to the Jacksonville economy.

The other study entitled Seller Disclosures and Property Values seems to indicate that the location characteristics of homes, close to airports, generates a four percent discount in price compared to similar homes with different location characteristics. It is assumed that this discount has been in existence since the construction of the homes surrounding Craig Airport. The study further concludes that disclosure requirements create an additional discount of three percent. Based of the 2020 DNL Noise Contour Comparison – Existing Airfield vs. MP Runway Extension and Table 14-5 from Woodward and Associates Jacksonville Craig Airport report, 210 fewer residents will be subject to disclosure requirements. Assuming 2.5 persons per household this equates to 84 fewer homes that will fall under the City's Part 10 disclosure requirements. The homes removed from the disclosure requirement would, based of the study, enjoy a three percent gain in value. The data provided by the two studies in conjunction with the Part 150 study suggest a positive economic impact to the City and no direct economic impact or a positive direct economic impact to the surrounding homes.

The JAA stated that safety as a result of the proposed extension will measurably increase safety as part of their proposal. The Department specifically asked Woodward and Associates "Will extension measurably increase the safety of planes during takeoff and landing?" The following is the consultant's response:

*A 2,000 foot runway extension (to the southeast) when combined with the use of 1,000 foot displaced thresholds on each end of runway 14/32 should result in a significant and measurable increase in safety. This added margin of safety will be achieved in the following manner:*

- 1. A substantial percentage of all general aviation accidents take place during take-offs and landings and result from pilot error by overshooting (or undershooting) the runway.*

- *National Transportation Safety Board (NTSB) statistics indicate that 65% of general aviation aircraft accidents take place in the takeoff or departure phase of flight.*
  - *Some industry experts have indicated that the incidences of accidents decrease as runway lengths increase. Departure accident rates drop approximately 25% when comparing runway lengths of 4,000 feet to 6,000 feet. An increase in runway length from 4,000 to 5,000 feet at Jacksonville Craig Airport should show a corresponding decrease in the incidences of accidents.*
2. *The margins of safety will be significantly enhanced both on the ground and in the air.*
- *Arriving aircraft will have an additional 1,000 feet of roll-out on the runway; that is especially advantageous during times when the pavement is wet.*
  - *Departing aircraft will have about 1,000 additional feet of pavement in case an aborted takeoff is necessary.*
  - *When a takeoff is aborted, or an engine fails after takeoff, a shorter (4,000 foot) runway means that there is a very good chance the aircraft will be landing (crashing) off the airfield. With additional takeoff distance, there is a better chance that some aircraft will be able to stop on the airfield. Access to a potential crash site should be easier and more importantly, off-airport neighborhood homes would be spared!*
  - *Upgraded signage, airfield marking, taxiway improvements and other infrastructure are being included with the extension plans to ensure future safe operations.*
3. *The proposed runway extension should result in an increased population of professional pilots. Jet aircraft insurers prefer longer runways. It is reported that some insurers require at least a 5,000 foot runway for their policyholders operating business jets. In this case, the runway extension will meet those requirements and attract some of the newer and quieter jets in the fleet. With these conditions and with the addition of Very Light Jets (VLJ) operations to the airport's aircraft mix in the future, more and more professional pilots will begin operating the area, further enhancing safety.*

The JAA also stated that noise will be measurably reduced by the proposed extension. The Department asked our consultant "Will the runway extension measurably serve to reduce noise over surrounding areas?" The following is the consultant's response:

*Both the near and future term noise exposure levels for areas surrounding Jacksonville Craig Airport were included in the Part 150 Study. Also included in the Part 150 Study were the noise implications of projects outlined in the Master Plan's capital improvement program, including the 2,000 foot extension of Runway 14/32 to the southeast. In the first five years, there were limited areas of significant noise exposure projected, so a longer term noise assessment was*

conducted to determine what opportunities were available to reduce future noise levels.

The FAA Terminal Area Forecast (TAF) 2020 forecast is 226,704 for Craig Airport and the JAA Master Plan forecast for the 60,000 lb. load limit scenario is 227,819. Since these forecasts are very similar, a scenario envisioning Runway 14-32 being extended as outlined in the Airport Master Plan, but restricted to aircraft weighing less than 60,000 lbs. was developed. Modeling of the 2020 Existing Airfield scenario allowed estimation and comparison of the long term noise exposure for the areas around Jacksonville Craig for both the existing runway length configuration and the extended runway configuration.

The Part 150 Study also evaluated the noise consequences of a number of Runway 14-32 scenarios. While runway extensions are not typically considered for noise purposes, extending a runway in conjunction with the use of displaced landing thresholds can mitigate noise exposure while also improving its operational characteristics. Runway extension or threshold relocation affects the areas surrounding an airport in the following ways:

- Extending to one end of a runway typically reduces noise off the opposite end of the runway by permitting aircraft to climb to higher altitudes before departing airport property airspace. Therefore, the aircraft are typically higher and less noisy over the surrounding off-airport property. If both ends of the runway are extended then areas off both ends of the runway receive the benefit of increased departure altitudes.

- Relocating runway landing thresholds toward the off-airport property generally increases the noise in that direction because aircraft will be lower as they arrive to the airport. On the other hand, relocating the thresholds away from that off-airport property reduces off-airport noise since aircraft will be higher as they fly over that area.

The Part 150 study explored different scenarios to determine which configurations had the greatest potential for long term noise relief to the surrounding communities. Based on these scenarios, it concluded:

- The southeasterly runway extension could reduce noise exposure levels in terms of levels of both area and population.

- The extended runway scenario (with displaced thresholds) also reduced the noise exposure to the northwest.

- The extended runway scenario (with displaced thresholds) allows aircraft departing on Runway 32 to reach a given altitude 2,000 feet sooner while aircraft landing on Runway 14 would descend at higher altitudes over the community and ultimately touch down 1,000 feet later. With this configuration, landings on Runway 32 would descend 1,000 feet earlier.

- All other scenarios analyzed either provided a reduced noise benefit or an increase in noise exposure to the area northwest of the airport.

- It was determined that of all the scenarios studied and analyzed the extended runway to the southeast with 1,000 foot displaced thresholds on each end provided the greatest potential reduction in noise exposure.

*The different long term noise exposure scenarios analyzed at Jacksonville Craig have a varying effect on the acreage of the noise contours as well as the number of residents affected. The 2020 noise contour (without the runway extension) creates the largest noise contour, both on and off airport property of any of the future scenarios analyzed. The increased acreage of this contour also impacts the greatest number of individuals. A comparison of the acreage in each contour interval both on and off airport property as well as the number of individuals can be found in Tables 14-4 and 14-5 from the JAA Part 150 Study that are included as Appendix 2.*

*Table 14-4 shows:*

- The total acreage within the 60 DNL will increase by 26 percent from 992 acres to 1267 acres by the year 2020. Off airport areas within this same time range is projected to increase 70 percent from 237 acres to 402 acres.*
- Off-airport area within FAA's defined level of significant noise exposure, the 65 DNL contour, will increase 189 percent from 13.8 acres to 39.9 acres.*
- The runway extension to the southeast scenario reduces the off airport area exposed under these contour limits to 9.4 acres even with increased activity levels and greater use of Runway 14-32. This represents a 31 percent reduction from the year 2004 levels.*

*Table 14-5, shows:*

- The population within the 60 DNL contour is projected to nearly triple between years 2004 and 2020 and the people within the 65 DNL contour will increase from 5 to 33.*
- The runway extension to the southeast scenario reduces the population level within the year 2020 60 DNL contour by nearly 20 percent and by 100 percent within the 65 DNL contour.*

*The Part 150 study concludes that a southeasterly extension to Runway 14-32 would reduce long term noise exposure. In the interim, reductions in noise would also be provided in areas beyond the noise threshold levels that the FAA deems as significant (the 65 DNL contour). A runway extension would also be a means to reduce noise exposure within the 60-65 DNL range in the nearer term as well as long term.*

*Based upon all the evidence included in the Part 150 study and Airport Master Plan, the southeasterly 2,000 foot runway extension, coupled with 1,000 foot displaced thresholds on each end of runway 14-32 would serve to measurably reduce noise over the surrounding areas both in the near and long terms. It also would have the greatest impact in reducing noise over the area northwest of the airport (Holly Oaks area.) The proposed runway extension should provide significant reduced take-off noise over the Holly Oaks community. This is a positive benefit without increasing noise over other neighborhoods.*

The relationship between noise and aircraft weight is somewhat counter-intuitive. In the Woodward and Associates Supplementary Report, Table 1 Take Off Gross Weight and Table 2 Maximum Landing Weight illustrate this counter-intuitive relationship. The tables show the lightest weight class creates the lowest average dBA. The next weight class 12,500 - 30,000lbs is louder; however, the next weight class 30,000 – 60,000lbs is actually 1 dBA quieter than the preceding lighter weight class. The heaviest weight class, 60,000 - 70,000lbs, is quieter than the 12,500 – 30,000lbs weight class at take off gross weight; but, it is louder than the 12,500 – 30,000lbs weight class at maximum landing weight. The conclusion is that aircraft in the 30,000 – 60,000lbs category do not create a larger noise nuisance than 12,500 – 30,000lbs aircraft.

*According to Woodward and Associates “Extending the runway should not increase the total number of flights. Airport capacity will not be increased as a result of the extension. The primary impact would probably be that some of the larger jets now using the airport could continue to do so but with less weight restrictions. It is impossible to say whether the extension would attract jets currently capable of using the airport but choosing not to do so because of its shorter runways. However, there may be some that do. In perspective, an increase to the number of jets based at the airport and jet operations have been forecasted and included in both the Part 150 study and the master plan update.”*

Part 10 of the Zoning Code also serves to protect schools. There exists a site approximately one mile south of Atlantic Blvd on Kernan that is minimally impacted by the School Regulatory Zone as defined by Part 10 of the Zoning Code. The proposed extension does not increase the area impacted by the School Regulatory Zone.

As stated in the beginning of this section the Department will use the following criteria upon which to base its recommendation: the proposal’s consistency with all applicable plans, the proposal’s economic impact, the proposal’s impact to safety, and the proposal’s noise impact. The proposed text amendment is consistent with the JAA’s Master Plan, the JAA’s Part 150 study, and the City of Jacksonville’s Comprehensive Plan. The data suggests that a positive economic impact will be generated by the proposed extension, with a positive direct economic impact to homes that will no longer be subject to the City’s Part 10 disclosure requirements. The proposal will measurably improve safety at Craig Airport. Finally, the proposal will reduce long term noise exposure. All of the criteria indicate that this proposal should be recommended for approval; therefore, The Planning and Development Department of the City of Jacksonville recommends approval of the text amendment as substituted by the Department subject to the following conditions:

1. The Planning and Development Department, based off data provided in the annual monitoring report that indicate current noise contours are being exceeded, may direct the JAA to conduct a Part 161 Study (Notice and

Approval of Airport Noise and Access Restrictions) to limit noise and/or operational access in a manner that maintains the noise contours as given in the May 22, 2007 FAA approved Part 150 Study.

2. The City amends the Part 10 Noise Disclosure Boundary surrounding Craig Airport to reflect changes to the noise contours.