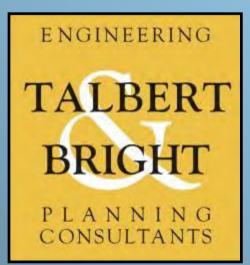
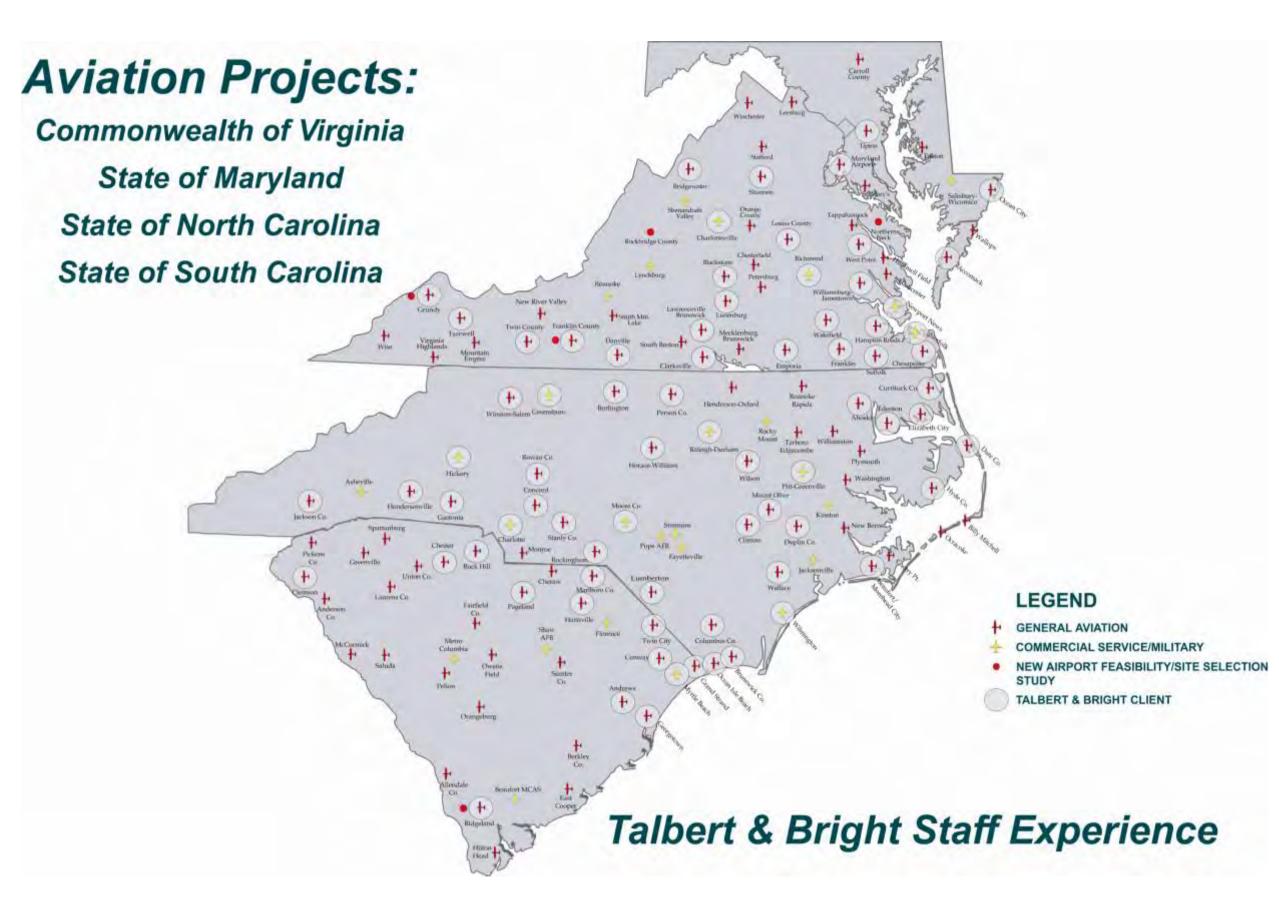
## **UNC Chapel Hill**

## Presentation to Board Of Trustees

## May 26, 2005



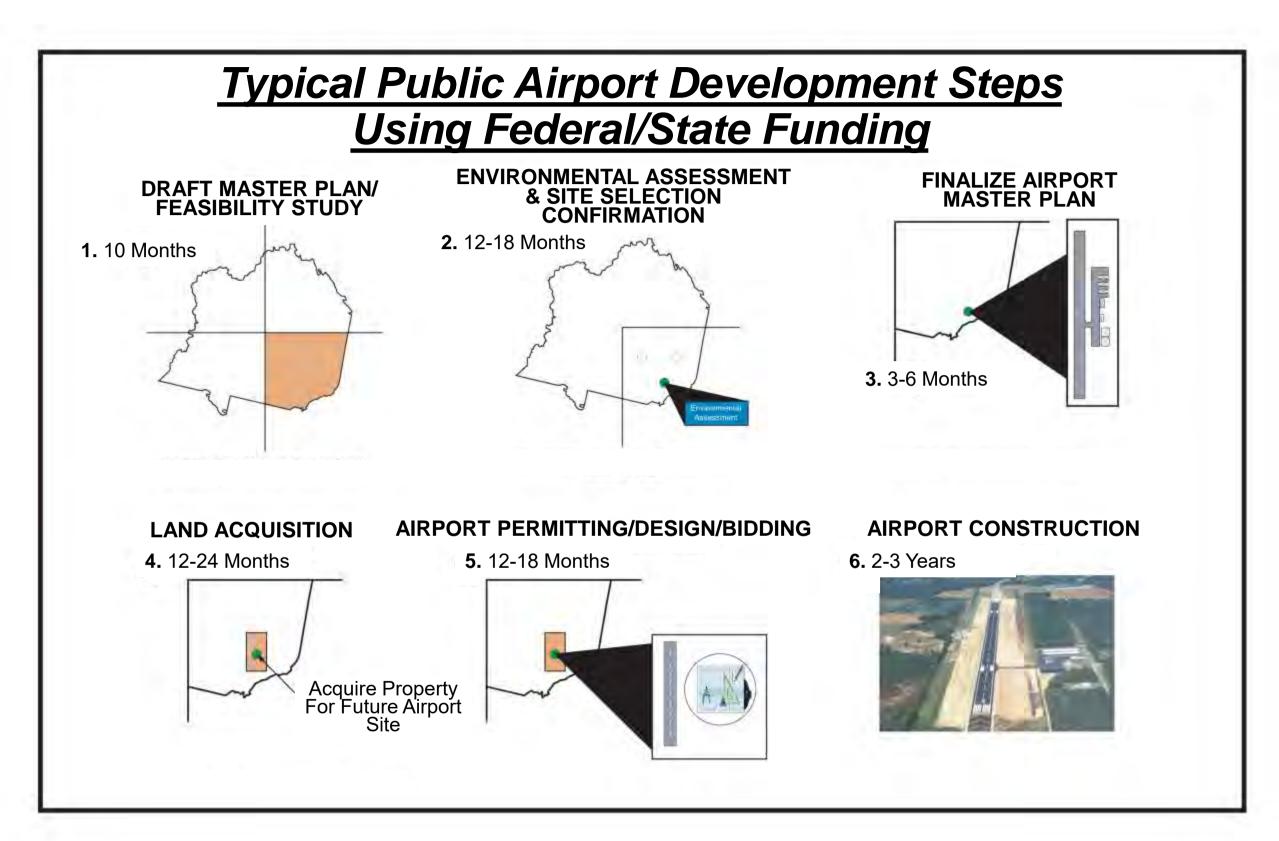


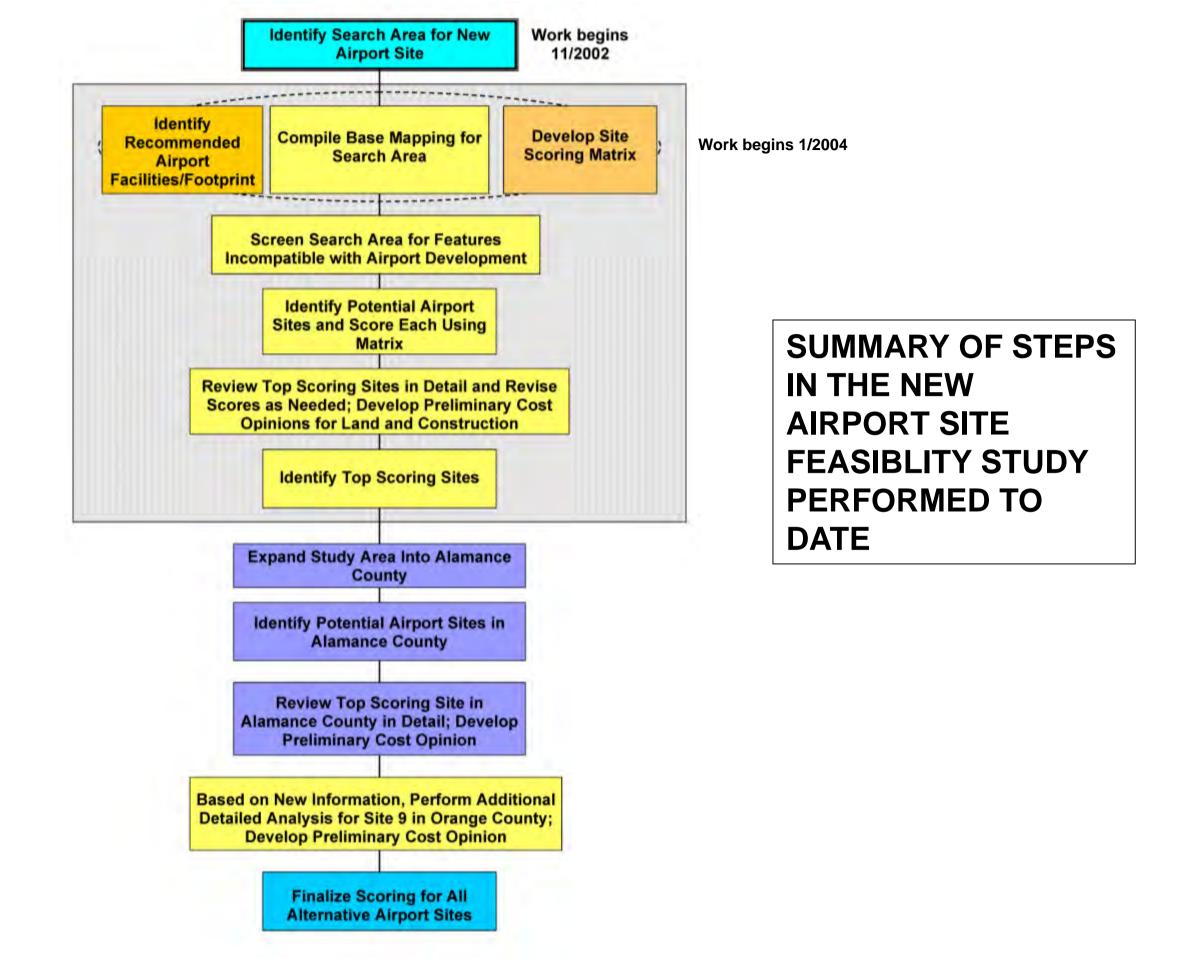


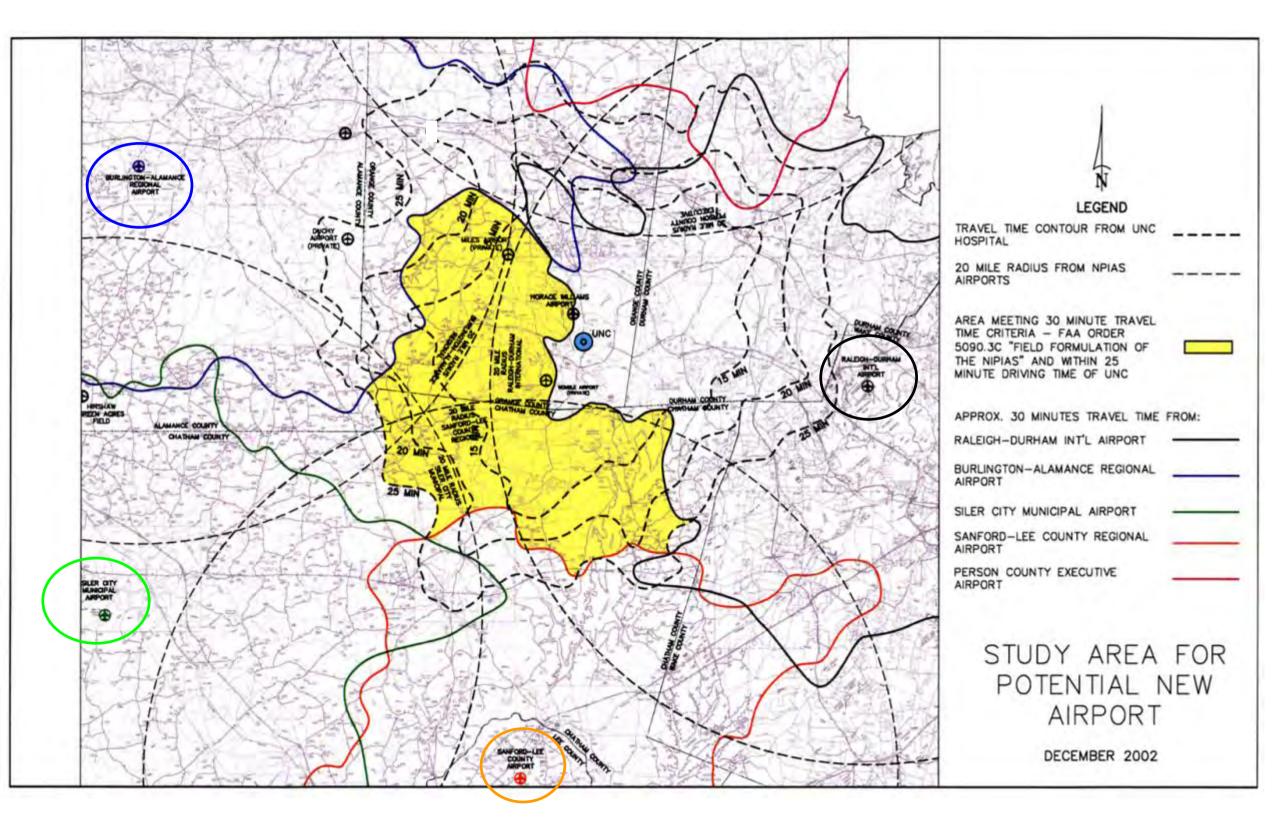
# **TBI Tasks**

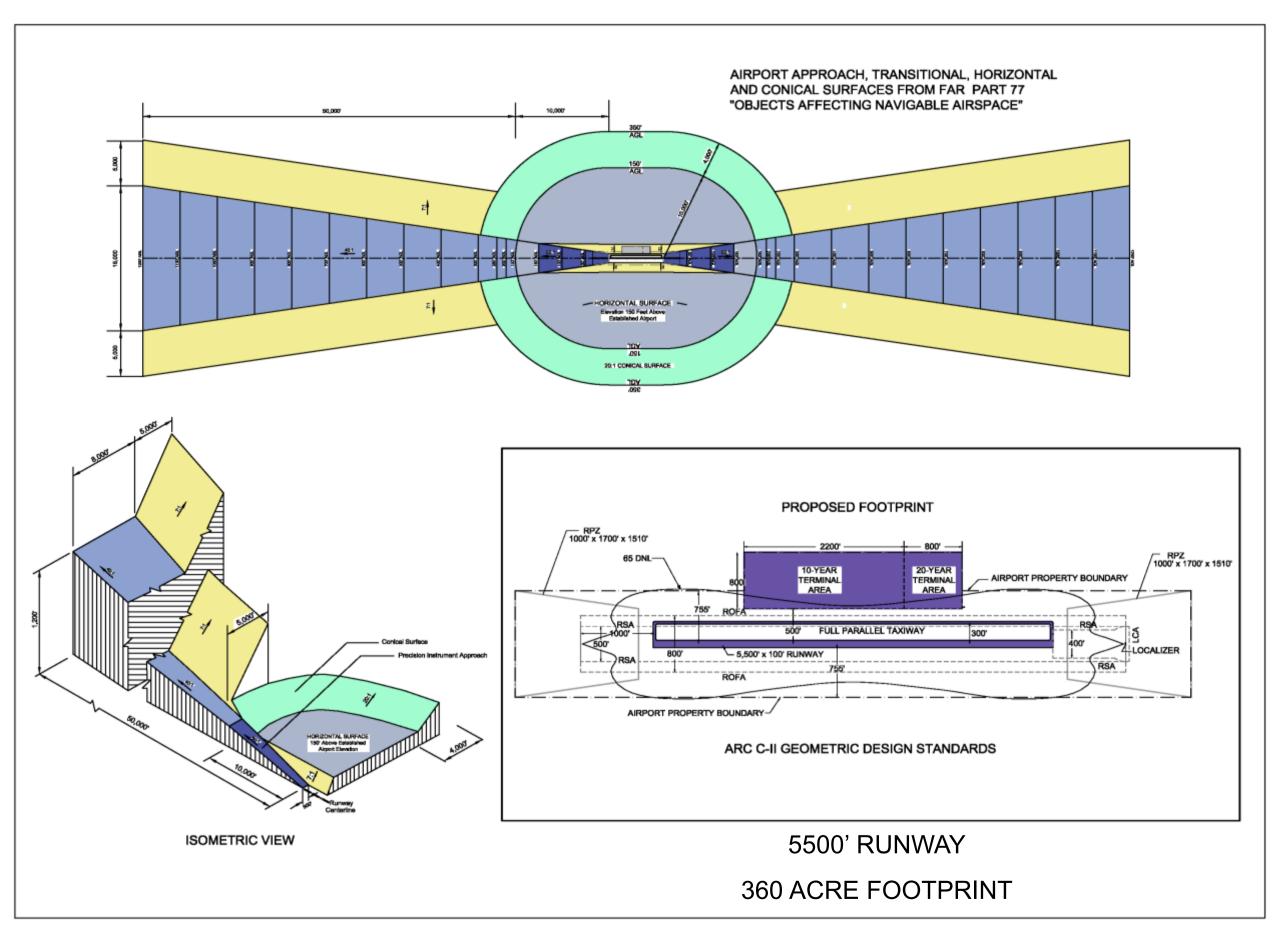
- Identify Potential Replacement Airport Site
- Review 2000 Horace Williams
   Development Plan Encroachments on Horace Williams Airport
- Review Travel Time/Cost Increases if MedAir Operations Relocated to RDU

# Identify Potential Replacement Airport Site

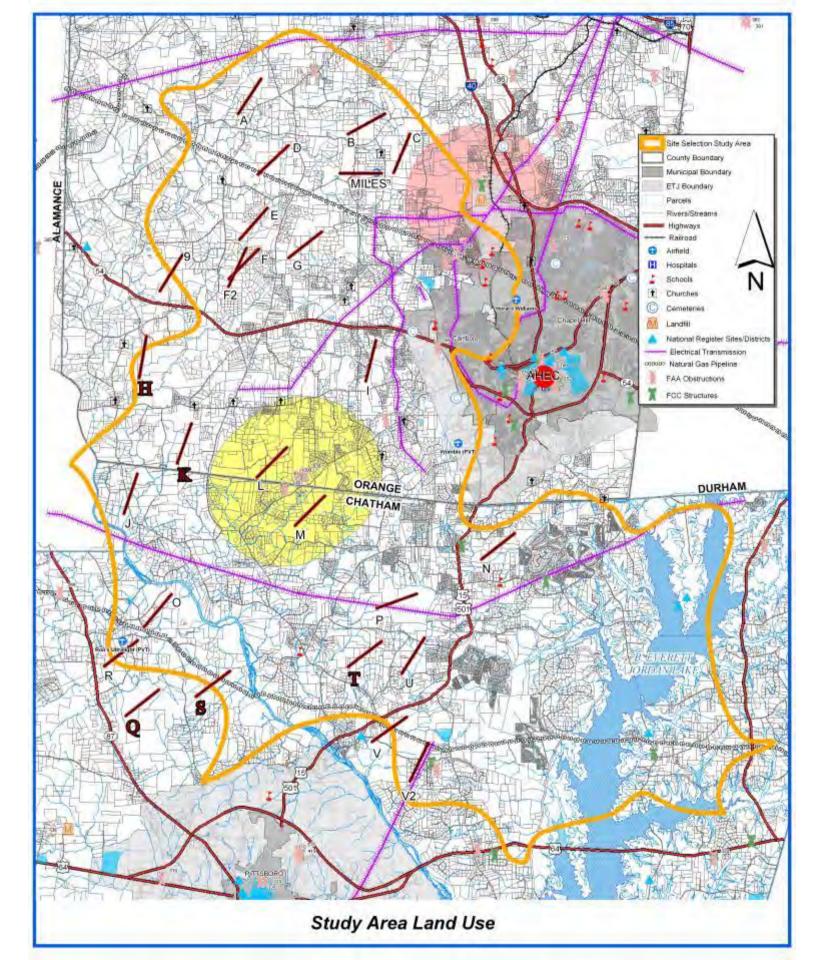




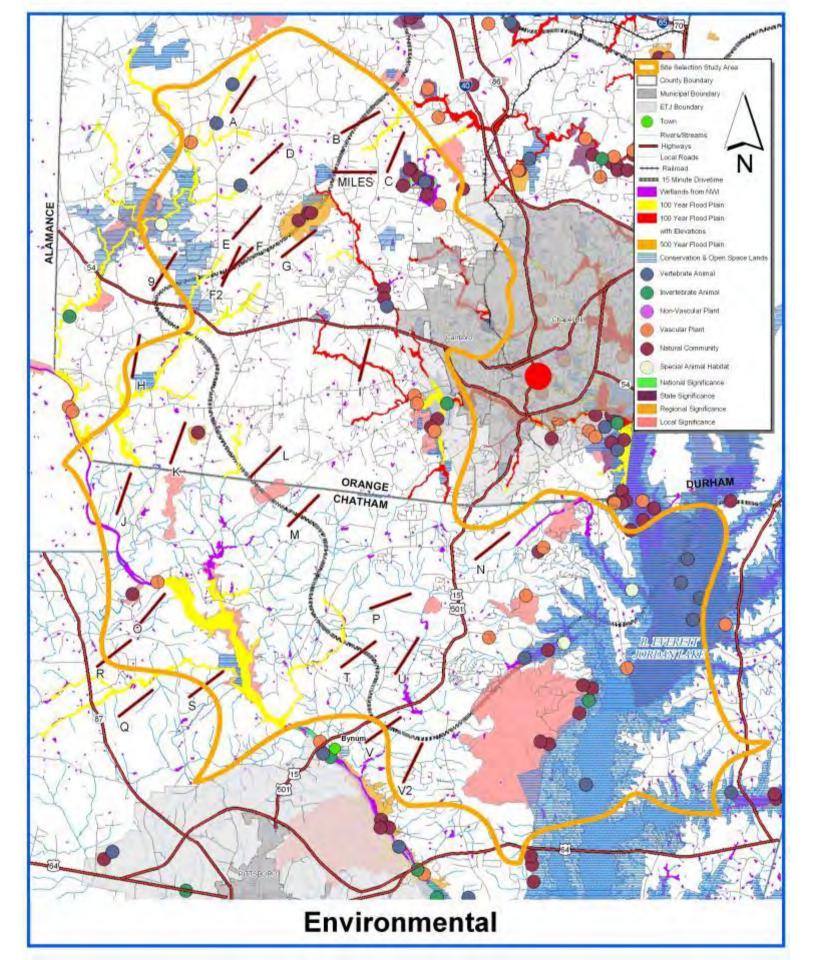




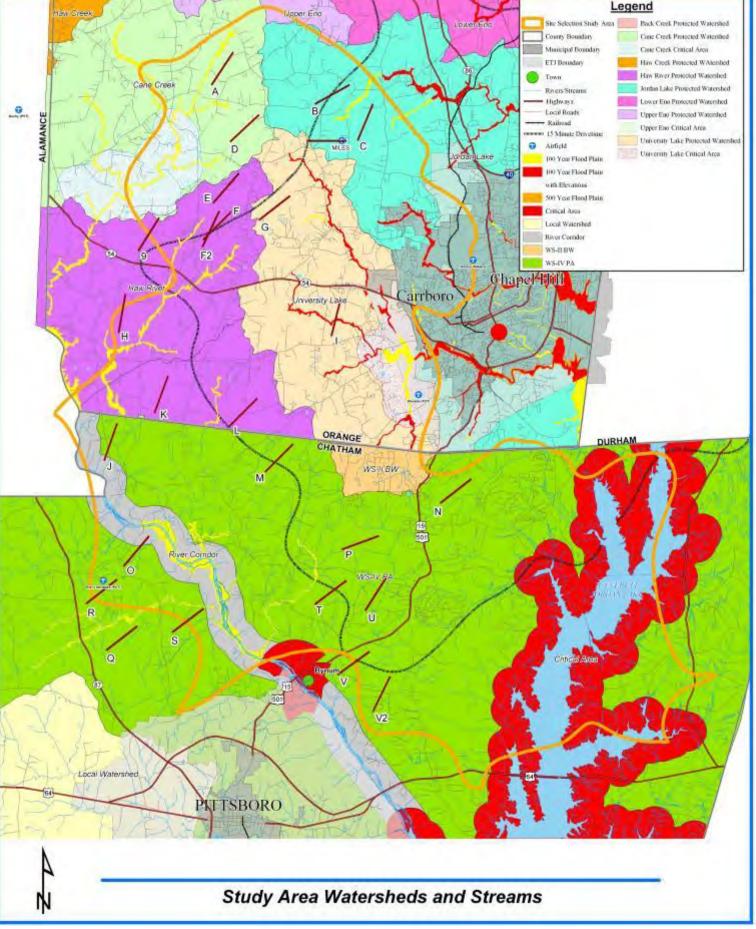










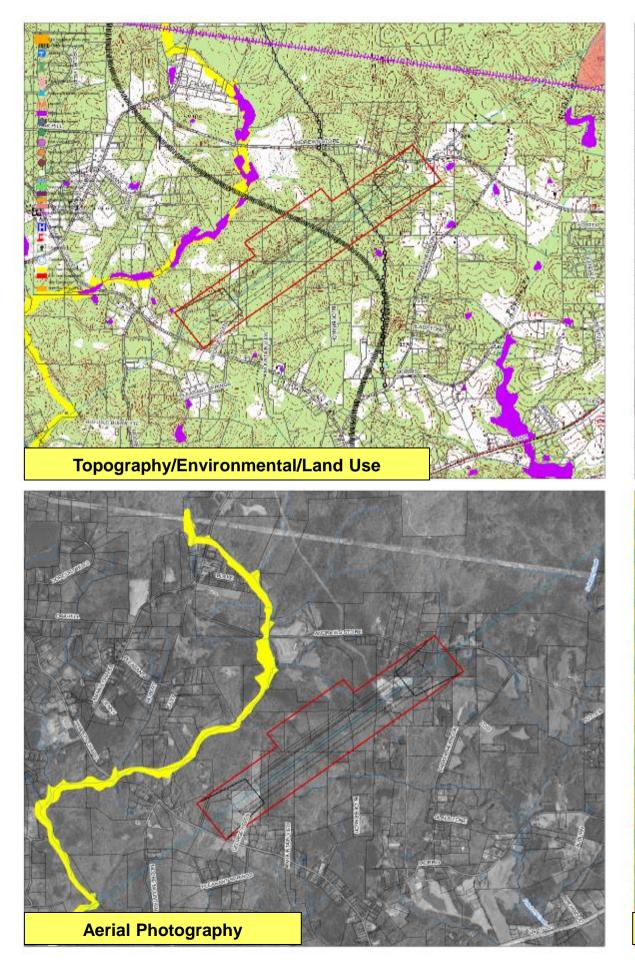


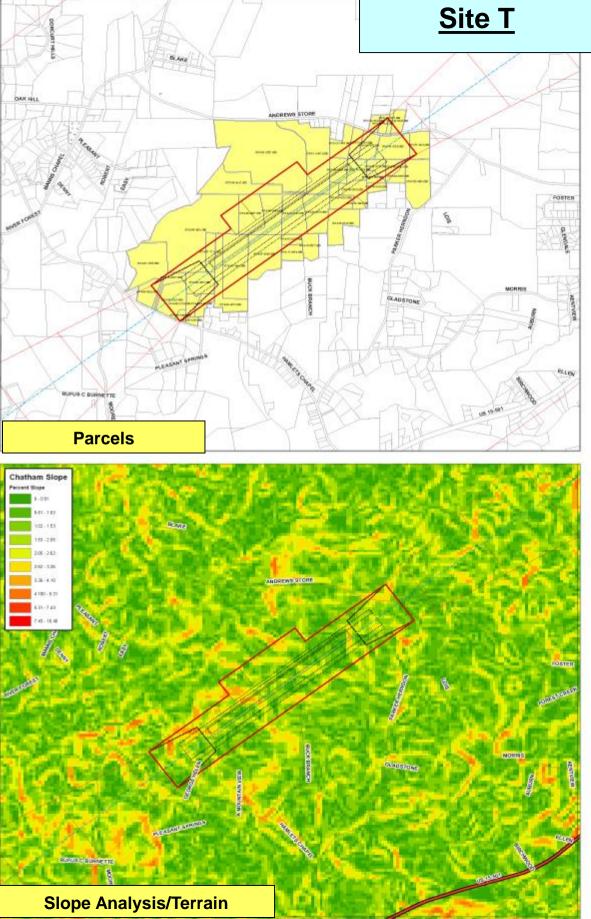
## MATRIX FOR SCORING SITES

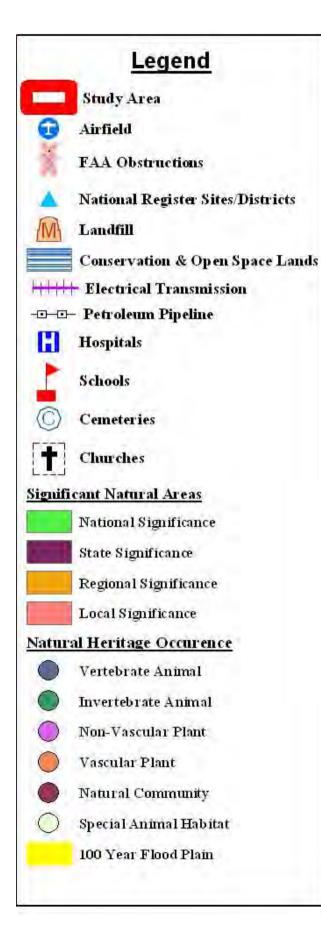
	Major Site Factors	Impact Factor <b>0</b>	Weighting Factor ❷	Total Score	
A1	Site is within 25 minutes drive of UNC Hospital		2		
A2	Site is 30 minutes or more from adjacent NPIAS airports		2		
A3	Site is within 0-15 Minutes of UNC Hospital		2		
в	Zoning allows airport development with no variance/special approval		4		
с	Airspace Compatibility – Close-In Terminal Airspace Obstructions, Adjacent Airport Airspace Conflicts		4		
D	Social Impacts - Existing and Future Land Use, Roadways		3		
E	Environmental Impacts (Wetlands, Streams, Rare Species, Floodplains, Historical/Archeological, Farmlands)		3		
F	Parcel Size/Contiguity; Ability to Accommodate Recommended Airport Facilities		2		
G	Runway Orientation within Wind Coverage Tolerance		2		
н	Site Development Considerations - Terrain, Utility Relocation/ Access, Soils, Drainage		1		
I	Site Could Accommodate Future Expansion		1		
		TOTAL	SCORE		
<ul> <li>● Impact Factor         <ol> <li>Significant Impact/Does Not Meet Criteria</li> <li>Some Impact/Partially Meets Criteria</li> <li>No Adverse Impact/Favorably Meets Criteria</li> <li>POSSIBLE =</li> </ol> </li> <li>● Weighting Factors</li> <li>● Total Potential Site Score = ● Impact Factor * ●Weighting Factor</li> </ul>					

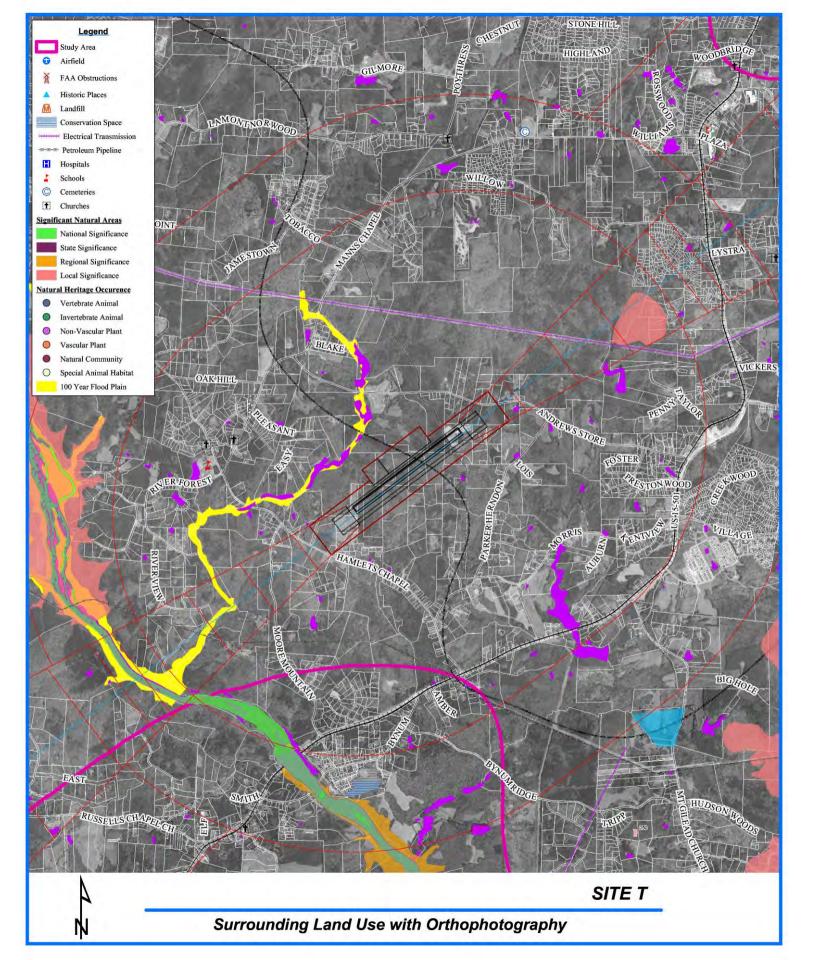
## **Score Potential Airport Sites**

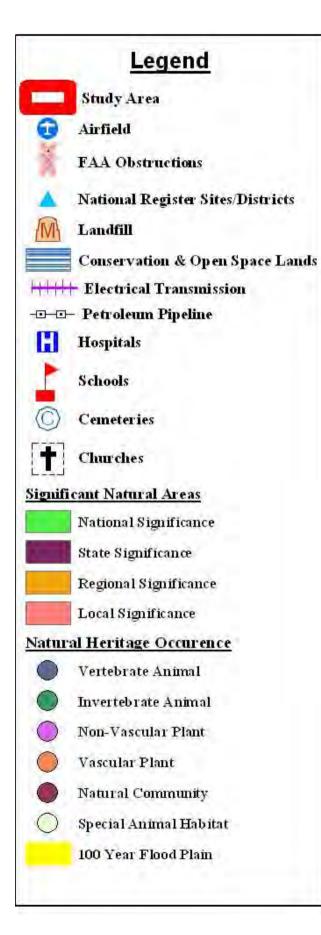
The following is a summary of site factors used to score the potential airport sites. The weighting actors for each site factor were confirmed based on discussions with University staff.	E. Environmental Impacts - Weighting Factor: 3
SITE SCORING CRITERIA	3 = Site has no/minor impacts to wetlands, site has no/minor intermittent stream crossings, site has no impacts to other environmental resources**
the second se	2 = Site has some combination of minor impacts to wetlands and multiple short intermittent stream
1. Site is within 25 minutes of UNC Hospital - Weighting Factor: 2	crossings, or has one or two perpendicular crossings of a perennial stream 1 =Site has significant stream or wetland impacts, and/or would require clearing trees from a
3 = Site is within 25 minutes drive time of UNC Hospital 2 = Site straddles border of 25 minute drive time	Significant Natural Area, and/or drains to a Critical Watershed
2 - Site silaudies bolder of 23 fillingte drive line	**Other environmental resources reviewed include National Register sites proximity to Significant
<ol> <li>Site is 30 minutes or more from adjacent NPIAS airport – Weighting Factor: 2.</li> </ol>	Natural Areas, floodplains, critical watersheds, and federal and state rare species.
3 = Site is 30 minutes or more drive time from adjacent NPIAS airports	F. Parcel Contiguity/Ability to Accommodate Recommended Airport Facilities - Weighting Factor
1 = Site is less then 30 minutes drive time from adjacent NPIAS airports	3 = Site consists primarily of large, vacant or sparsely developed tracts (typically 10 or fewer land
3. Site Within 15 Minutes of UNC Hospital - Weighting Factor: 2	owners) and can accommodate recommended airport geometry 2 = Site has a mix of large and small tracts (typically 10 to 25 landowners) but can accommodate
3 = Site is within 15 minutes drive time of UNC Hospital	recommended airport geometry
2 = Site straddles border of 15 minute drive time	1 = Site has more than 25 land owners and/or cannot accommodate airport geometry without substantial impacts
Zoning allows airport development with no variance/special approval - Weighting Factor: 4	G. Wind Coverage - Weighting Factor 2
3 = Site is located in area with no zoning	
1 = Variance or special approval needed to construct airport	3 = Site accommodates runway orientation with 97% or greater wind coverage (2-20 to 7-25) 2 = Site accommodates runway orientation >=96% and <97% wind coverage (1-19 and 8-26) 1 = Site accommodates runway orientation >=95% and <96% wind coverage (9-27 and 18-36)
. Aeronautical - Weighting Factor: 4	
3 =Site appears to have no terrain, tower, or electrical transmission line obstructions to FAR Part	H. Site Development Considerations - Weighting Factor 1
77 surfaces or 34:1 approach surfaces 2 = Site appears to have no terrain, tower, electrical transmission line, or unmitigatable tree	3 = Site is relatively flat and does not require relocation of roads or electrical transmission lines;
obstructions to 34:1 approach surfaces, but has minor violations to FAR Part 77 surfaces that	significant terminal area access road construction not needed 2 = Development of site would require a minor road relocation and/or moderate grading and/or termin
cannot reasonably be mitigated 1 =Site has terrain, tower, or electrical transmission line obstructions to 34.1 approach surfaces	area access road construction
and/or significant violations to FAR Part 77 surfaces	1 =Development of site would require a significant road relocation, relocation of an electrical transmission line, and/or construction of major drainage structures for stream crossing(s), site has
one of the sites are known to interfere with the airspace of existing public airports, but an aeronautical study	more than 100° of elevation change across length of site; site crossed by natural gas pipeline
f candidate sites by the FAA would be needed to make final determinations. Potential conflicts with private	I. Site Could Accommodate Future Expansion - Weighting Factor 1
rport airspace would need to be evaluated on a case-by-case basis.	
. Social Impacts - Weighting Factor: 3.	3 =Site could accommodate 500' to 1000' runway extension, expansion of terminal area, and has no obvious impediments to Cat 1 precision approach
3 =Site requires minimal relocations of residents (typically fewer than 10 homes); no churches or schools nearby; surrounding area is relatively undeveloped	2 = Site could accommodate runway extension or terminal area expansion, but not both 1 = Future expansion cannot be accommodated without substantial impacts/cost
<ul> <li>2 = Site would require more than 10 relocations; site is near a church or school</li> <li>7 = Site has a significant number of relocations; site is within a mile of densely developed areas; site has numerous churches and/or schools nearby</li> </ul>	

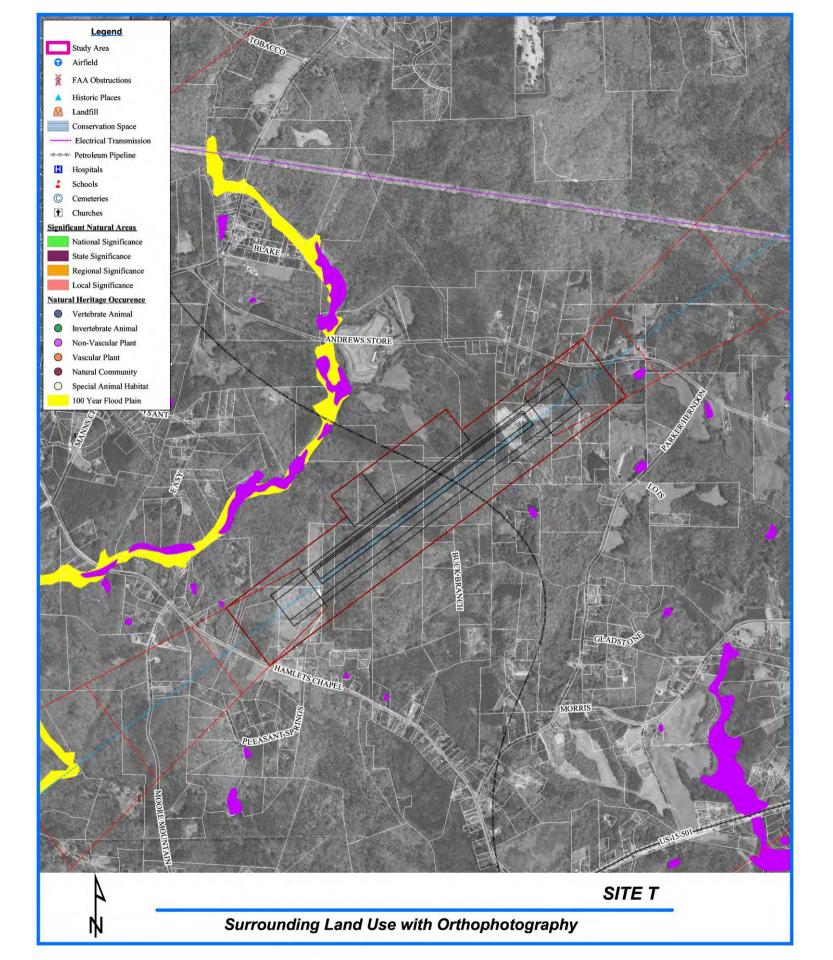


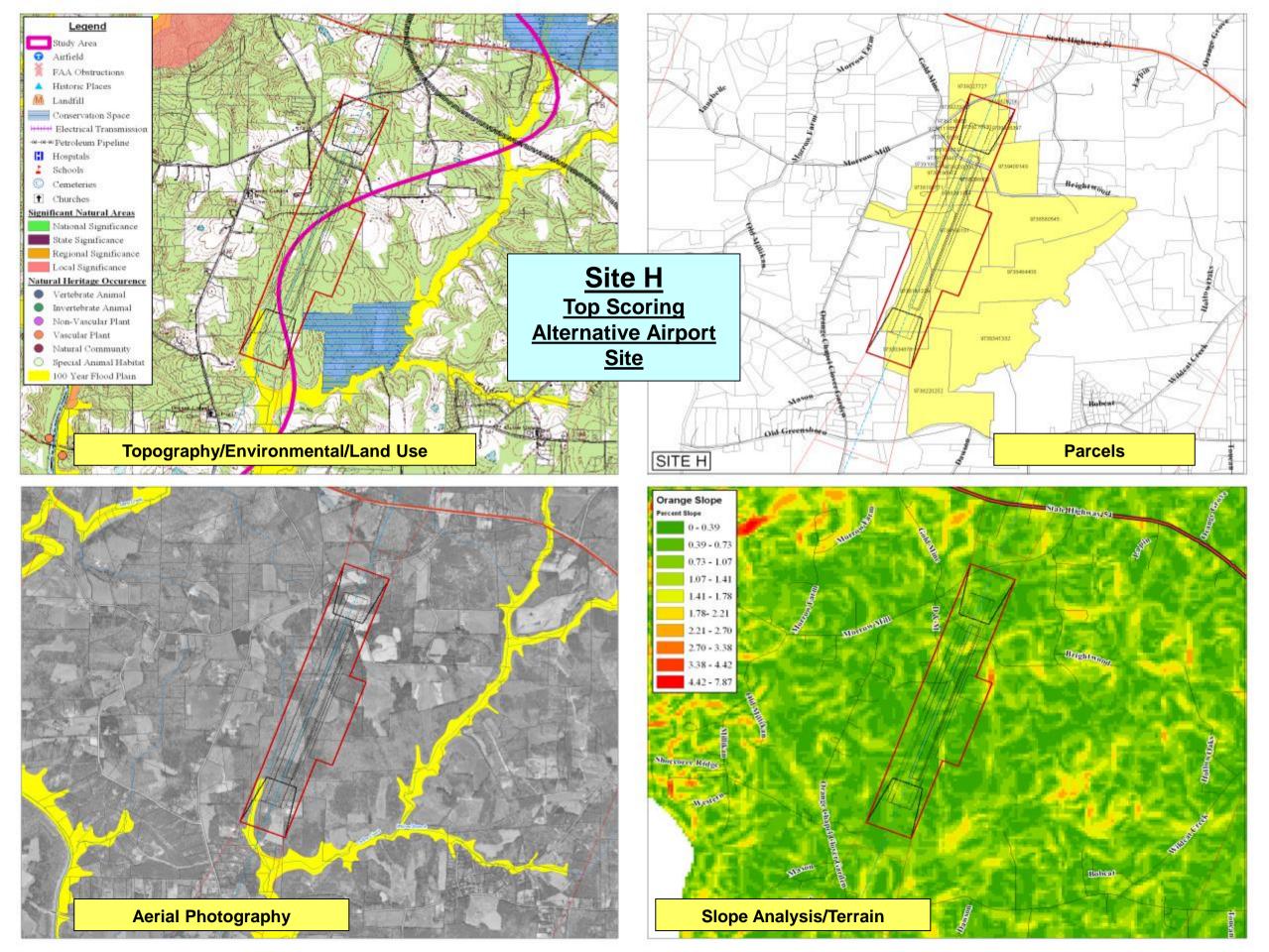


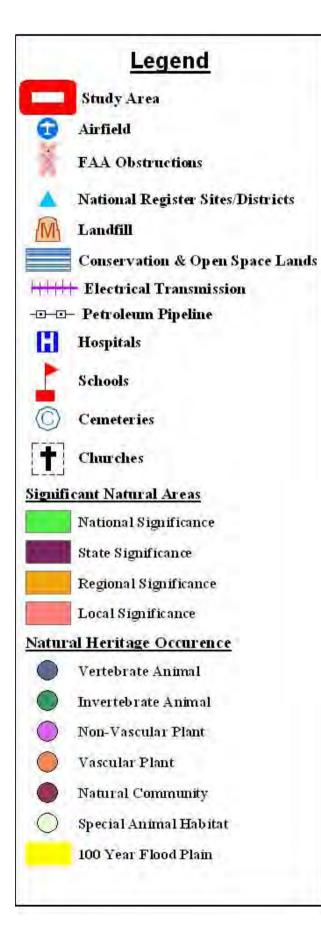


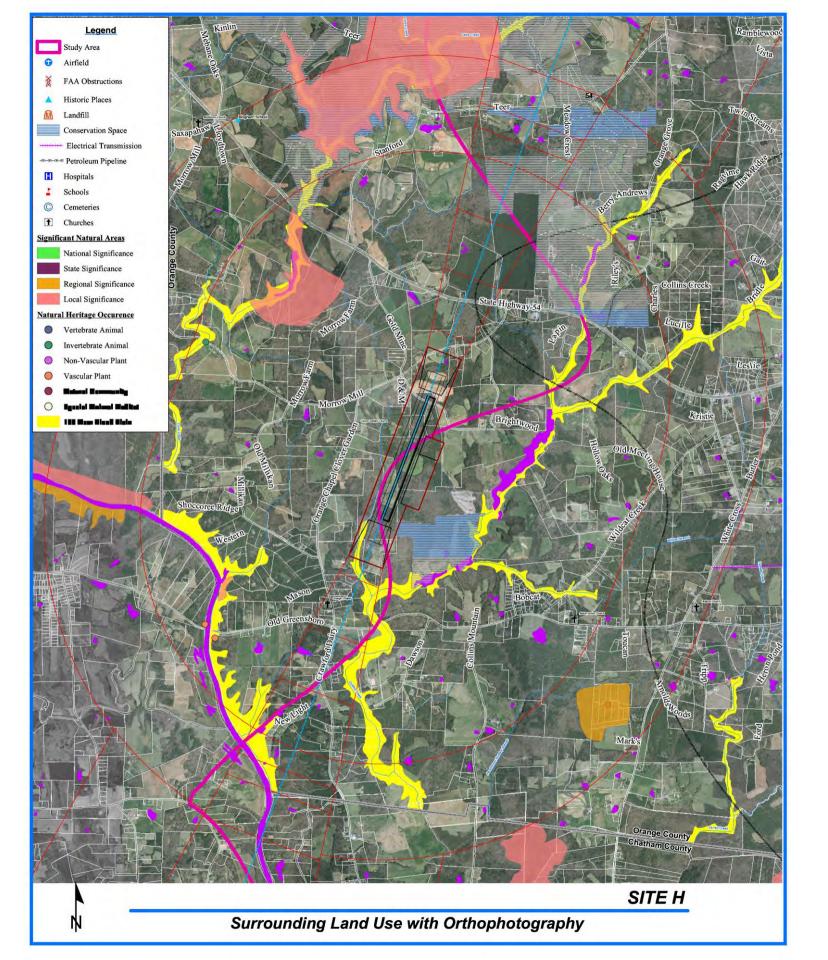


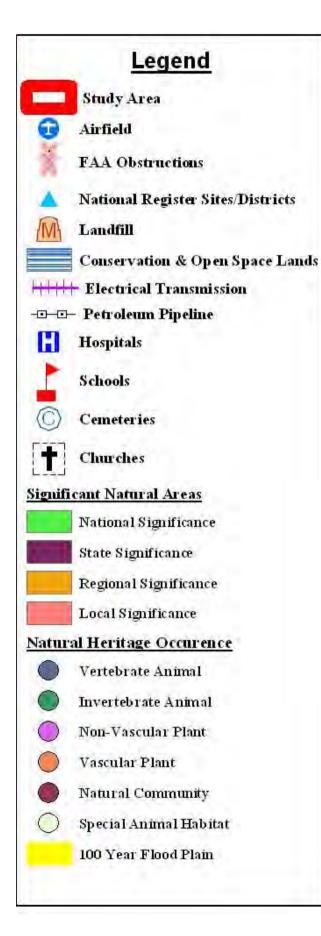


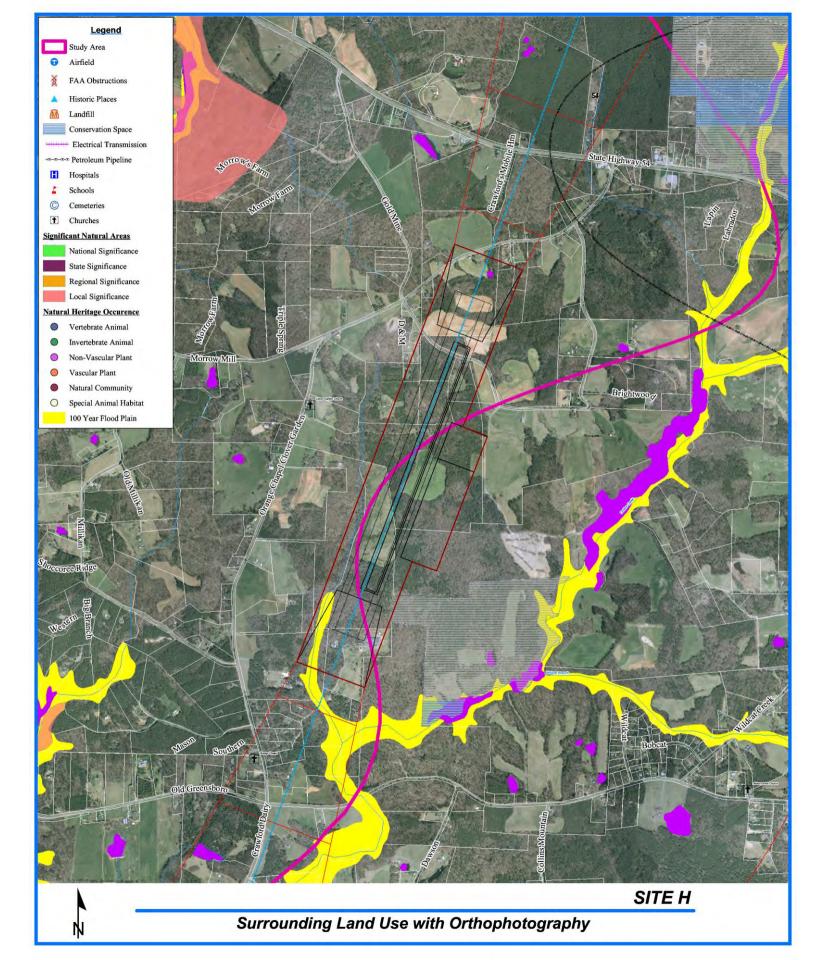


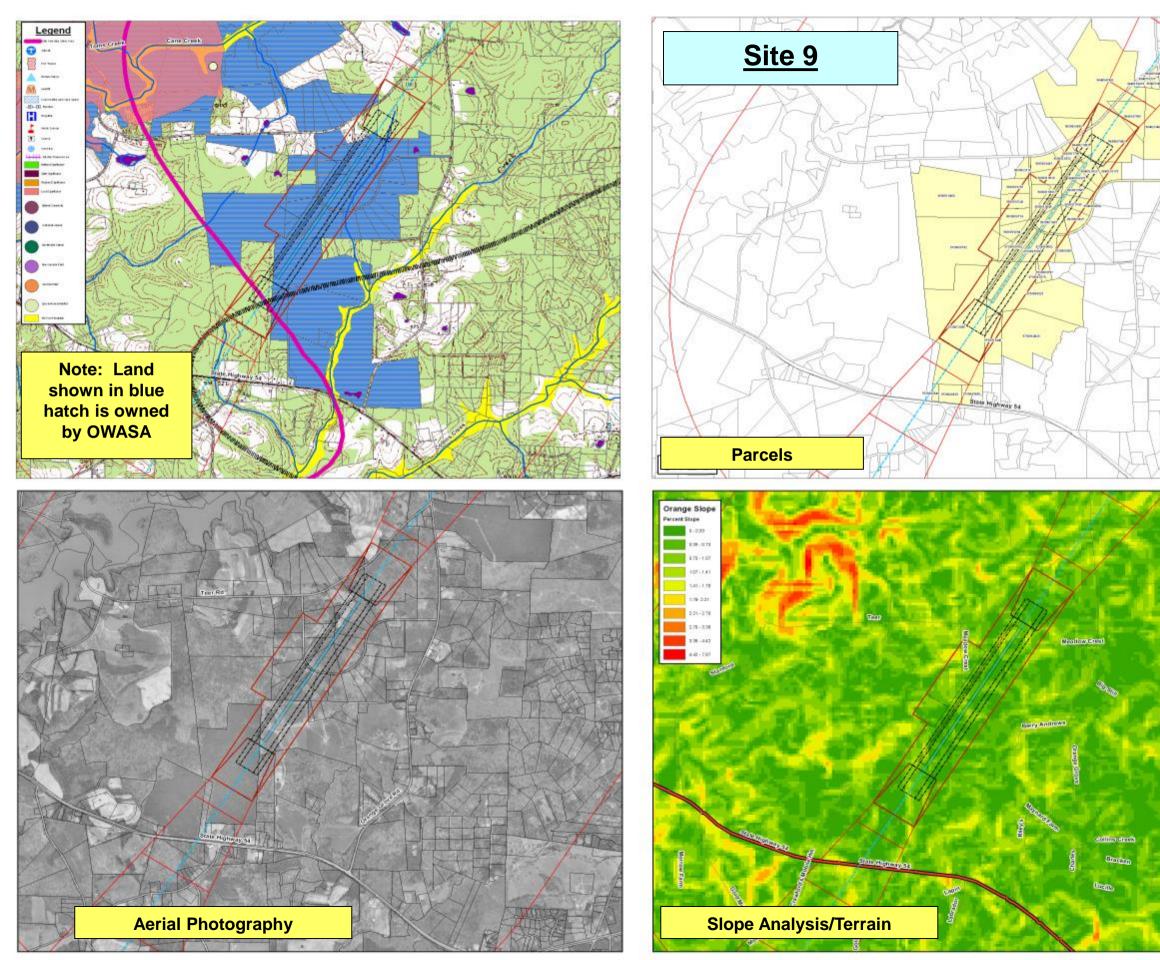












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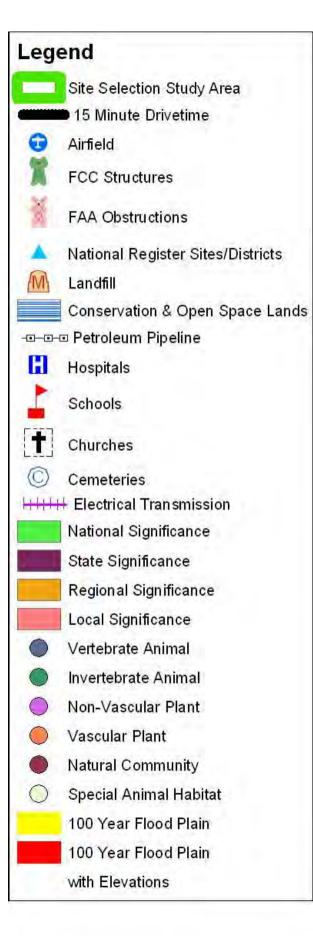
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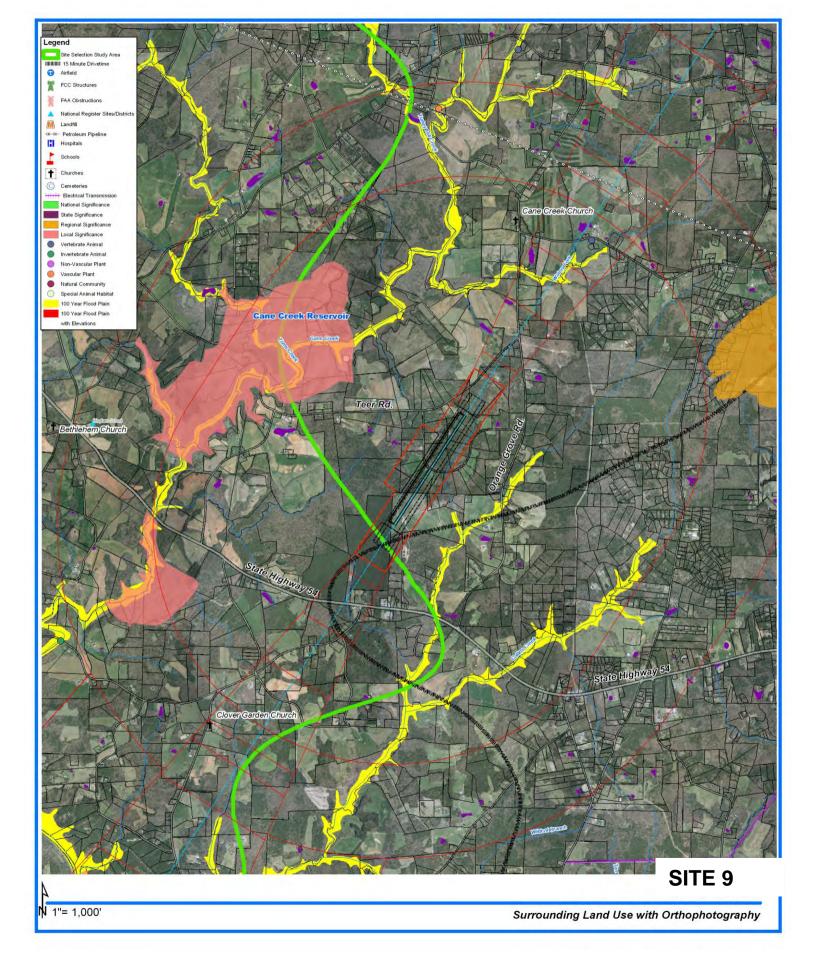
REALING

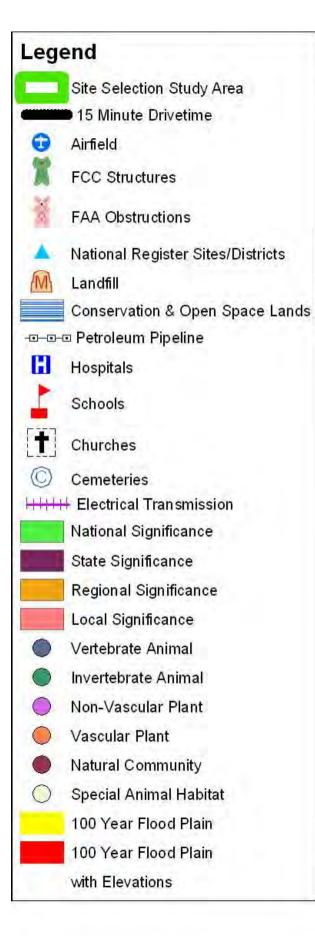
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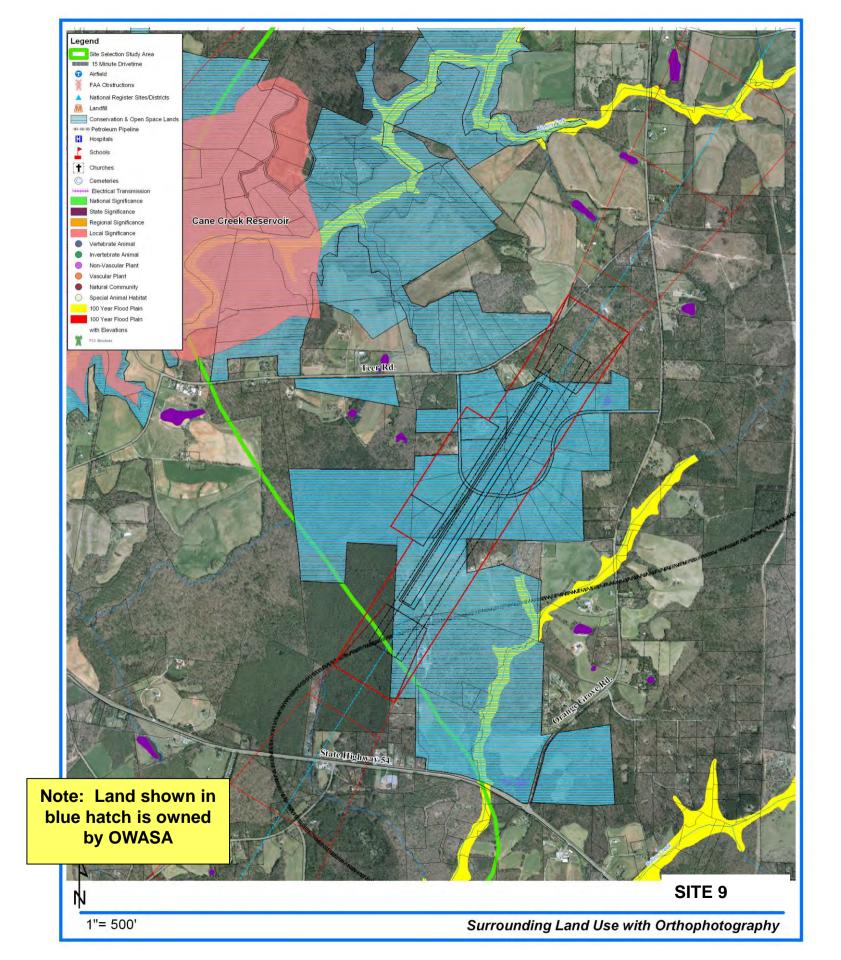
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## **SUMMARY COMPARISON OF SITES H AND 9**

#### **March 2005**

		SITE H				SITE 9			
August was been a	Weighting	Impact Factor			Impact Factor	Total Score			
Major Site Factors	Factor A	B	C	Comments	( <b>B</b> ), *	ę.	Comments		
Site is within 25 minutes drive time of UNC Hospital	2	3	6	Site is approximately 11 miles west of UNC just off Highway 54.	3	6	Site is approximately 11 miles west of UNC just off Highway 54.		
Site is more 30 minutes or more from NPIAS airports	2	3	6	Site is just outside 30 minute travel time from Burlington-Alamance Regional Airport	3	6	Site is just outside 30 minute travel time from Burlington-Alamance Regional Airport		
Site is within 0-15 Minutes of UNC Hospital	2	2	4	Site straddles 15 minute drive time line; awarded partial bonus	2	4	Site straddles 15 minute drive time line; awarded partial bonus		
Zoning allows airport development with no variance/special approval	4	1	4	Site is in Orange County, which is zoned in its entirety. Site zoning is "AR", which allows airports only with "Class A Special Use" permit approval.	1	4	Site is in Orange County, which is zoned in its entirety. Site zoning is "AR", which allows airports only with "Class A Special Use" permit approval.		
Airspace Compatibility – Close-In Terminal Airspace Obstructions, Adjacent Airport Airspace Conflicts, Landfills	4	3	12	Preliminary airspace review indicates no approach obstructions, such as towers, terrain or tree penetrations of Part 77 surfaces.	2	8	Preliminary review of potential airspace constraints indicates that trees located on several peaks northwest of the site and adjacent to the Cane Creek Reservoir could penetrate the Part 77 horizontal surface, depending on their height. The trees are on land owned by OWASA that is within the Cane Creek Critical Area, the trees are also on land identified as a Significant Natural Area. Based on discussions with OWASA, it could be very difficult to mitigate tree obstructions in these locations. For this reason, a moderate score was assigned in this category. Wildlife hazard issues associated with continued treatment of bio-solids on adjacent land is unknown.		
Social Impacts - Existing and Future Land Use, Roadways	3	2	6	Site is not near any densely developed areas, surrounding area is rural with scattered residential development. Church located within <1/2 mile of site, impacts to business, and unknown noise impacts to UNC-CH animal research facility led to moderate score in this category.	2	6	Site is not near any densely developed areas; surrounding area is rural with scattered residential development. Church located within 1 mile of site, possible noise-sensitive business located to southwest, and unknown social impacts from relocation of biosolids facilities led to moderate score in this category.		
Environmental Impacts (Wetlands, Streams, Rare Species, Floodplains, Historical/Archeological, Farmlands)	3	2	6	Possible intermittent stream impacts from terminal area development and proximity to conservation land led to moderate score in this category.	ă.	3	Approx. 4000' of stream impacts. Largest potential impact is the need to relocate 260 acres of biosolids treatment to another site or sites, and potential controversy from the taking of OWASA land.		
Parcel Size/Contiguity, Ability to Accommodate Recommended Airport Facilities	2	2	4	Penalty for closure of part of Gold Mine road (partially paved loop road serving residences impacted by airport construction) and number of parcels (25).	2.5	5	Approximately 1/2 of site is under single ownership (OWASA); however, numerous additional parcels (20) are impacted leading to a slight reduction in the score.		
Runway Orientation within Wind Coverage Tolerance	2	3	6	2-20 orientation => +97% wind coverage	3	6	3-21 orientation => +97% wind coverage		
Site Development Considerations - Terrain, Utility Relocation/Access, Soils, Drainage	1	3	3	Site has favorable terrain, no stream crossings, no relocation of major utilities.	2	2	Site has favorable terrain; however, unknown impacts of biosolids-treated solls on construction and unknown impacts on bio-solids treatment infrastructure led to reduction in score.		
Could Accommodate Future Expansion	1	3	3	Could extend runway 1000' to south and expand terminal area in future	3	3	Could extend runway 1000' to south and expand terminal area in future.		
TOTAL SCORE			60			53	1 / X X / / .		
Estimated Land Acquisition/Relocation B Estimated Initial Construction Budge Estimated Total Initial Budget (see n	ət	÷		\$7,883,700 \$22,649,000 <b>\$30,532,700</b>			\$7,625,400 \$28,349,000 <b>\$35,974,400</b>		

#### B Impact Factor

1 Significant Adverse Impact/Does Not Meet Criteria

2. Some Impact/Marginally Meets Criteria

3 No Adverse Impact/Favorably Meets Criteria

A Weighting Factors

C Total Score = 8 Impact Factor \* A Weighting Factor

Budgets are preliminary and intended for relative comparison only. To date, no on-site information (such as soil conditions) is available. Initial construction budget opinions include acquisition of land needed for 20-year development (C-II standards, 5500' x100' runway, 55 acre terminal area, full parallel taxiway, and precision 3/4 mile approaches to each end of runway), grading for 20-year terminal area, construction of 5000'x100' runway, 5000' parallel taxiway, and apron/hangars/terminal/parking for projected 5-year demand, initial pavement strength of 30,000# DWG, non-precision approach to north end of runway, precision 3/4 mile approach to south end of runway, glide slope, localizer, fuel farm, access road and drainage.

		SITE H		SITE 9		
Major Site Factors	Weighting Factor A	Impact Factor B	Total Score C	Impact Factor B	Total Score C	
Site is within 25 minutes drive time of UNC Hospital	2	3	6	3	6	
Site is more 30 minutes or more from NPIAS airports	2	3	6	3	6	
Site is within 0-15 Minutes of UNC Hospital	2	2	4	2	4	
Zoning allows airport development with no variance/special approval	4	1	4	1	4	
Airspace Compatibility – Close-In Terminal Airspace Obstructions, Adjacent Airport Airspace Conflicts, Landfills	4	3	12	2	8	
Social Impacts - Existing and Future Land Use, Roadways	3	2	6	2	6	
Environmental Impacts (Wetlands, Streams, Rare Species, Floodplains, Historical/Archeological, Farmlands)	3	2	6	1	3	
Parcel Size/Contiguity; Ability to Accommodate Recommended Airport Facilities	2	2	4	2.5	5	
Runway Orientation within Wind Coverage Tolerance	2	3	6	3	6	
Site Development Considerations - Terrain, Utility Relocation/Access, Soils, Drainage	1	3	3	2	2	
Could Accommodate Future Expansion	1	3	3	3	3	
TOTAL SCORE	60		53			
Estimated Land Acquisition/Relocation E Estimated Initial Construction Budge Estimated Total Initial Budget (see n	\$7,883,700 \$22,649,000 <b>\$30,532,700</b>		\$7,625,400 \$28,349,000 <b>\$35,974,400</b>			

## SUMMARY COMPARISON OF SITES H AND 9

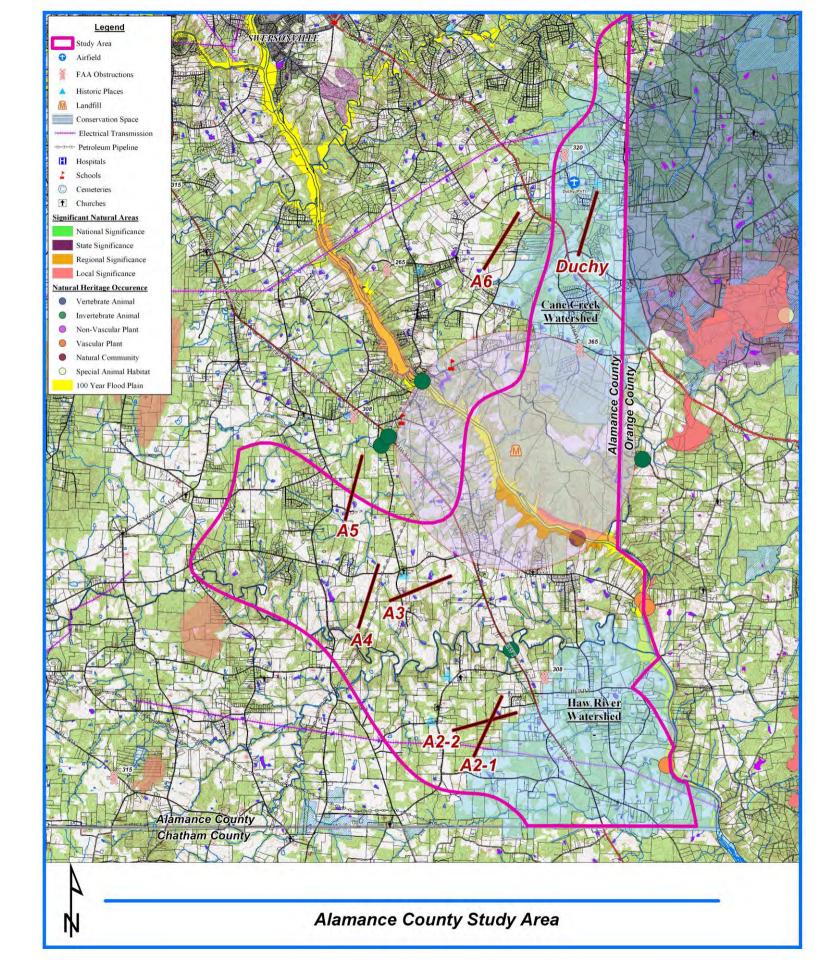
March 2005

#### B Impact Factor

1. Significant Adverse Impact/Does Not Meet Criteria

2. Some Impact/Marginally Meets Criteria

3. No Adverse Impact/Favorably Meets Criteria



## SITE RANKING

Rank	Site	Score	County
1	Н	60	Orange
2	9	53	Orange
3	Т	50	Chatham
4	R	50	Chatham
5	С	50	Orange
6	A4	49.5	Alamance
7	F2	49.5	Orange
8	Ν	49	Chatham
9	K	48.5	Orange
10	S	48	Chatham
11	A5	46	Alamance
12	A6	47	Alamance
13	A2	46.5	Alamance
14	В	45.5	Orange
15	A3	45	Alamance
16	Р	45	Chatham
17	F	43.5	Orange
18	U	43.5	Chatham
19	E	42	Orange
20	V	40	Chatham
21	J	38.5	Chatham
22	Miles	38	Orange
23	0	36	Chatham

Sites Screened Out					
Q	Chatham				
Duchy	Alamance				
А	Orange				
D	Orange				
G	Orange				
I	Orange				
L	Orange				
М	Chatham				

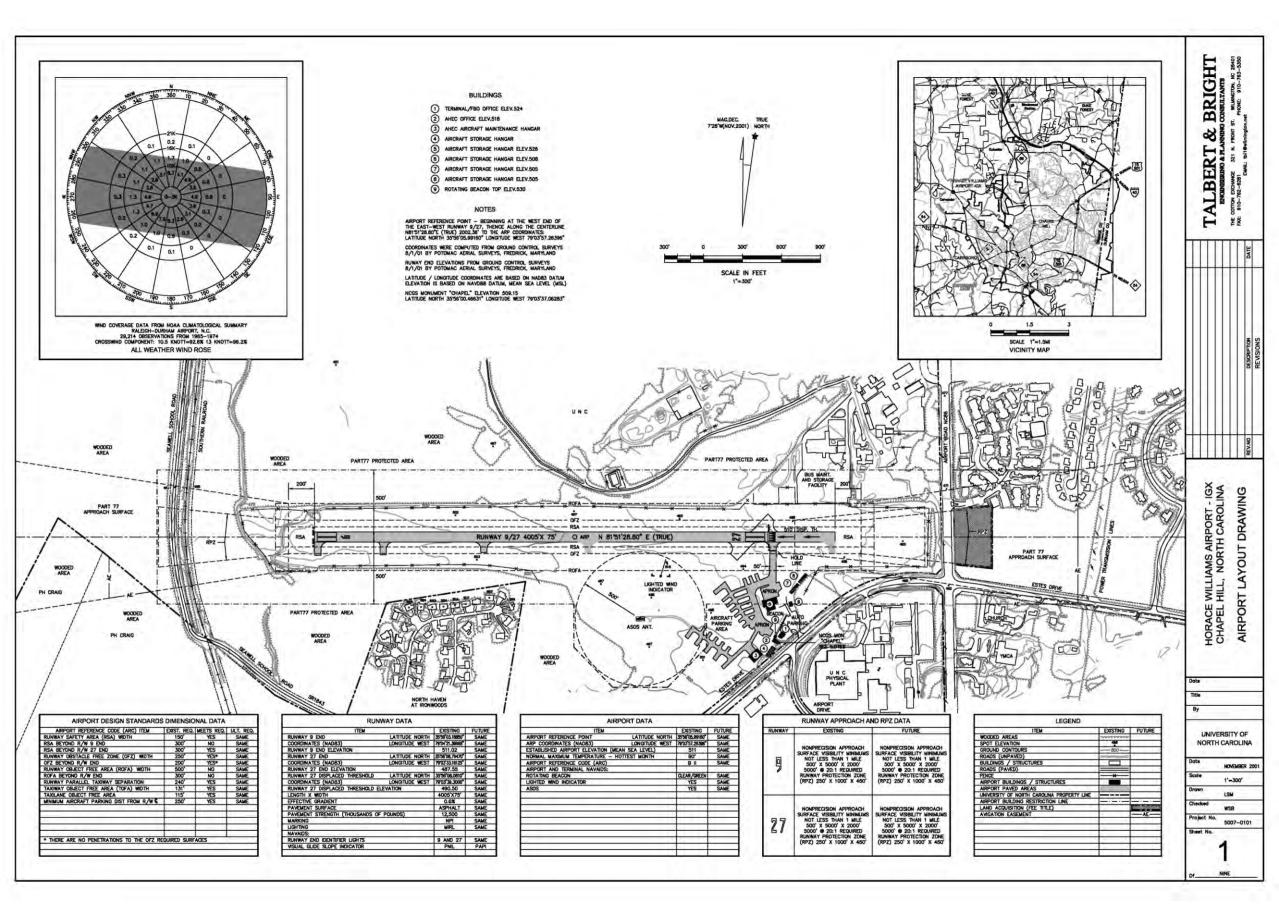
## **LEGEND**

ORANGE

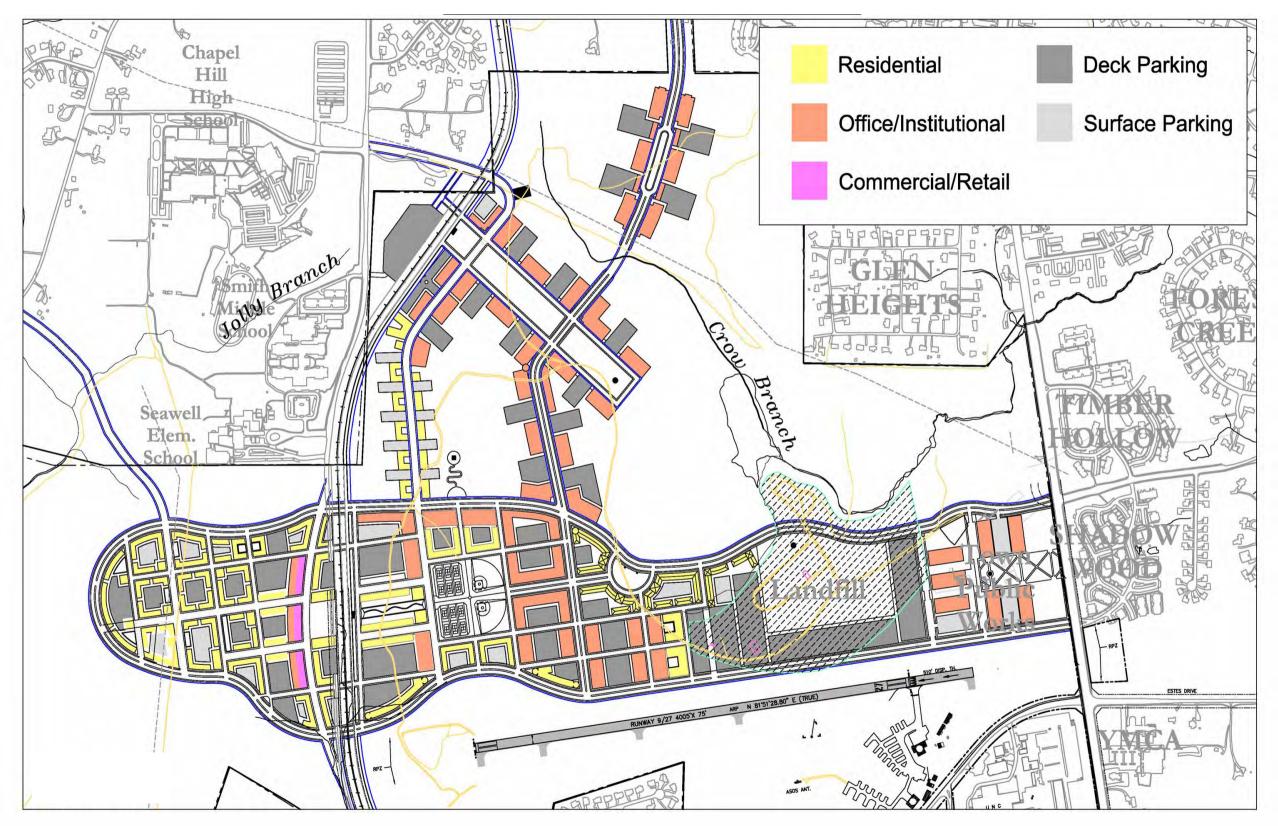
CHATHAM

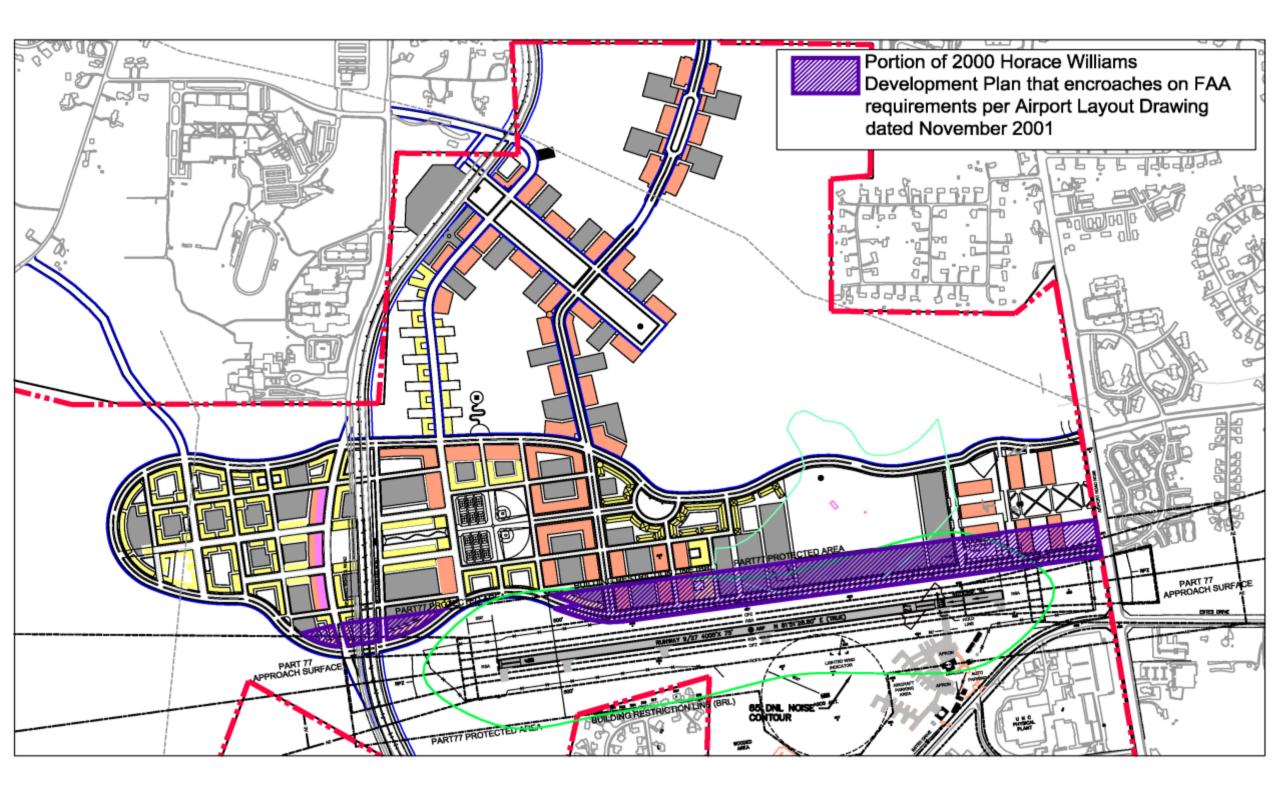
## ALAMANCE

Review 2000 Horace Williams Development Plan Encroachments on Horace Williams Airport



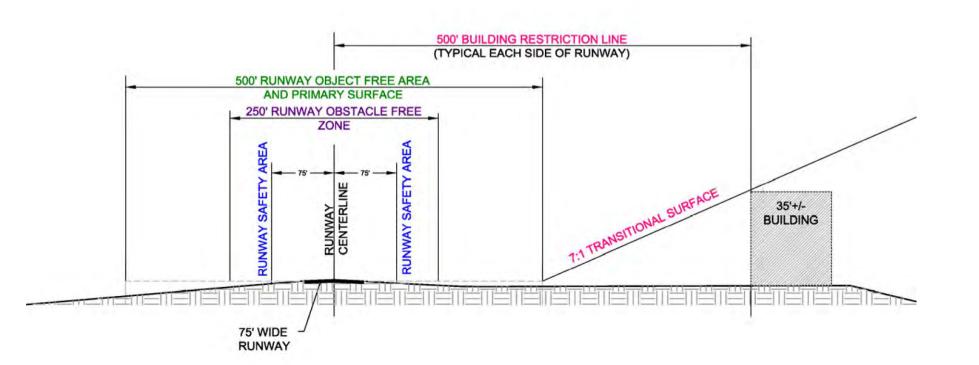
### 2000 HORACE WILLIAMS DEVELOPMENT PLAN

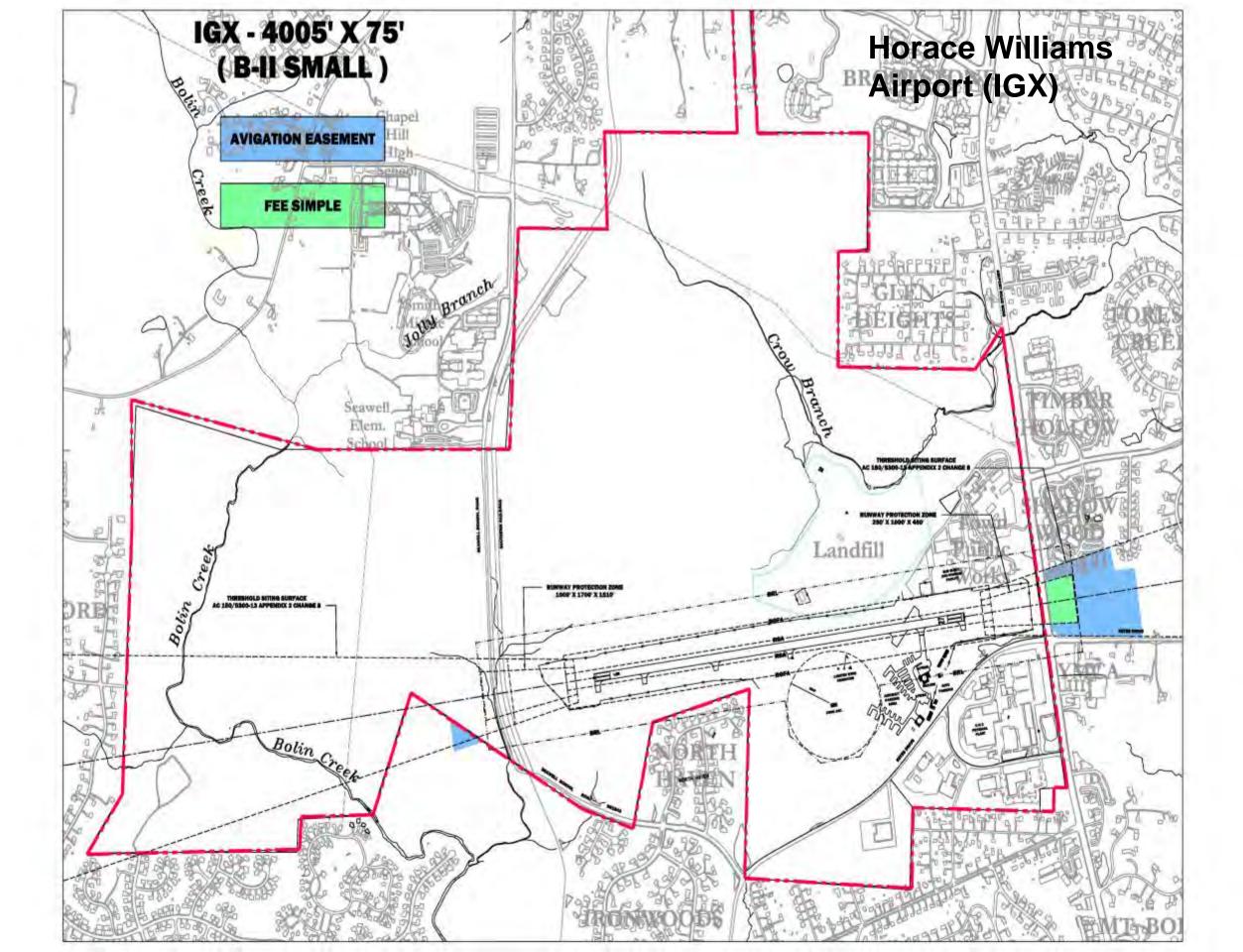


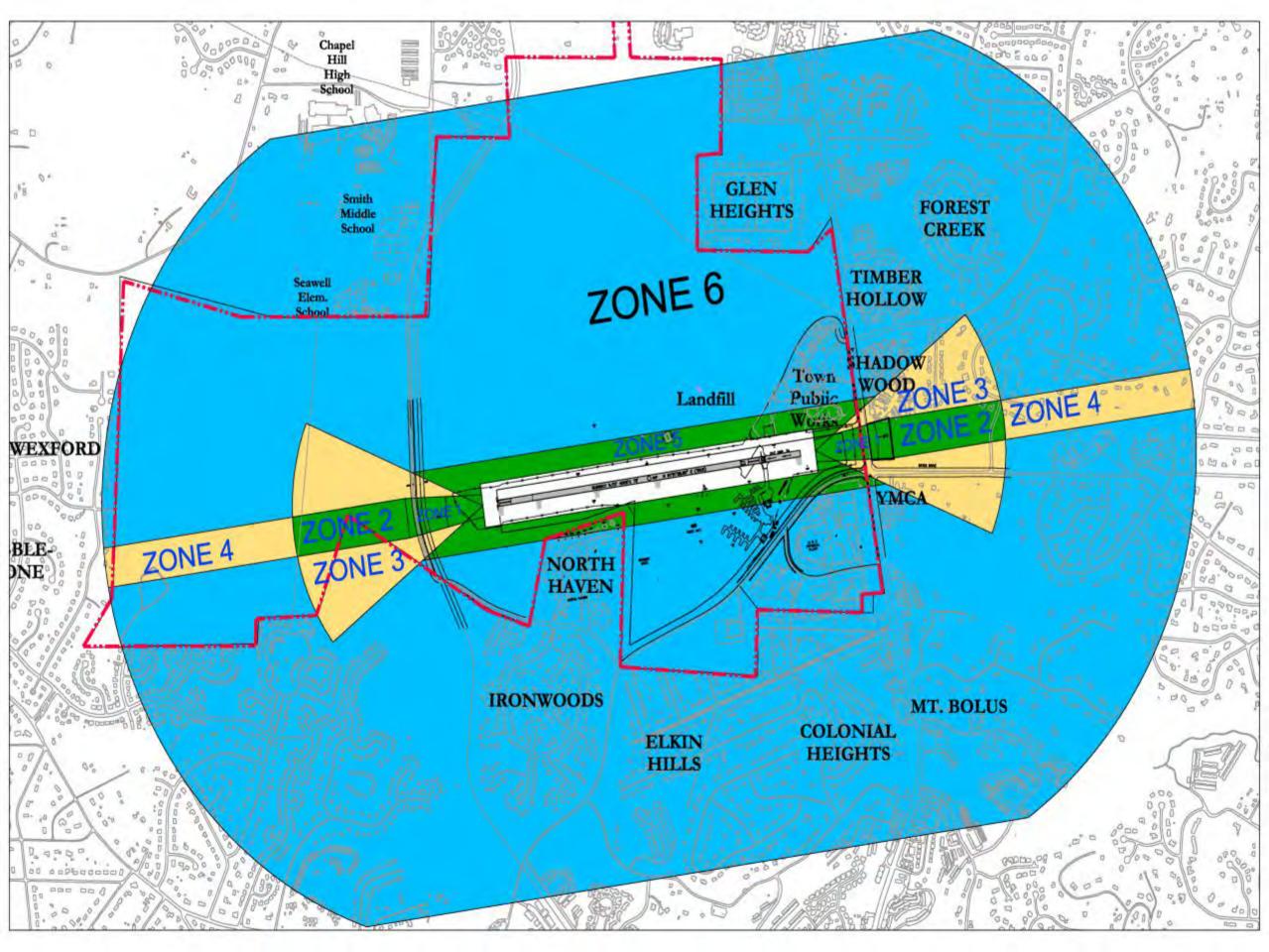


### Horace Williams Development Plan Encroachments on FAA Requirements for Horace Williams Airport

- 4250' of roadway encroaches on the Runway
   Object Free Area and Part 77 Primary Surface
- Five 3-story residential buildings, six 3-story institutional buildings, and nine 3-story parking decks encroach on the Building Restriction Line and Part 77 7:1 Transitional Surface
- Two of these residential buildings also encroach on the Part 77 and Appendix 2 20:1 Approach Surfaces
- Two of these residential buildings are also located within the 65 DNL Noise Contour and would be an incompatible use



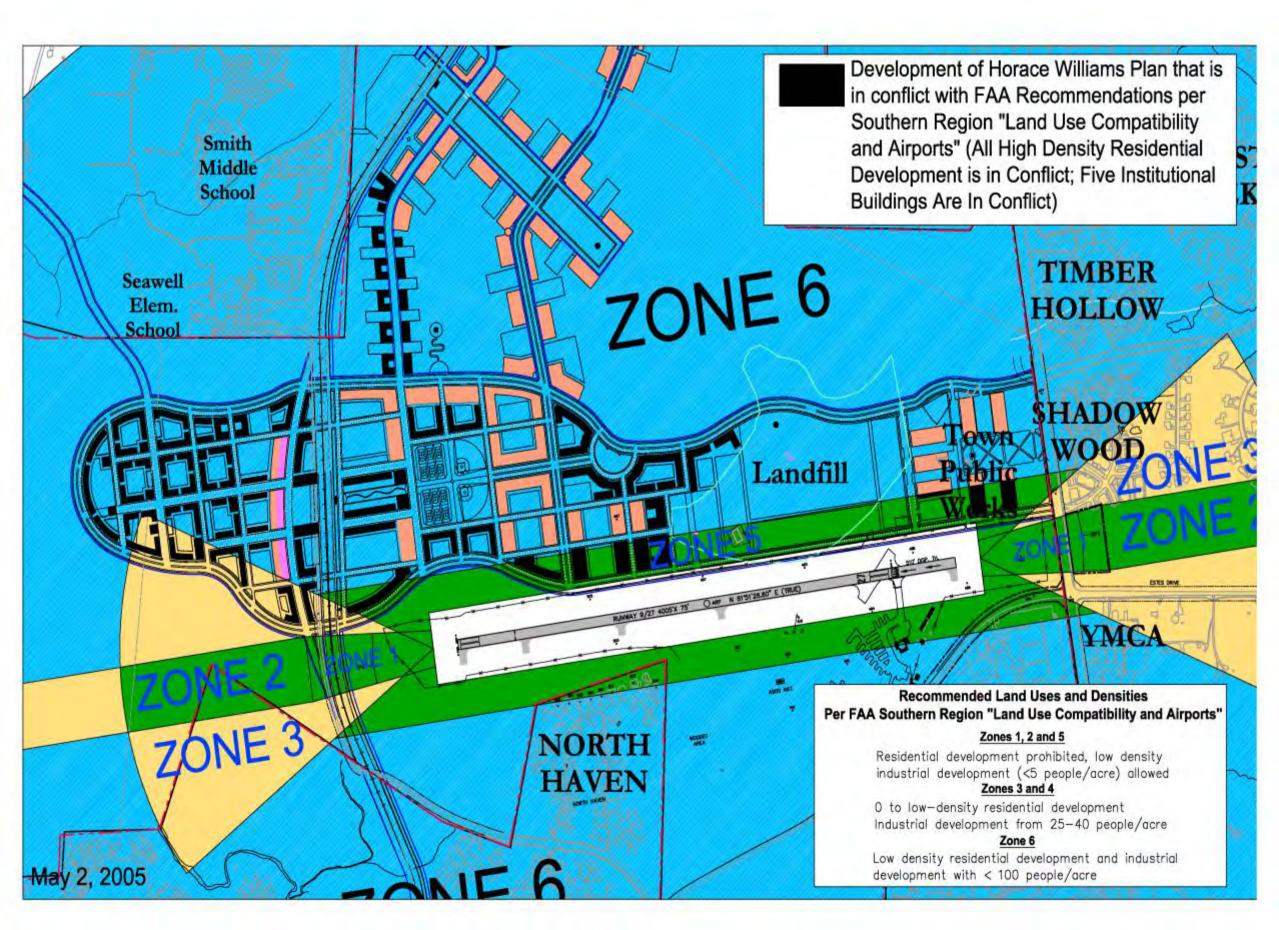




#### Density Calculations for Horace Williams Development Plan (includes residential and institutional uses)

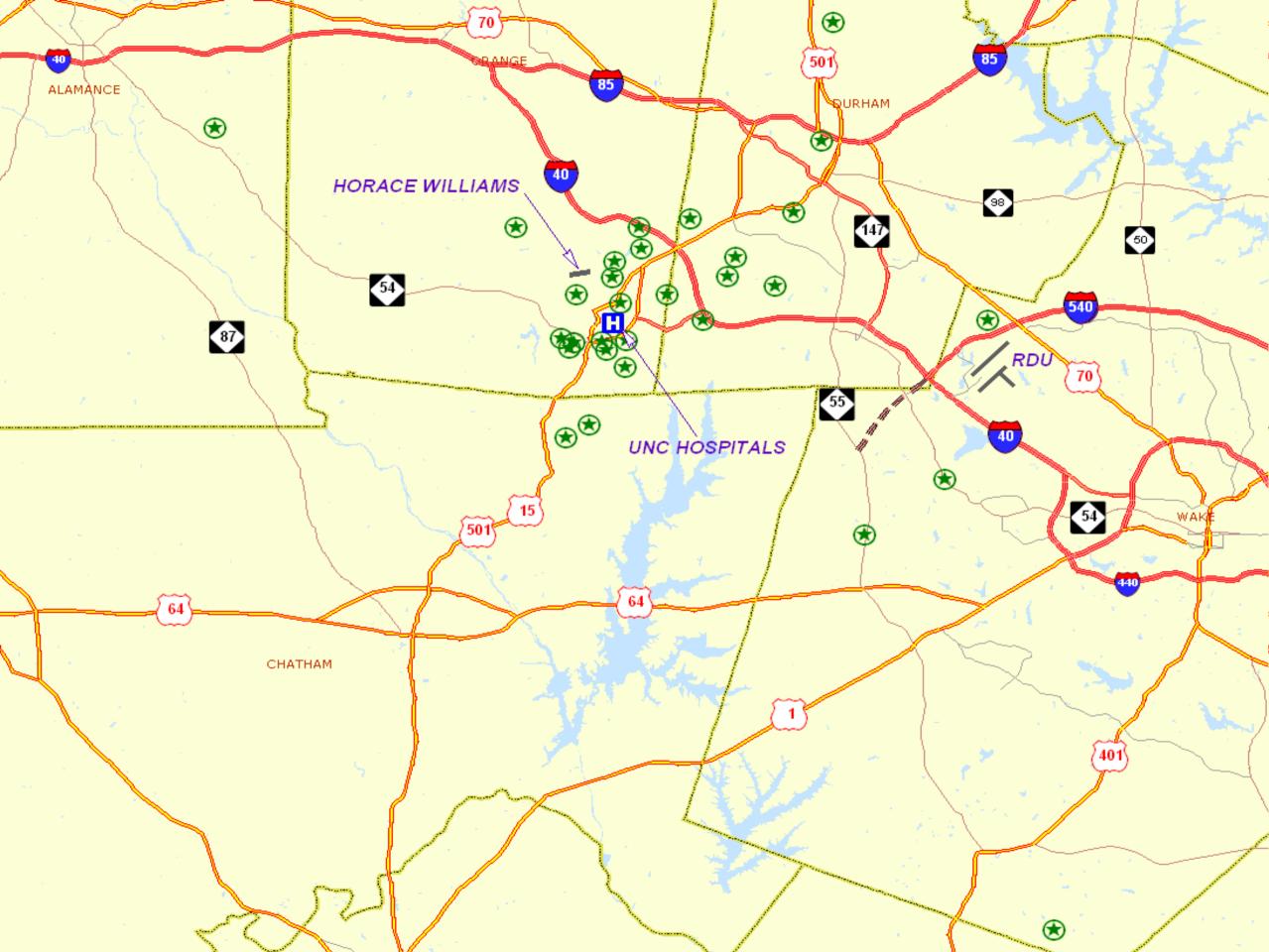
Horace Williams Development Plan Feature	Area and Density
Total acreage of development without airport	303 acres
Total acreage of occupied buildings	59 acres
Total number of people (at minimum occupancy)	21,430 people
Total number of people (at maximum occupancy)	29,100 people
Density based on minimum occupancy (including buildings and all other areas)	71 people/acre
Density based on maximum occupancy (including buildings and all other areas)	96 people/acre
Maximum density (including occupied buildings only)	493 people/acre
Density Calculations for Development Compatible wit	h FAA Requirements
Percentage of development that meets FAA requirements (footprint area)	89%
Total acreage of development that could be built and meet FAA requirements	271 acres
Total acreage of occupied buildings	54 acres
Total number of people (at minimum occupancy)	19,740 people
Total number of people (at maximum occupancy)	26,810 people
Density based on minimum occupancy (including buildings and all other areas)	73 people/acre
Density based on maximum occupancy (including buildings and all other areas)	99 people/acre
Maximum density (including occupied buildings only)	496 people/acre

Source of occupancy rates and building square footage: Ayers St. Gross and Stonebridge Development



Review Travel Time/Cost Increases if MedAir Operations Relocated to RDU





### **Travel times calculated by Martin Alexiou Bryson**

Travel Times		2005	2015	Increase over 10 yrs.
UNC Hospitals to IGX	Off-Peak	7 minutes	8 minutes	1 minutes
	Peak	8 minutes	10 minutes	2 minutes
	Heavy Peak	10 minutes	12 minutes	2 minutes
UNC Hospitals to RDU	Off-Peak	24 minutes	27 minutes	3 minutes
	Peak	25-28 minutes	28-31 minutes	3-6 minutes
	Heavy Peak	28-35 minutes	31-40 minutes	5-12 minutes
Travel time increase	Off-Peak	17 minutes	19 minutes	2 minutes
	Peak	17-20 minutes	18-21 minutes	1-4 minutes
	Heavy Peak	18-25 minutes	19-28 minutes	1-10 minutes
Note: Travel times are excl	usive of incidents, s	such as accidents or severe we	ather, which can increase	travel times beyond those

## Average increase in peak travel times by heavy users, weighted by frequency of use, based on home addresses

Including users with increases and decreases in travel time

shown.

13.5 minutes

### **Off-peak travel times** 1-1.5 hours prior to morning peak, between peaks, and 2.5 hours after afternoon peak

Peak travel times	<u>Morning</u>	<u>Evening</u>
Hospital to IGX	7:30-8:00	5:00-5:30
Hospital to RDU	7:30-9:00	5:00-6:30

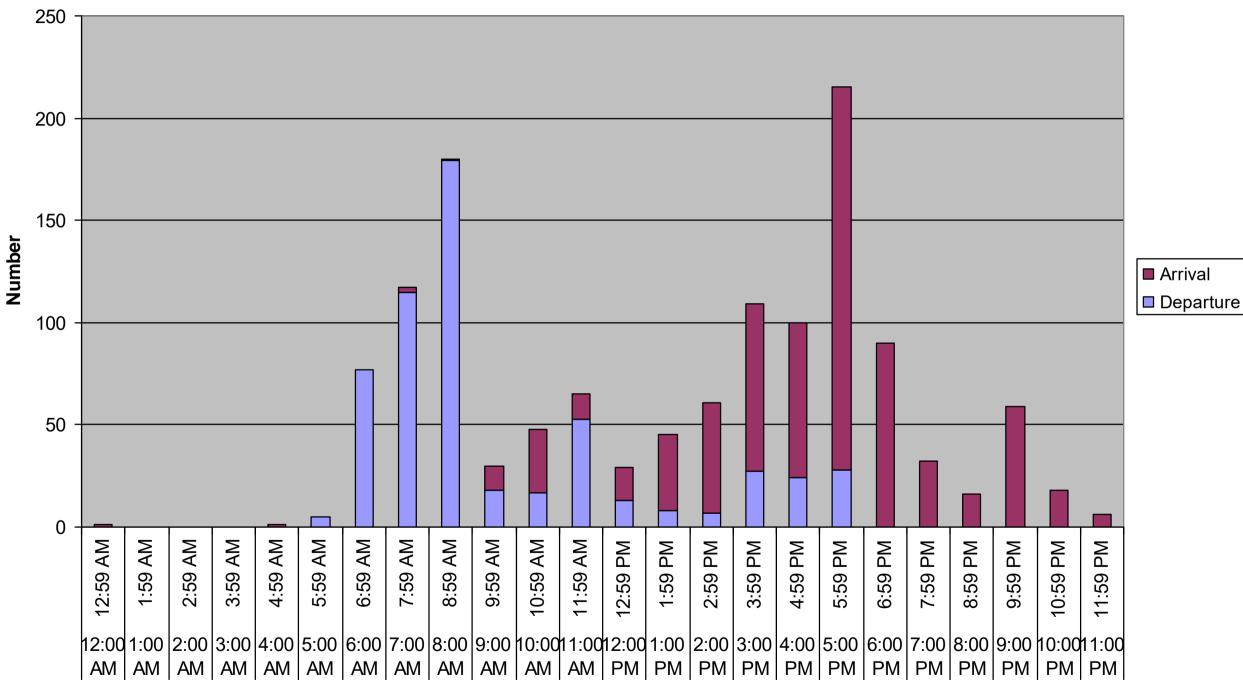
<u>Heavy peak</u>	<b>Frequency</b>	<u>Time Band</u>
Hospital to IGX	More frequent	Random - depends on buses, pedestrians, timing of lights, etc.
Hospital to RDU	1 trip/week	Afternoon most likely

### New projects affecting travel time in future - to be completed within next 3-5 years

Hospital to IGX	no improvements anticipated, more traffic anticipated
Hospital to RDU	- improvements to interchange of I-40 and NC-54 by state and private developers (not in TIP)
	- extension/widening of I-540 to Apex and Cary (in TIP)

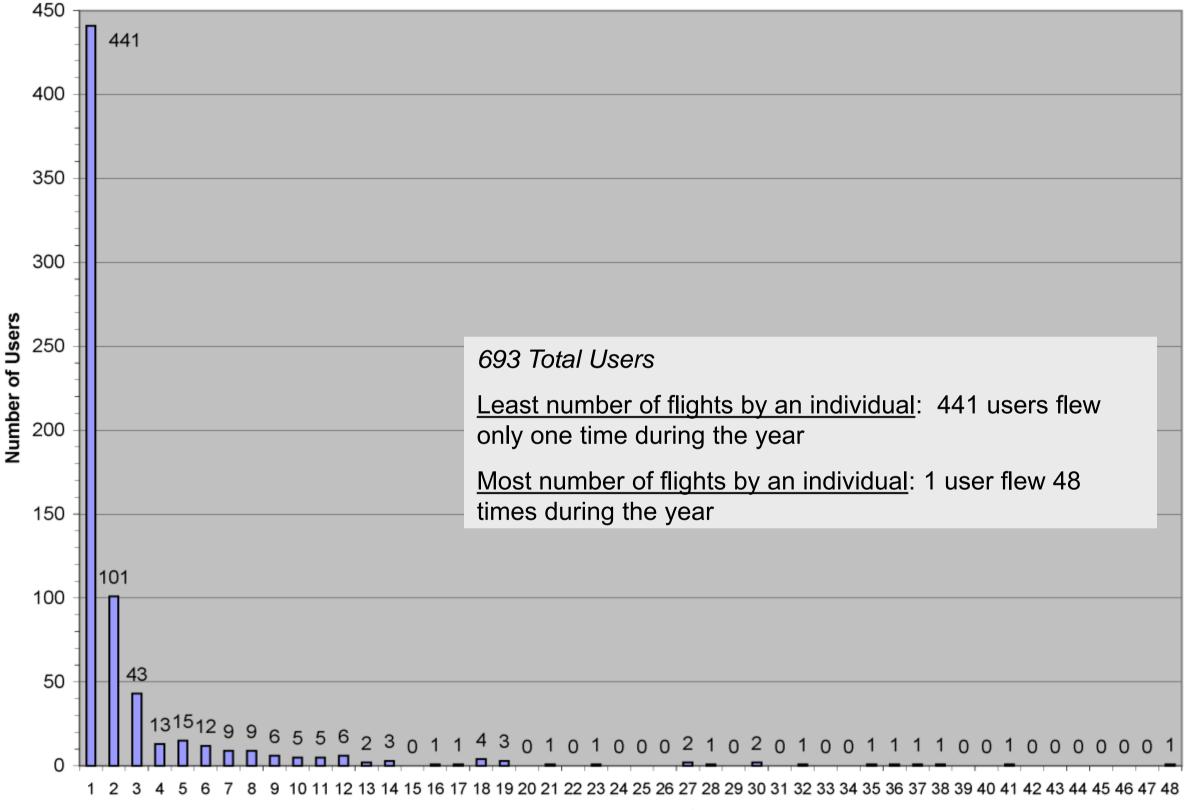
- NC 55 and Davis - being widened (in TIP)

Flights Using AHEC Planes (includes MedAir and Non-MedAir Users) 3/2004-2/2005



Time

### MedAir Flights 3/2004-2/2005 All Users



Number of Flights in One Year

NAME	Flights/ Year	NAME	Flights/ Year
Dr.	7	Dr.	12
Dr.	7	Dr.	12
Dr.	7	Dr.	13
Dr.	7	Dr.	13
Dr.	7	Dr.	14
Dr.	7	Dr.	14
Ms.	7	Mr.	14
Ms.	7	Dr.	16
Dr.	8	Ms.	18
Dr.	8	Ms.	18
Dr.	8	Dr.	18
Dr.	8	Dr.	19
Dr.	8	Dr.	19
Ms.	8	Ms.	19
Ms.	8	Dr.	21
Dr.	9	Ms.	23
Dr.	9	Dr.	27
Dr.	10	Dr.	28
Dr.	10	Dr.	30
Mr.	10	Dr.	30
Dr.	11	Dr.	32
Dr.	11	Dr.	35
Dr.	11	Dr.	36
Dr.	11	Dr.	37
Dr.	11	Ms.	38
Dr.	12	Dr.	41
Dr.	12	Dr.	48

### AHEC MedAir Users with 7 or More Flights/Year 3/2004-2/2005

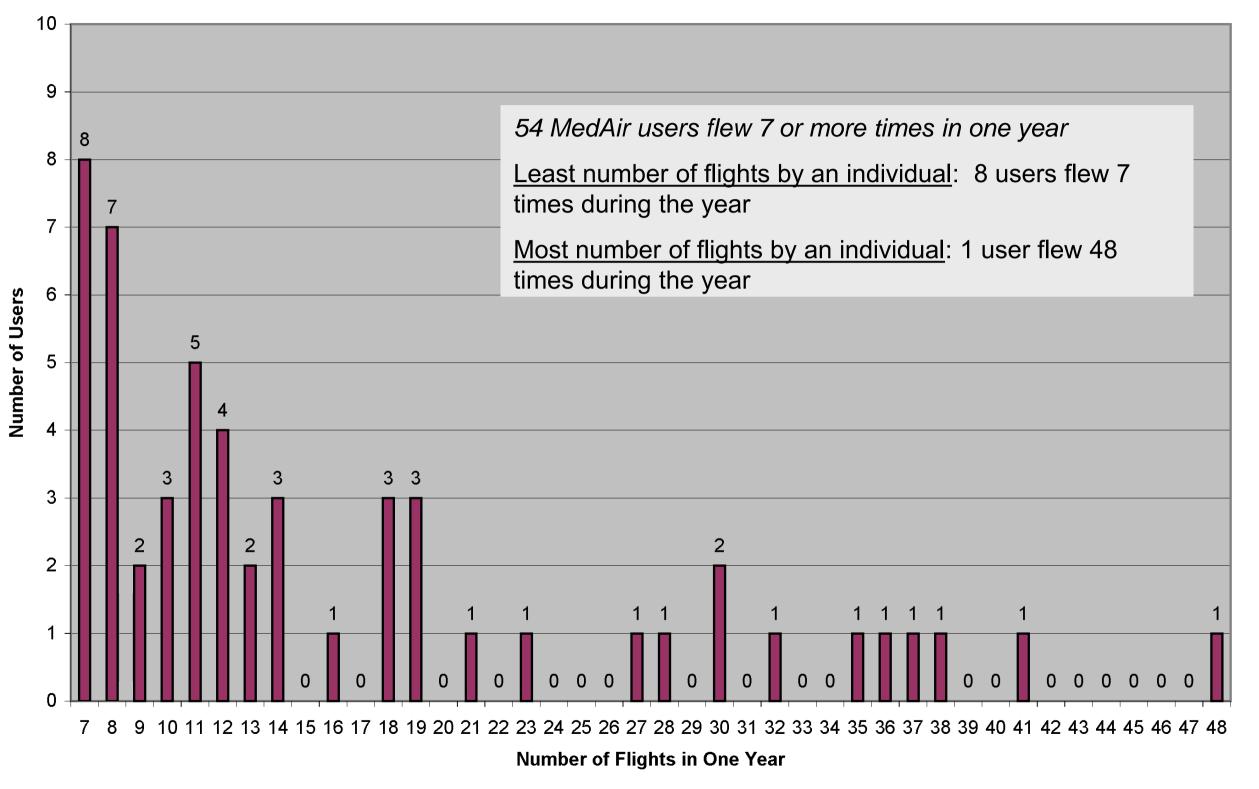
Total Flights 3/2004-

2/2005

884

Note: User names and flights provided by AHEC

### MedAir Flights 3/2004-2/2005 AHEC MedAir Users Only, Flying 7 or More Times/Year



# Example of Flight Data Provided by AHEC for 2 week period

DOW	Flight Date	REGIS_NO	Depart Time	Begin Drive Time from Hospital to IGX	Return Time	Destination 1	Destination 2	Number of Passengers	Number of Passenger Vehicle Trips	# of Peak Trips A.M.	# of Peak Trips P.M.
	3/15/2004	1000675	7:07	6:55		CHAPEL HILL	WILMINGTON, NC	2	4		
Mon	3/15/2004	1000676	7:15	7:03	17:00	CHAPEL HILL	BEAUFORT, NC	1	2		1
Mon	3/15/2004	1000677	7:18	7:06	14:43	CHAPEL HILL	LUMBERTON	1	2		
Mon	3/15/2004	1000678	7:23	7:11	18:18	CHAPEL HILL	ASHEVILLE	1	2		
Mon	3/15/2004	1000679	8:05	7:53	15:45	CHAPEL HILL	FAYETTEVILLE	5	10	5	
Tue	3/16/2004	1000682	7:59	7:47	17:45	CHAPEL HILL	FAYETTEVILLE	1	2	1	
Tue	3/16/2004	1000683	17:26	17:14	21:47	CHAPEL HILL	WILMINGTON, NC	1	2	1	
Wed	3/17/2004	1000686	6:39	6:27	11:14	CHAPEL HILL	WILMINGTON, NC	1	2		
Wed	3/17/2004	1000688	11:10	10:58	17:25	CHAPEL HILL	WINSTON-SALEM	1	2		1
Wed	3/17/2004	1000689	11:30	11:18	15:00	CHAPEL HILL	ROCKY MT WILSON	1	2		
Wed	3/17/2004	1000691	15:05	14:53	21:30	CHAPEL HILL	ASHEVILLE	1	2		
	3/18/2004	1000693	7:30	7:18	17:25	CHAPEL HILL	WILMINGTON, NC	2	4		2
	3/18/2004	1000695	7:32	7:20		CHAPEL HILL	ASHEVILLE	3	6		
Thu	3/18/2004	1000695	7:32	7:20		CHAPEL HILL	ASHEVILLE	1	2		
Thu		1000697	7:32	7:20		CHAPEL HILL	CHARLOTTE	1	2		
	3/18/2004	1000695	7:32	7:20		CHAPEL HILL	ASHEVILLE	2	4		
	3/18/2004	1000696	7:35	7:23		CHAPEL HILL	ASHEVILLE	1	2		
	3/18/2004	1000696	7:35	7:23		CHAPEL HILL	LEXINGTON, NC	3	6		
Thu		1000697	15:40	15:28		CHAPEL HILL	ASHEVILLE	3	6		
Fri		1000699	7:32	7:20		CHAPEL HILL	CHARLOTTE	1	2		
Fri		1000700	8:00	7:48		CHAPEL HILL	FAYETTEVILLE	4	8	4	
Fri		1000703	9:23	9:11		CHAPEL HILL	NEW BERN	3	6		
Mon		1000707	7:17	7:05		CHAPEL HILL	CHARLOTTE	1	2		1
	3/22/2004	1000708	7:25	7:13		CHAPEL HILL	LUMBERTON	2	4		
	3/22/2004	1000710	8:00	7:48		CHAPEL HILL	FAYETTEVILLE	4	8	4	_
	3/22/2004	1000711	12:36	12:24		CHAPEL HILL	TARBORO	2	4		2
	3/23/2004	1000713	8:04	7:52		CHAPEL HILL	FAYETTEVILLE	1	2	1	
	3/23/2004	1000716	15:40	15:28		CHAPEL HILL	ROCKY MT WILSON	2	4		
	3/23/2004	1000717	16:50	16:38		CHAPEL HILL	GREENVILLE, NC	1	2		
	3/24/2004	1000719	7:30	7:18		CHAPEL HILL	RUTHERFORDTON	2	4		
	3/24/2004	1000720	7:40	7:28		CHAPEL HILL	WILMINGTON, NC	1	2		
	3/24/2004	1000722	9:40	9:28		CHAPEL HILL	WILMINGTON, NC	1	2		4
	3/24/2004	1000721	11:05	10:53		CHAPEL HILL	WINSTON-SALEM	[] ∡	2		1
	3/25/2004	1000725	7:15	7:03			ASHEVILLE		2		
	3/25/2004	1000727	7:40	7:28			WILMINGTON, NC	2	4		
	3/25/2004	1000726	10:07	9:55			WILMINGTON, NC	J 1	6 2		
	3/26/2004	1000731	6:14 8:02	6:02			WILMINGTON, NC	і л	2 8	А	
	3/26/2004 3/26/2004	1000736	8:02	7:50		CHAPEL HILL CHAPEL HILL	FAYETTEVILLE ASHEVILLE	4	8 2	4	
	3/20/2004	1000737	11:29	11:17	10.47		AGHEVILLE	I	2		

UNC Hospital to Horace Williams						
-			-			
Peak travel times	Morning	0				
Hospital to IGX	7:30-8:00	5:00-5:30				
20	05			r		
Hospital to IGX		Travel	Total Travel			
		Time/Trip	Time			
Total Number of Passenger Trips	2586	(minutes)	(minutes)			
Total Number of Heavy Peak Trips						
(assume 2/week)	122	10	1224			
Total Number of Peak Trips	490	8	3917			
Total Number of Off-Peak Trips	1974	7	13818			
	2586		18959	minutes		
			316	hours		
20	15					
Hospital to IGX - 2015		Travel	Total Travel			
		Time/Trip	Time			
Total Number of Passenger Trips	2586	(minutes)	(minutes)			
Total Number of Heavy Peak Trips				-		
(assume 2/week)	123	12	1481			
Total Number of Peak Trips	494	10	4936			
Total Number of Off-Peak Trips	1969	8	15752			
·	2586		22169	minutes		
			369	hours		

#### TRAVEL TIME CALCULATIONS FOR ALL USERS

UNC Ho	ospital to R	DU		
<b>Peak travel times</b> Hospital to RDU	<b>Morning</b> 7:30-9:00	<b>Evening</b> 5:00-6:30		
200	)5			
Hospital to RDU - 2005		Travel Time/Trip	Total Travel	
Total Number of Passenger Trips	2586	(minutes)	Time	
Total Number of Heavy Peak Trips				
(assume 2/week)	182	32	5824	
Total Number of Peak Trips	728	27	19656	
Total Number of Off-Peak Trips	1676	24	40224	
	2586		65704	minutes
			1095	hours
201	5			
Hospital to RDU - 2015		Travel	Total	
•		Time/Trip	Travel	
Total Number of Passenger Trips	2586	(minutes)	Time	
Total Number of Heavy Peak Trips				
(assume 2/week)	166	36	5976	
Total Number of Peak Trips	664	30	19920	
Total Number of Off-Peak Trips	1756	27	47412	
	2586		73308	minutes
			1222	hours

	<b>Total Hours</b>	Trips/Year	Hours/Trip	Taxi/Trip	Total Hours/Trip	Minutes
Difference in travel time 2005	779 hrs/year	2586	0.30	0.07	0.37	22
Difference in travel time 2015	852 hrs/year	2586	0.33	0.07	0.40	24

NAME Dr.	Year	Trips/Year	Incrosco/ Trip (hours)	
۱r			Increase/ Trip (hours)	Increase (hours/year
	7	14	0.37	5.2
Dr.	7	14	0.37	5.2
Dr.	7	14	0.37	5.2
Dr.	7	14	0.37	5.2
Dr.	7	14	0.37	5.2
Dr.	7	14	0.37	5.2
As.	7	14	0.37	5.2
As.	7	14	0.37	5.2
Dr.	8	16	0.37	5.9
Dr.	8	16	0.37	5.9
Dr.	8	16	0.37	5.9
Dr.	8	16	0.37	5.9
Dr.	8	16	0.37	5.9
Лs.	8	16	0.37	5.9
	8	16	0.37	5.9
As.	0			
Dr.	9	18	0.37	6.7
Dr.	9	18	0.37	6.7
Dr.	10	20	0.37	7.4
)r.	10	20	0.37	7.4
/Ir.	10	20	0.37	7.4
Dr.	11	22	0.37	8.1
Dr.	11	22	0.37	8.1
Dr.	11	22	0.37	8.1
Dr.	11	22	0.37	8.1
)r.	11	22	0.37	8.1
)r.	12	24	0.37	8.9
)r.	12	24	0.37	8.9
)r.	12	24	0.37	8.9
	12	24	0.37	8.9
)r.				
)r.	13	26	0.37	9.6
Dr.	13	26	0.37	9.6
Dr.	14	28	0.37	10.4
Dr.	14	28	0.37	10.4
/Ir.	14	28	0.37	10.4
Dr.	16	32	0.37	11.8
/ls.	18	36	0.37	13.3
ls.	18	36	0.37	13.3
)r.	18	36	0.37	13.3
)r.	19	38	0.37	14.1
)r.	19	38	0.37	14.1
ls.	19	38	0.37	14.1
	21			
)r.		42	0.37	15.5
ls.	23	46	0.37	17.0
)r.	27	54	0.37	20.0
)r.	28	56	0.37	20.7
)r.	30	60	0.37	22.2
)r.	30	60	0.37	22.2
)r.	32	64	0.37	23.7
)r.	35	70	0.37	25.9
)r.	36	72	0.37	26.6
)r.	37	74	0.37	27.4
ls.	38	76	0.37	28.1
)r.	41	82	0.37	30.3
)r.	41	96	0.37	35.5
otal	<u>40</u> 884	1768	0.37	654.2
otal increase in travel t	ime to RDU from			
lospitals - frequent Mec Average Hourly Cost (inc		vages nlus	654	hours
0% multiplier weighted	by frequency of	f use)	\$ 71.00	/hour
Total additional cost/yea JNC Hospitals	ar, travel time to	RDU from	\$ 46,400.00	

2005 Travel Time Difference - UNC Hospital to IGX vs. UNC Hospital to RDU AHEC MedAir Users with 7 or More Flights/Year - 3/2004-2/2005

2015 Travel Time Difference - I	UNC Hospita	l to IGX vs. U	NC Hospital to RDU
AHEC MedAir Users with 7 or I	More Flights	/Year - 3/2004	-2/2005
	Eliabte/	Vahiala	2015 Traval Time

	Flights/	Vehicle	2015 Travel Time	Total Travel Time
NAME	Year	Trips/Year	Increase/ Trip (hours)	Increase (hours/year)
Dr.	7	14	0.40	5.6
Dr.	7	14	0.40	5.6
)r.	7	14	0.40	5.6
ir.	7	14	0.40	5.6
r.	7	14	0.40	5.6
)r.	7	14	0.40	5.6
ls.	7	14	0.40	5.6
ls.	7	14	0.40	5.6
Dr.	8	16	0.40	6.4
Dr.	8	16	0.40	6.4
Dr.	8	16	0.40	6.4
Dr.	8	16	0.40	6.4
Dr.	8	16	0.40	6.4
/ls.	8	16	0.40	6.4
ls.	8	16	0.40	6.4
Dr.	9	18	0.40	7.2
Dr.	9	18	0.40	7.2
)r.	10	20	0.40	8.0
)r.	10	20	0.40	8.0
1r.	10	20	0.40	8.0
)r.	11	22	0.40	8.8
Dr.	11	22	0.40	8.8
)r.	11	22	0.40	8.8
Dr.	11	22	0.40	8.8
Dr.	11	22	0.40	8.8
Dr.	12	24	0.40	9.6
Dr.	12	24	0.40	9.6
Dr.	12	24	0.40	9.6
Dr.	12	24	0.40	9.6
Dr.	13	26	0.40	10.4
Dr.	13	26	0.40	10.4
Dr.	14	28	0.40	11.2
Dr.	14	28	0.40	11.2
Лr.	14	28	0.40	11.2
Dr.	16	32	0.40	12.8
/ls.	18	36	0.40	14.4
As.	18	36	0.40	14.4
)r.	18	36	0.40	14.4
)r.	19	38	0.40	15.2
)r.	19	38	0.40	15.2
n. Is.	19	38	0.40	15.2
	21	38 42	0.40	16.8
)r. Ac				
ls.	23 27	46 54	0.40	18.4
)r.		54	0.40	21.6
)r.	28	56 60	0.40	22.4
)r.	30	60 60	0.40	24.0
)r.	30	60	0.40	24.0
)r.	32	64 70	0.40	25.6
)r.	35	70	0.40	28.0
Dr.	36	72	0.40	28.8
)r.	37	74	0.40	29.6
ls.	38	76	0.40	30.4
Dr.	41	82	0.40	32.8
r.	48 <b>884</b>	96 <b>1768</b>	0.40	38.4
otal increase in travel time				707.2
lospitals - frequent MedAir	users			hours
Average Hourly Cost (includ nultiplier weighted by frequ		ages plus 50%	\$ 81.00	/hour
Fotal additional cost/year, tr		RDU from	• • • • • • • • • • • • • • • • • • • •	
JNC Hospitals			\$ 57,300.00	

## AHEC Costs to Relocate MedAir Operations to RDU

Initial cost		(Fr	Hangar Option 1 eestanding Hangar)		Hangar Option 2 (Hangar/Offices Connected to NCDOA Facility)
Construct hangar and offices (UNC Estimate)	ç	\$	960,000	\$	2,100,000
Movers (UNC Estimate)	ç	\$	18,000	\$	18,000
Office furniture (\$5,000 x 8 offices) (AHEC Estimate)	C C	\$	40,000	\$	40,000
Maintenance hangar upfit			TBD		TBD
Office equipment (fax machine, copier) (AHEC Estimate)	ç	\$	9,000	\$	9,000
Το	tal S	\$	1,027,000	\$	2,167,000
Annual (recurring) costs	I	На	ngar Option 1	На	angar Option 2
Ground lease, \$0.12/sq ft/year all area (UNC Estimate)	ç	\$	8,294	\$	7,709
Airport services, \$0.01/sq ft/year built area (UNC Estimate)	ç	\$	94	\$	198
Weather Service (UNC Estimate)	C C	\$	700	\$	700
Building operating and maintenance					
(based on state reserve formula) (UNC Estimate)	C C	\$	91,865	\$	191,417
Increased gas prices at RDU (AHEC Estimate)	C C	\$	16,000	\$	16,000
Eliminate air traffic coordinator position (AHEC Estimate)				\$	(48,947)
Eliminate annual university hangar rent (AHEC Estimate)	C C	\$	(33,600)	\$	(33,600)
Eliminate annual tie-down fees (AHEC Estimate)	C C	\$	(6,840)	\$	(6,840)
Increased telephone, supplies (AHEC Estimate)	S	\$	(1,000)	\$	(1,000)
Mileage cost for heavy MedAir users (1768 trips at 19.6 miles/trip at	t				
0.405/mile)	C C	\$	14,034	\$	14,034
Travel time cost for heavy MedAir users flying 7+ times/year(2005)		\$	46,400	\$	46,400
То	otal s	\$	135,948	\$	186,072

#### Comparison of IGX and RDU Options Using Alternative Airport Site Scoring Methodology

		Upgrade Horace Williams Airport to Unrestricted 4005' Runway, Co- Located with Horace Williams Development Plan		Relocate MedAir Operations to RDU			
	Weighting	Impact Factor	Total		Impact Total Factor Score		
Major Site Factors	Factor A	В	С	Comments	В	С	Comments
Site is within 25 minutes of UNC Hospital	2	3	6	Drive times calculated by Alexiou indicate average range of 7 to 10 minutes.	1	2	Drive times calculated by Alexiou indicate average range of 24 to 32 minutes.
Site is more 30 minutes or more from NPIAS airports	2	3	6		3	6	
Site is within 0-15 Minutes of AHEC	2	3	6	Drive times calculated by Alexiou indicate range of 7 to 10 minutes.			
Zoning allows airport development with no variance/special approval	4	2	8	Permits required.	3	12	Existing airport; hangar development assumed allowed by zoning.
Airspace Compatibility – Close-In Terminal Airspace Obstructions, Adjacent Airport Airspace Conflicts, Landfills	4	3	12	Site appears to have no terrain, tower, or electrical transmission line obstructions to FAR Part 77 surfaces or 20:1 approach surfaces. Tree obstructions can be reasonably mitigated. It should be noted that IGX Part 77 surfaces are smaller in area and have less restrictive approach slopes than the alternative airport footprint.	3	12	No known terrain, tower, or electrical transmission line obstructions to FAR Part 77 surfaces or approach surfaces.
Social Impacts - Existing and Future Land Use, Roadways	3	1	3	Four schools within 1 mile; airport is located within 1 mile of densely developed areas; conflicts with planned Carolina North development.	3	9	No known social impacts from relocation of MedAir operations to RDU.
Environmental Impacts (Wetlands, Streams, Rare Species, Floodplains, Historical/Archeological, Farmlands)	3	1	3	11 acres of tree clearing required from the Bolin Creek Significant Natural Area.	3	9	No known environmental impacts from relocation of MedAir operations to RDU.
Parcel Size/Contiguity; Ability to Accommodate Recommended Airport Facilities	2	3	6	Minimum airport facilities already exist.	3	6	Per UNC/AHEC coordination with RDU, RDU can accommodate proposed AHEC facilities.
Runway Orientation within Wind Coverage Tolerance	2	1	2	Runway 9-27 >= 95% wind coverage	3	6	RDU - Runways 5-23L and R >97% wind coverage; Runway 14- 23 crosswind
Site Development Considerations - Terrain, Utility Relocation/Access, Soils, Drainage	1	3	3	Site is relatively flat and does not require relocation of roads or electrical transmission lines.	3	3	Hangar site is relatively flat and does not require relocation of roads, electrical transmission lines, or other structures.
Could Accommodate Future Expansion	1	2	2	500' runway extension possible; some terminal area expansion possible.	3	3	No expansion of airport runways or terminal area needed to accommodate AHEC facilities.
TOTAL SCORE			57			68	
Estimated Initial Land Acquisition Buc Estimated Initial Construction Budge Estimated Total Initial Budget		-		\$1,432,375 \$3,677,700 <b>\$5,110,075</b>	\$0 \$2,200,000 <b>\$2,200,000</b>		

B Impact Factor

1. Significant Adverse Impact/Does Not Meet Criteria

2. Some Impact/Marginally Meets Criteria

3. No Adverse Impact/Favorably Meets Criteria

A Weighting Factors

C Total Score = B Impact Factor \* A Weighting Factor

## SITE RANKING

Rank	Site	Score	County
1	RDU	68	Wake
2	Н	60	Orange
3	IGX	57	Orange
4	9	53	Orange
5	Т	50	Chatham
6	R	50	Chatham
7	С	50	Orange
8	A4	49.5	Alamance
9	F2	49.5	Orange
10	Ν	49	Chatham
11	K	48.5	Orange
12	S	48	Chatham
13	A5	46	Alamance
14	A6	47	Alamance
15	A2	46.5	Alamance
16	В	45.5	Orange
17	A3	45	Alamance
18	Р	45	Chatham
19	F	43.5	Orange
20	U	43.5	Chatham
21	E	42	Orange
22	V	40	Chatham
23	J	38.5	Chatham
24	Miles	38	Orange
25	0	36	Chatham

Sites Screened Out				
Q	Chatham			
Duchy	Alamance			
А	Orange			
D	Orange			
G	Orange			
	Orange			
L	Orange			
М	Chatham			

LEGEND

ORANGE

CHATHAM

ALAMANCE

WAKE

# SUMMARY OF SITE SCORES FOR ALL AIRPORT OPTIONS EVALUATED