



# Prioritization 3.0/Strategic Transportation Investments

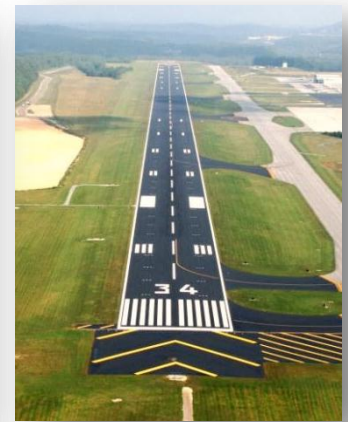
## BOT Approved Aviation Quantitative Scoring Criteria

September 10, 2013



NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

# DIVISION OF AVIATION





# Eligibility Definitions – Division of Aviation

## Types of Aviation Eligible Projects evaluated in P3.0 (Statewide, Regional and Division):

- Land Acquisitions
- Major Pavement Expansions
  - Runway Extensions
  - New Parallel Taxiways
  - Apron Expansions
- New Airfield Equipment
  - Lighting/Signage
  - Electronic Navigational Aids
- New Airport





# STI – Eligibility for Airports

## Statewide Mobility– Commercial Service Airports

- International Service or 375,000 enplanements
- Federal Aviation Administration's National Plan of Integrated Airport Systems (NPIAS)
- \$500,000 per airport per project per year
- Charlotte Douglas International Airport, Raleigh-Durham International Airport, Piedmont Triad International Airport, Wilmington International Airport

## Regional Impacts – Commercial Service Airports

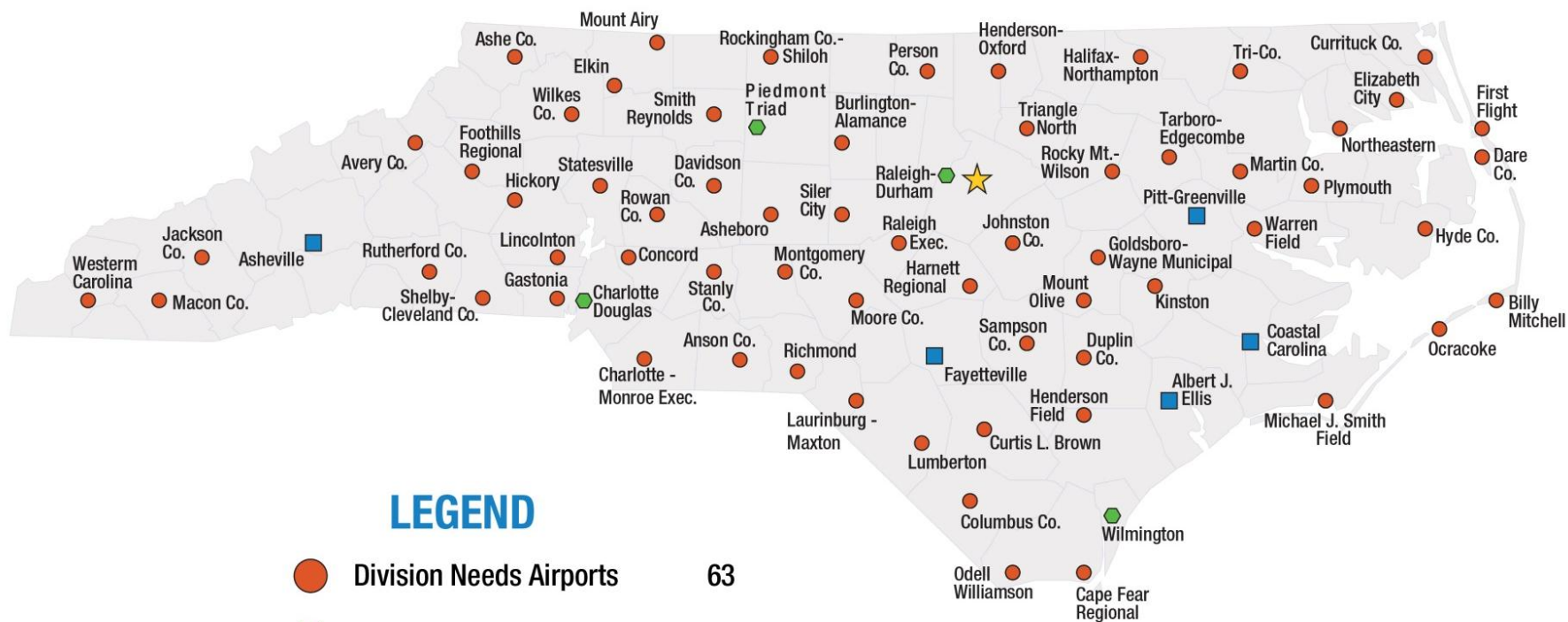
- NPIAS airports that are not included in subdivision (1) of this section
- \$300,000 per airport per project per year
- Asheville Regional Airport, Albert J. Ellis Airport, Coastal Carolina Airport, Pitt-Greenville Airport, Fayetteville Regional Airport

## Division Needs – General Aviation Airports

- NPIAS airports that are not included in subdivision (1) or (2)
- General Aviation airports
- Statewide total funding not to exceed \$18,500,000



# North Carolina Airports





# Proposed Aviation Criteria

Criteria	Statewide Mobility	Regional Impacts	Division Needs
	% Wt	% Wt	% Wt
Division of Aviation Project Rating	40	40	30
FAA ACIP Rating	40	20	10
Local Investment Index	10	5	5
Federal Investment Index	10	5	
Volume/Demand Index			5
	100%	70%	50%



# Aviation – Project Rating

**Definition:** Projects prioritized and classified within the North Carolina Division of Aviation (DOA) project categories, which is based on a data-driven process that was published to all the airports in 2006.

**Why use this criteria:** Assigns point values based on priority and need of the project

**Sources:**

- NC Airport Development Plan
- Airport's FAA approved Airport Layout Plan
- NC Airport System Plan

**Scoring based on points assigned to project as evaluated by NCDOA minimum and recommended criteria**

**Recommended Weights:** 40% Statewide, 40% Regional, 30% Division





# NCDOA Project Points

Master Project Categories	Tier 1 - Minimum Infrastructure	Tier 2 - Recommended Infrastructure
Runway Approach / Safety Area /Protection Zones	71 -75	23 – 25
Pavement Condition - Airfield	67 – 70	—
Pavement Construction/Expansion/Modifications - Runway	61 – 66	16 - 22
Visual Navigational Aids/Other Part 77 Obstructions	58 – 60	—
Airfield Lighting & Signage – Runway	55 – 57	14 – 15
Instrument Navigational Aids/Weather Reporting Equip	50 – 54	9 – 13
Pavement Construction/Expansion/Modifications – Taxiway & Apron	44 – 49	7 – 8
Terminal Building	41 – 43	6
Airfield Lighting & Signage – Taxiway & Apron	35 – 40	3 – 5
Ground Communication	33 – 34	2
Approach Lighting	31 – 32	1
Aircraft Rescue & Fire Fighting Equipment	30	—
Storage Buildings	28 – 29	—
Wildlife Safety & Security Fencing	27	—
Aircraft Fuel Facilities	26	—





# Aviation – FAA ACIP Rating

**Definition:** Federal Aviation Administration Airport Capital Improvement Plan (ACIP) rating.

**Why use this criteria:** The ACIP rating serves as the primary planning tool for the FAA for systematically identifying, prioritizing and assigning funds to critical airport development and associated capital needs for the National Airspace System (NAS).

**Sources:**

- Federal Aviation Regulation (FAR) Order 5100.39
- Airport Capital Improvement Plan

**Scores adjusted to 75 point scale to match Division of Aviation project rating.**

**Recommended Weights:** 40% Statewide, 20% Regional, 10% Division



# FAA Airport CIP Point Matrix

Category	NPIAS-ACIP Standard Descriptions, ACIP Codes, and National Priority Ratings Project Description	Airport Code			
		A	B	C	D
		5	4	3	2
<b>Equipment</b>	Acquire Aircraft Rescue and Fire Fighting Vehicle [Part 139 only]	98	95	93	90
<b>Runways</b>	Apply Friction Course/Groove Pavement	86	84	82	80
	Construct (environmental mitigation)	76	74	72	70
	Rehabilitate	72	70	68	66
	Rehabilitate (Lighting/Electrical Vault)	72	70	68	66
<b>Taxiways</b>	Rehabilitate	68	66	64	62
	Rehabilitate Taxiway (Lighting)	68	66	64	62
<b>Apron</b>	Construct (environmental mitigation)	66	64	62	60
	Rehabilitate	62	60	58	56
	Construct	56	54	52	50
<b>Runways</b>	Construct/Extend/Improve Safety Area (Non-Primary Airports)	50	48	47	45
	Install Lighting (HIRL, MIRL, TDZ, LAHSO or CL)	50	48	47	45
	Extend/Widen/Strengthen to meet standards	50	48	47	45
<b>Taxiways</b>	Construct (includes relocation)	50	49	47	46
	Install Lighting (e.g., SMGCS, reflectors, MITL)	47	45	44	42
<b>New Airports</b>	Construct	44	43	41	40
<b>Equipment</b>	Acquire Aircraft Rescue and Fire Fighting Safety Equipment (Not part 139)	41	40	38	37
<b>Terminal Development</b>	Expand Terminal Building	40	39	37	35
	Construct Terminal Building	40	38	37	35
<b>New Airports</b>	Acquire (existing) Airport	35	34	32	31
<b>Buildings</b>	Construct/Expand/Improve/Modify/Rehabilitate	34	32	31	29

**Airport Code:** Primary Commercial Service Airports

A – Large and Medium Hub

B – Small and Non Hub

Non Primary Commercial Service, Reliever, and General Airports

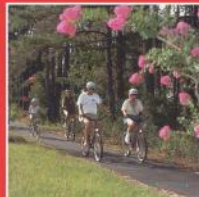
Based Aircraft or Itinerant Operations

A – 100 or 50,000

C – 20 or 8,000

B – 50 or 20,000

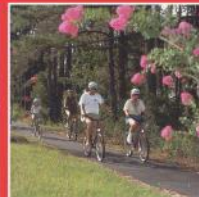
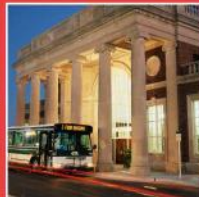
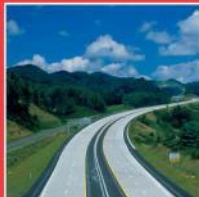
D – <20 and <8,000



**See Handouts  
in Package**

[illegible]





# Aviation – FAA ACIP - Equation

**Priority Equation =  $[k5 \cdot P \cdot (k1 \cdot A + k2 \cdot P + k3 \cdot C + k4 \cdot T)] \times 0.75$**

A = Large and Medium Hub = 5 points

B = Small and Non Hub = 4 points

**Priority Number =  $.25P(A + 1.4P + C + 1.2T)$  Non-Primary Commercial**

K1	=	1.00
K2	=	1.40
K3	=	1.00
K4	=	1.20
K5	=	0.25
K6	=	0.00



## Aviation – Local Investment Index

**Definition:** Provides greater points for those projects that have a higher % of local funding sources (*i.e. local, FAA NPE or public-private funds*)

**Why use this criteria:** Lessens burden on state capital dollars and measures financial commitment of the airport to the project

**Source:** Quantified at project request stage by the airport sponsor

**Scoring:** Number of points based on % of local funds compared to state funds toward the project. Examples:

Project Cost	FAA Funds	State Funds	Local Funds	State Share	Points Awarded
\$1,000,000	\$0	\$900,000	\$100,000	90%	10
\$1,000,000	\$0	\$800,000	\$200,000	80%	20
\$4,000,000	\$3,100,000	\$500,000	\$400,000	56%	44

**Recommended Weights:** 10% Statewide, 5% Regional, 5% Division



# Aviation – Federal Investment Index

**Definition:** A measurement of the project's federal funds compared to state funds, and provides greater points for projects with higher % of federal funds vs. state funds

**Why use this criteria:** To prioritize projects with greater return on investment for state funding participation

**How it is measured:** Federal participation for the project compared to state participation toward the project cost

**Sources:**

- FAA Airport Improvement Program
- NCDOA
- Airport Capital Improvement Plan

**Scoring:** Range of points depending on ratio of federal to state investment

**Recommended Weights:** 10% Statewide, 5% Regional





# Aviation – Federal Investment Index

Project Cost	FAA Funds	State Funds	Local Funds	State Share	Points Awarded
\$500,000	\$0	\$450,000	\$50,000	100%	0
\$1,000,000	\$700,000	\$200,000	\$100,000	22%	78
\$4,000,000	\$3,300,000	\$300,000	\$400,000	8%	92
\$6,000,000	\$4,900,000	\$500,000	\$600,000	9%	91



# Aviation – Volume/Demand Index

**Definition:** Index representing traffic (aircraft operations) plus employment density (jobs near the airport)

**Why use this criteria:** Identifies projects where there is more traffic and in areas with more user demand

**How it is measured:** Based aircraft, aircraft operations, recorded Instrument Flight Rule operations, and employees within 10 miles or 15 minute average daily drive time of the airport

**Sources:**

– NCDOT GIS	– FAA Criteria
– U.S. Census	– NC Airport System Plan

**Scoring on a 100-point scale:** Range of points – 20 to 100

**Recommended Weight:** 5% Division



# Aviation – Volume/Demand Index

Measure	Point Range	Weight
BA = Based Aircraft	1 - 5	40%
TO = Total Operations	1 - 5	20%
IO = Instrument Flight Rules Operations	1 - 5	20%
ED = Employment Density	1 - 5	20%

**Index Formula:**

**Total Points = [(BA x 40%) + (TO x 20%) + (IO x 20%) + (ED x 20%)] x 20**





## Aviation – Volume/Demand

Based Aircraft (BA)	Points
≥ 100	5
50 – 99	4
25 – 49	3
10 – 24	2
0 – 9	1

Total Operations (TO)	Points
≥ 75 K	5
≥ 50 K	4
≥ 20 K	3
≥ 10 K	2
0 – 9,999	1

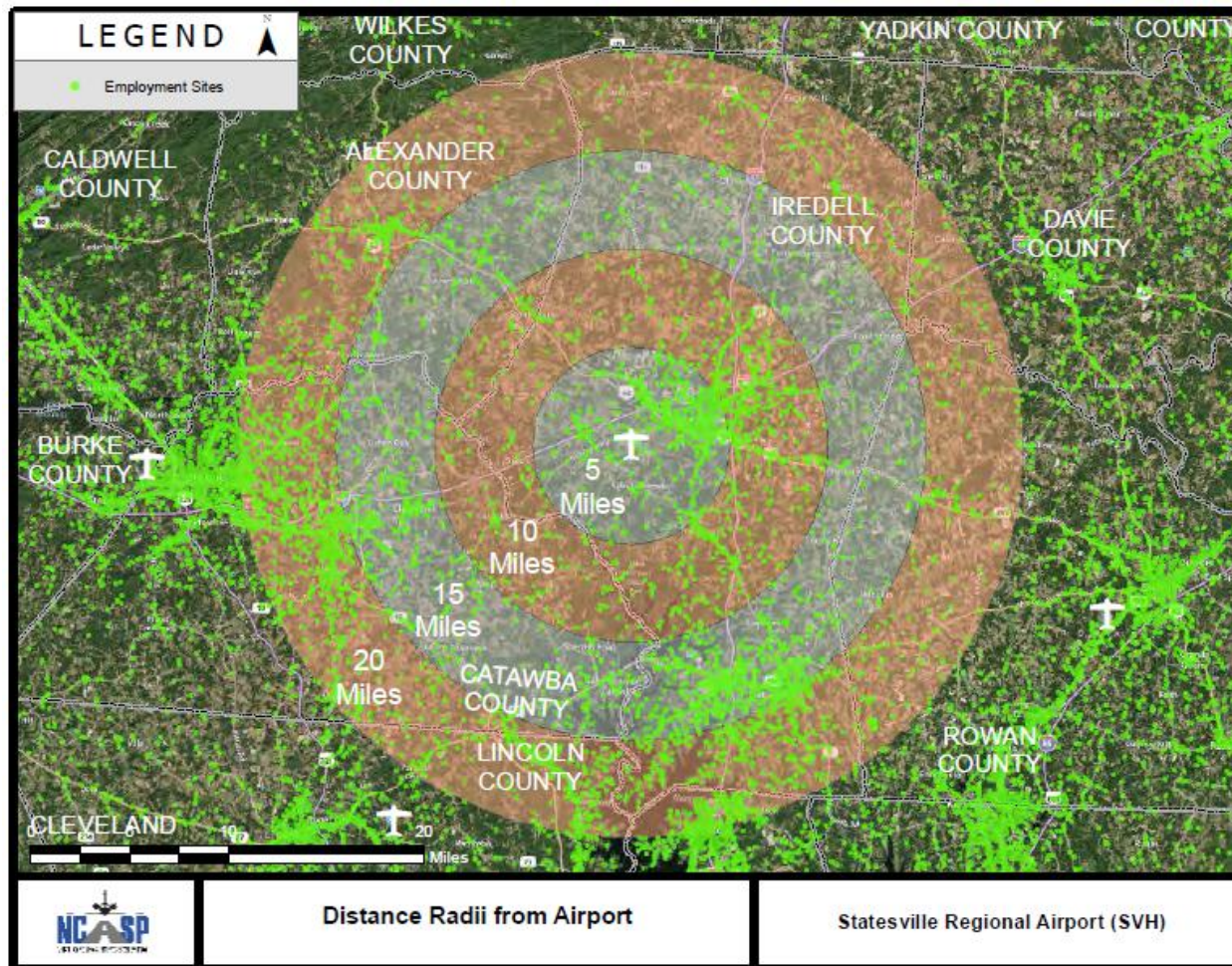
Instrument Flight Rules (IFR) Operations (IO)	Points
≥ 25 K	5
≥ 10 K	4
≥ 2 K	3
≥ 1 K	2
0 - 999	1

10 Mile Employ Den (ED)	Points
≥ 80 K	5
≥ 40 K	4
≥ 20 K	3
≥ 10 K	2
< 10 K	1

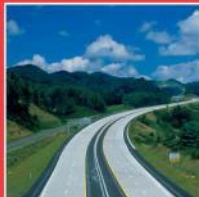
IFR flight plans are filed with the FAA and the quantity is measured by the airport facility.



# Aviation – Demand (Employment Density)







# Aviation Project Scoring Example 1

See Handouts  
in Package

Project and Airport Info					NCDOA Development Category Criteria			FAA ACIP Criteria (FAA Order 5100.39A)
Fund Eligibility	Project Description	Airport ID	Airport	Cost	NCDOT Development Category	NCDOT Dev. Cat Priority	NCDOA Rating Points	FAA ACIP Model Criteria Points (*Total)
							(Weighted 40% of Project Score)	(Weighted 40% of Project Score)
Statewide	TAXIWAY M EXTENSION	GSO	Piedmont Triad Int'l	\$ 12,000,000	PAVEMENT CONSTRUCTION/ EXPANSION	1	48	39
							(Weighted 40% of Project Score)	(Weighted 20% of Project Score)
Regional	APRON EXPANSION	PGV	Pitt-Greenville	\$ 1,460,000	AIRCRAFT/ APRON	1	47	34
							(Weighted 30% of Project Score)	(Weighted 10% of Project Score)
Division	LAND FOR RUNWAY PROTECTION ZONE	SUT	Cape Fear Regional Jetport	\$ 2,000,000	RUNWAY PROTECTION ZONES	1	71	33





# Aviation Project Scoring Example 2

Project and Airport Info					Local Invest Index		Federal Invest Index		Airport Users Index	Total Score
Fund Eligibility	Project Description	Airport ID	Airport	Cost	State to Local Investment %	Local Investment Points	State to Federal Investment %	Federal Investment Points	Volume/ Demand Points	Weighted Project Score (per Eligibility Fund)
						(Weighted 10% of Project Score)		(Weighted 10% of Total Score)	n/a	Max Statewide Points = 100
Statewide	TAXIWAY M EXTENSION	GSO	Piedmont Triad Int'l	\$12,000,000	29%	71	4.9%	95	n/a	51.5
						(Weighted 5% of Project Score)		(Weighted 5% of Project Score)	n/a	Max Regional Points = 70
Regional	APRON EXPANSION	PGV	Pitt-Greenville	\$1,460,000	67%	33	29.6%	70	n/a	30.8
						(Weighted 5% of Project Score)		n/a	(Weighted 5% of Project Score)	Max Division Points = 50
Division	LAND FOR RUNWAY PROTECTION ZONE	SUT	Cape Fear Regional Jetport	\$2,000,000	90%	10	n/a	n/a	64	28.3



# Proposed Aviation Criteria

Criteria	Statewide Mobility	Regional Impacts	Division Needs
	% Wt	% Wt	% Wt
Division of Aviation Project Rating	40	40	30
FAA ACIP Rating	40	20	10
Local Investment Index	10	5	5
Federal Investment Index	10	5	
Volume/Demand Index			5
	100%	70%	50%