

Burlington International Airport Airport Master Plan Update

Regional Advisory Committee Meeting # 2

November 13, 2018

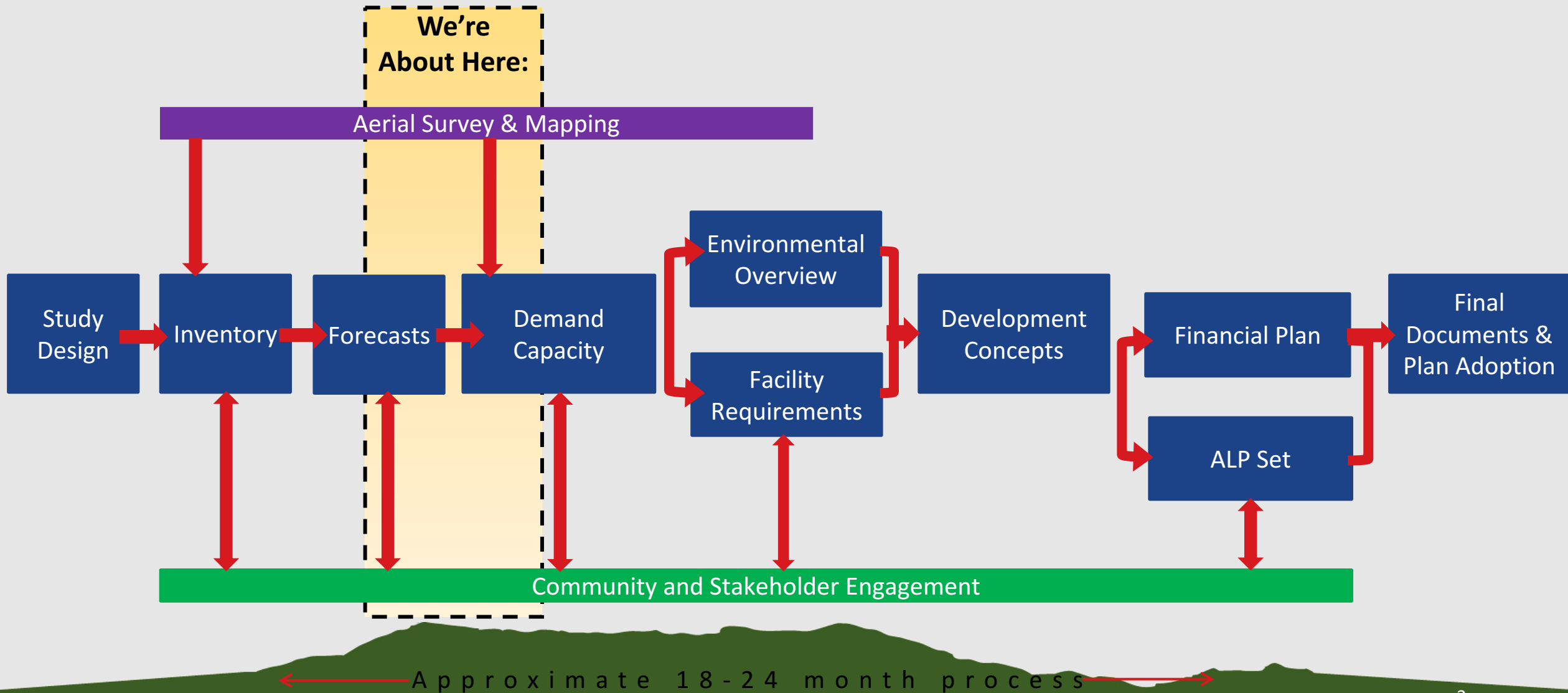


AGENDA

- Introductions
- Status of the Master Plan Update
- SWOT Analysis
- Inventory Summary
- Forecast Summary
- Next Steps



STATUS OF AIRPORT MASTER PLAN



SWOT ANALYSIS



AIRPORT MASTER PLAN – SWOT Analysis

- Obtained Input to:
 - (S) Strengths – things BTV does well
 - (W) Weaknesses – resource limitations
 - (O) Opportunities – emerging need
 - (T) Threats – external forces/limitations
- Joint Findings



PRELIMINARY FINDINGS – STRENGTHS

- Partnership with Vermont Air National Guard (T/R)
- Existing Airline Service/Diversity (T/R)
- Convenience: Airport Location/Destination/Travelers to Region (T/R)
- Operations: Snow Removal/Remaining Open (T)
- Training: ATC/Maintenance/Pilots (T)
- Business Economic Driver (R)
- Resources for Vermonter to Travel (R)



PRELIMINARY FINDINGS – WEAKNESSES

- Ground Access – Local/Highway (T/R)
- Terminal Congestion (T)
- Location of Tenants vs. Taxiway Configuration (T)
- Runway 1-19 Configuration (T)
- ATC Hours/Physical Taxiway (T)
- Governance/Skewed Ownership and Management Structure to Community Affairs (R)
- Community Relations (R)
- Single TSA – Disjointed Configuration (R)
- Location – Encroaching Proximity to Dense Population (R)



PRELIMINARY FINDINGS – OPPORTUNITIES

- Community Relations/Improve Communications (T/R)
- Access Road Improvements (T)
- Grow General Aviation (T)
- Separate Cargo Operations Area (T)
- TSA Central Location (T)
- Infrastructure Meeting FAA Design (T)
- Economic Driver for Growth (R)
- Governance (R)
- What Economic Impact Is and Local Resources from communities (R)
- Increase safety/Reduce Risk – e.g. additional flight hours for military jets before basing (R)



PRELIMINARY FINDINGS – THREATS

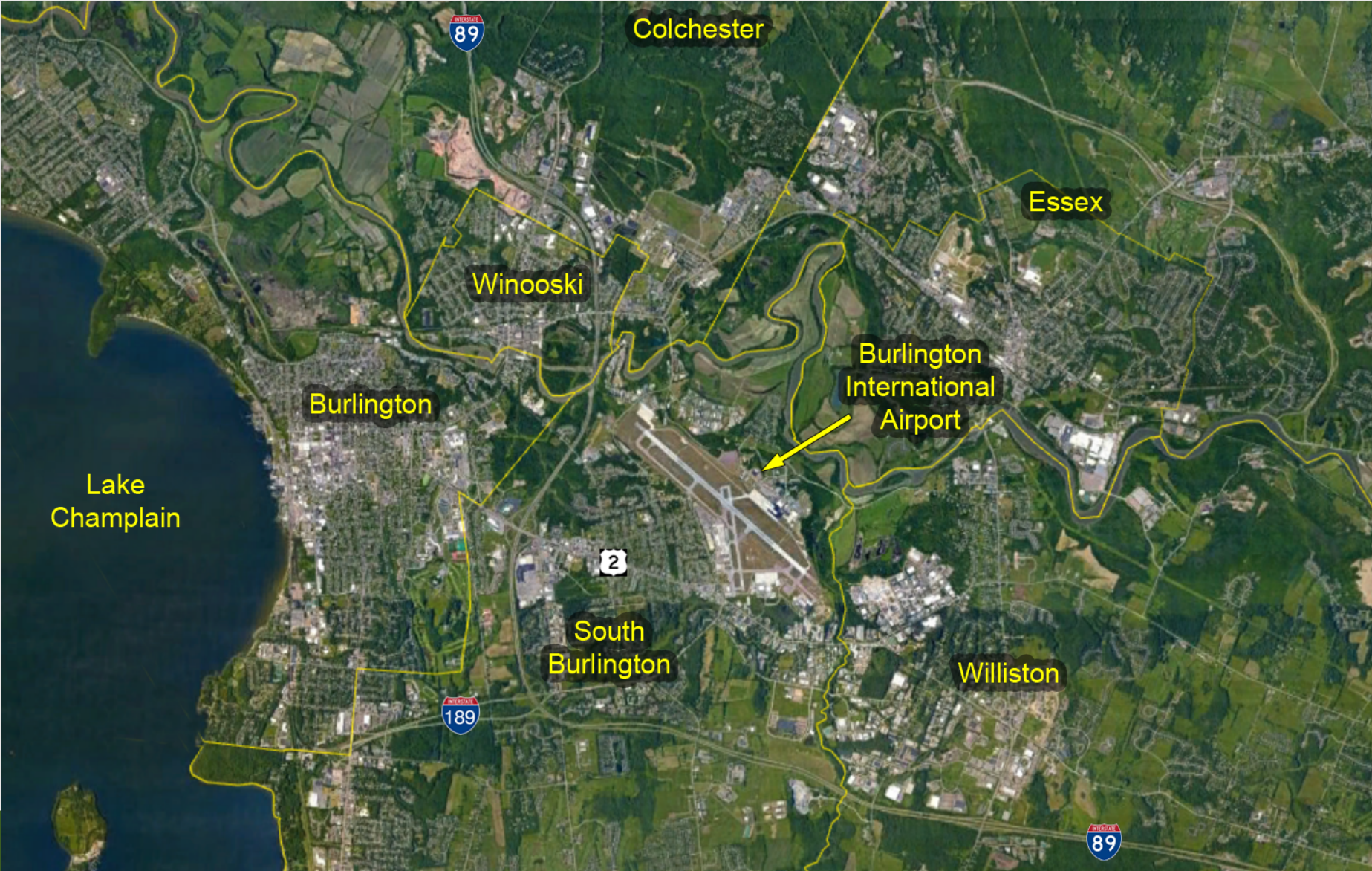
- Terminal Space/Congestion (T/R)
- Space for Tenants (T)
- Rehabilitate 15-33 (T)
- Parking (T)
- Security (T)
- Ground Access (T)
- Funding – Maintenance of Facility (R)
- Anything that Threatens VTANG Presence (R)
- International Changes - Exchange Rate, Border Customs, International Flight Rules (R)
- Increased Airline Fees (R)



AIRPORT INVENTORY



AIRPORT LOCATION & MUNICIPALITIES



KEY AIRPORT FEATURES

- Largest airport in Vermont
- Currently served by five airlines
- Covers 942 acres
- Two Active Runways
 - Runway 15-33
 - Runway 1-19
- Air National Guard
- Cargo Operations
 - FedEx
 - Wiggins Airways

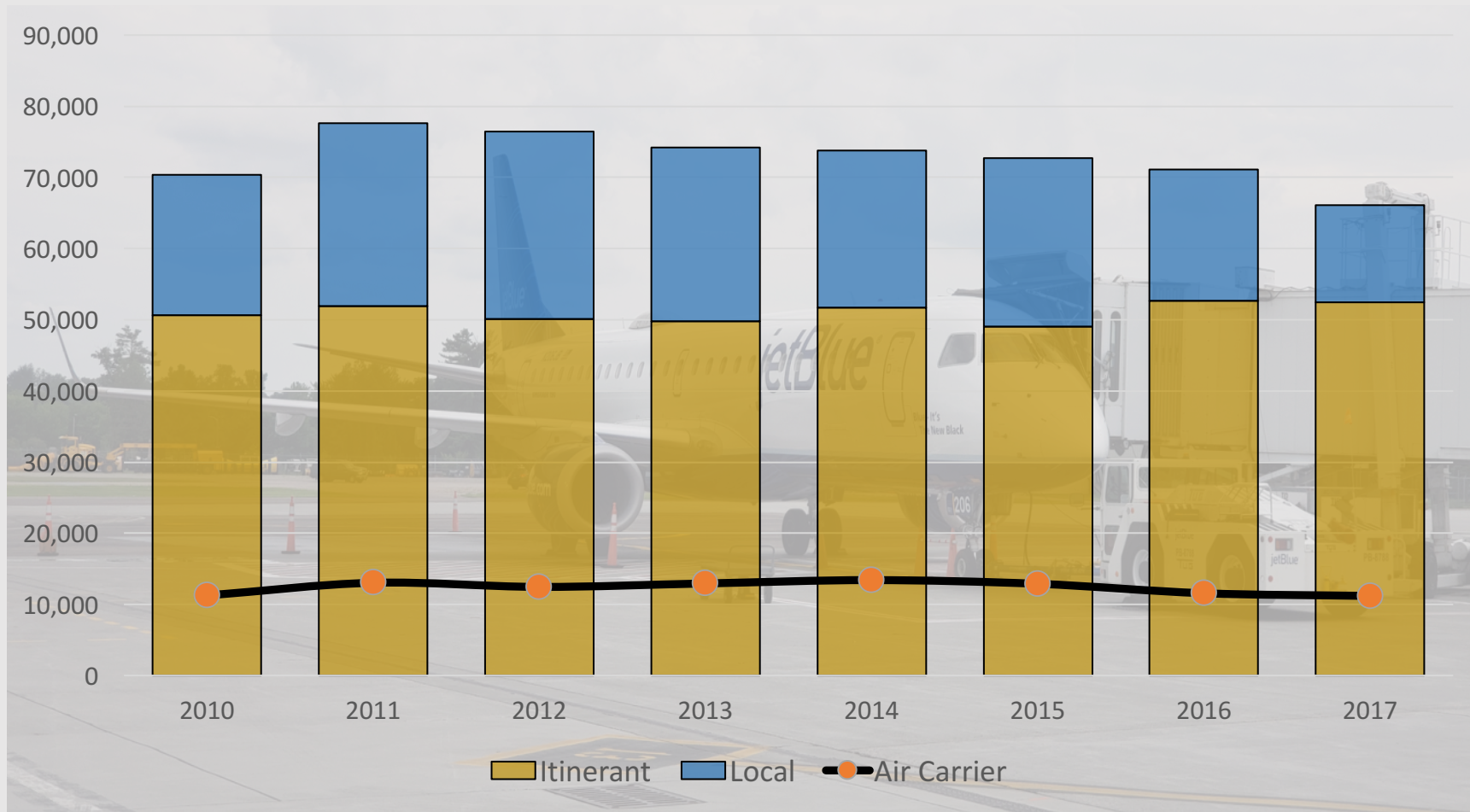


Airport Service Area

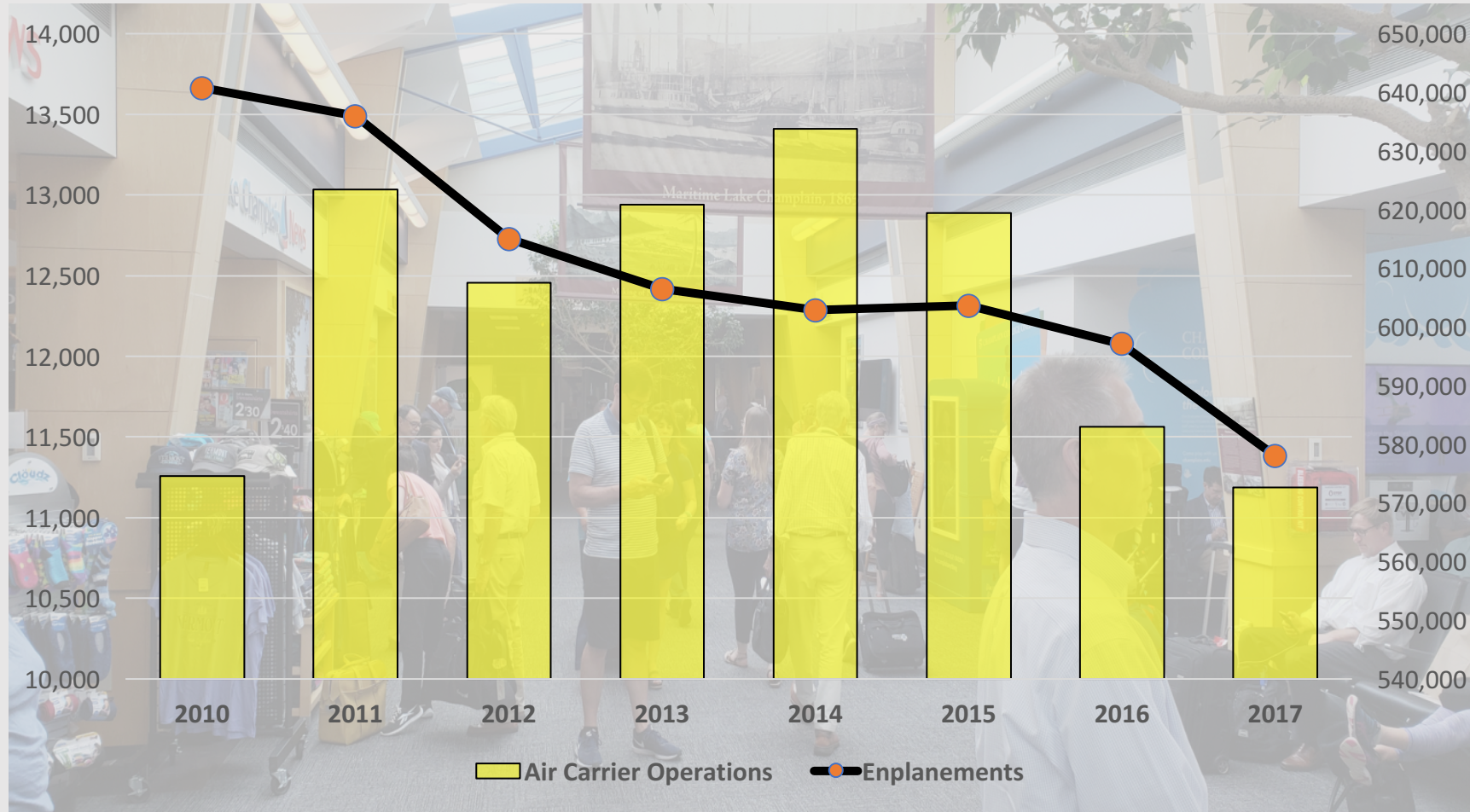
- Geographic area the airport can reasonably expect to draw commercial air service passengers.
- For BTV – Average 1.5 hour drive time
- Estimated Population in Service Area – 600,000 (442,000 in US)
- Four Airport's on the fringe of BTV Service Area

| Airport | ID | Location | Distance Miles (Hours: Minutes) | Annual Enplanements (2017) | Airlines | Average Daily Commercial Departures |
|----------------------------------|-----|-------------------|------------------------------------|-------------------------------|----------|-------------------------------------|
| Burlington International | BTV | S. Burlington, VT | N/A | 578,000 | 5 | 78 |
| Plattsburgh International | PBG | Plattsburgh, NY | 38 (1:26) | 139,400 | 3 | 35 |
| Montreal International | YUL | Montreal, QU | 104 (2:00) | 9,080,000 | 64 | 517 |
| Lebanon Municipal | LEB | Lebanon, NH | 89 (1:36) | 10,400 | 1 | 6 |
| Rutland-Southern Vermont | RUT | Rutland, VT | 72 (1:50) | 5,000 | 1 | 3 |

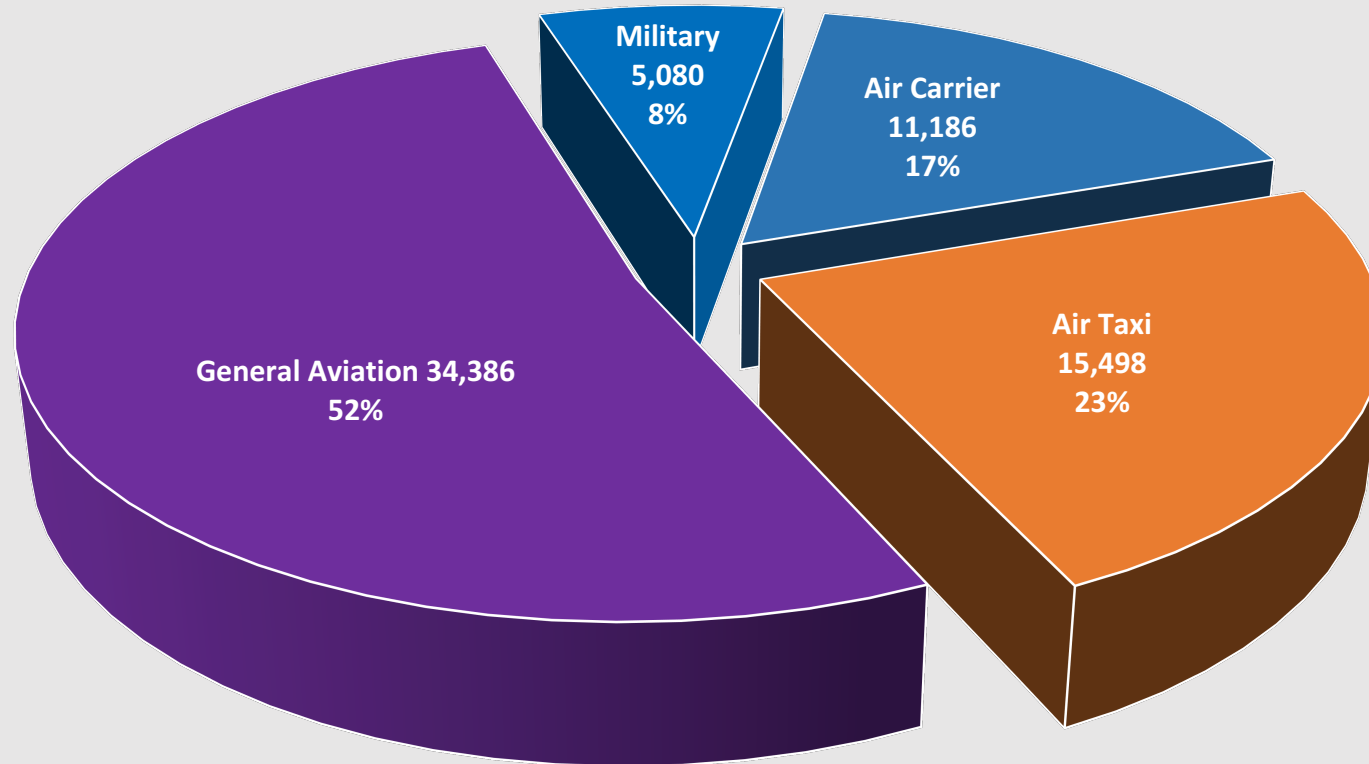
Aircraft Operations (takeoffs & landings)



Revenue Passenger Enplanements



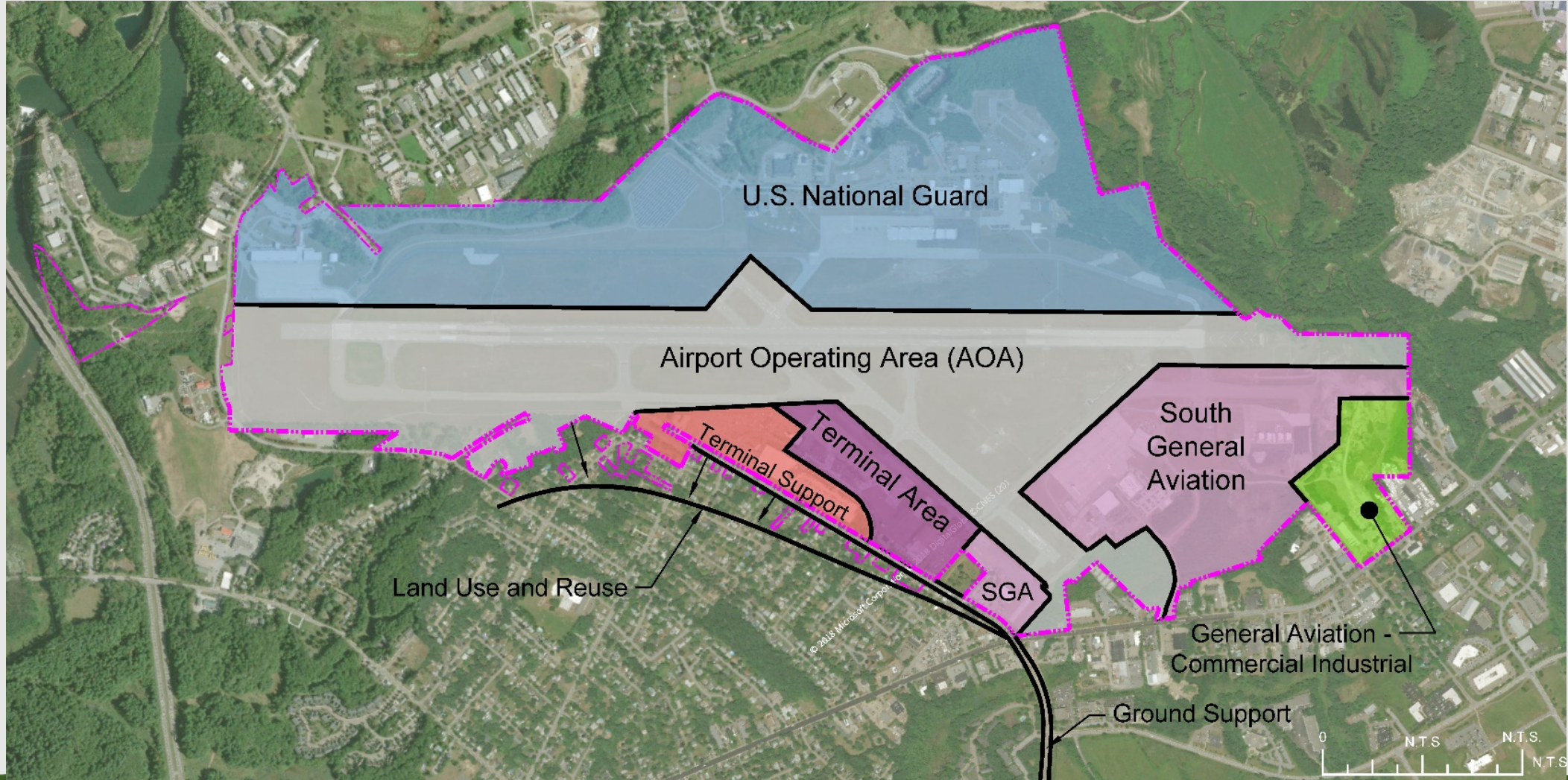
Operations 2017 Breakout



AIRPORT ACCESS



Airport Development Areas



Airside Facilities

RUNWAY 15-33

- Primary Runway
- Commercial & Military
- 8,319' x 150'
- Displaced Threshold
 - RWY 33 (500')
 - Reduced Takeoff & Land RWY 15
 - Reduced Landing RWY 33
- Approach Lighting
- IAP RWY 15 & 33

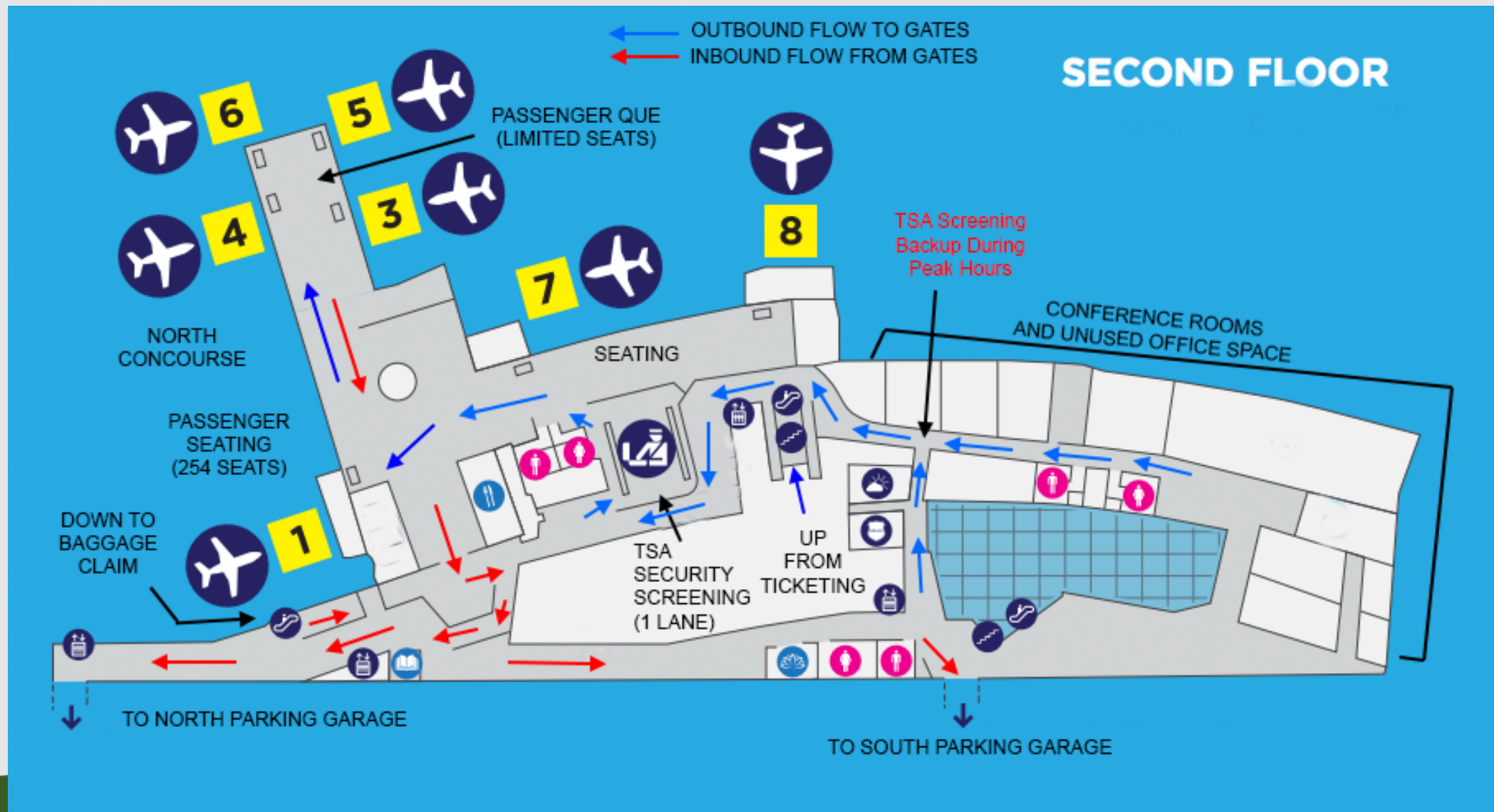
RUNWAY 1-19

- Secondary/Crosswind
- General Aviation
- 4,112' x 75'
- Displaced Threshold
 - RWY 01 (225')
 - RWY 19 (500')
- IAP RWY 01

Terminal Area

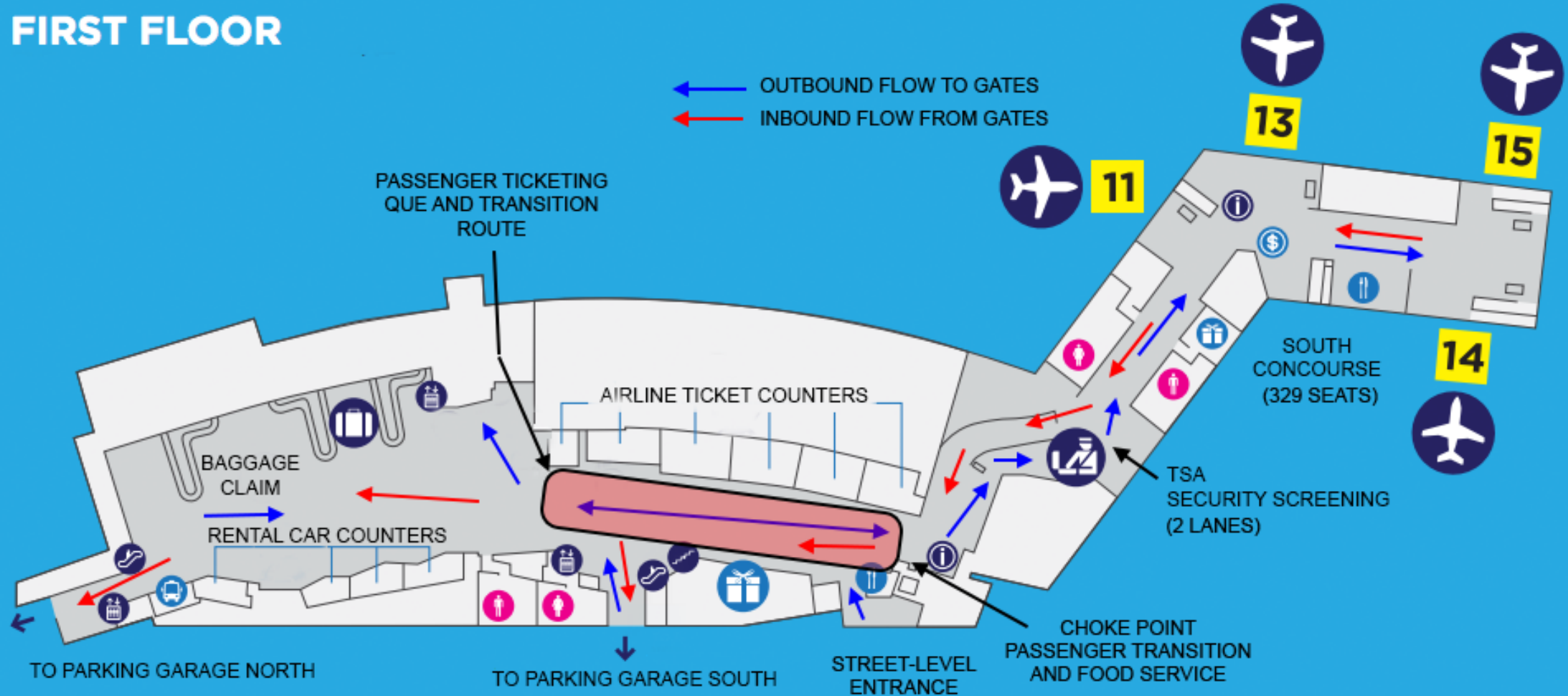


North Concourse



South Concourse

FIRST FLOOR



Terminal Building

North Concourse

- Second Level
- 47,600 FT²
- United & American Airlines
- Airport and Airline Offices,
Conference Rooms
- TSA Checkpoint

South Concourse

- Ground Level
- 92,000 FT²
- Delta, JetBlue & Porter Airlines
- TSA Checkpoint

Passenger Flow & Choke Points

- Peak Hours

- Departures

- 5:30 to 8:00 am
 - 11:00 am to 3:00 pm
 - 5:00 to 7:00 pm

- Arrivals

- 11:00 am to 1:00 pm
 - 5:00 to 6:00 pm
 - 10:00 pm to Midnight

**Peak Passenger Activity
Between Noon and 7 pm**



August 8, 2018 – 4:30 pm

Ticketing Area



FORECAST SUMMARY



ACTIVITY DEMAND FORECAST

- What is a Forecast?
 - 5, 10, and 20-year estimates of aviation activity at the Airport
 - Incorporates the effects of socio-economic conditions, and industry trends
 - One of the Master Plan elements “approved” by the FAA
- How is it Used?
 - Influences all phases of the facility and financial planning processes
 - Provides a basis for determining type, size, and timing of airport facility development
 - Used as support for funding Airport improvements
- What is the process?



WHAT IS THE FORECAST PROCESS?



AERONAUTICAL FORECASTS

- Enplaned Passengers
 - 5-, 10- and 20-year forecast
 - Load Factors
- Air Carrier Activity:
 - Operations
 - Fleet Mix
- Air Cargo Activity
 - Volume
 - Operations
- General Aviation Activity
 - Based Aircraft
 - Operations
- Military Aviation Activity
 - Based Aircraft
 - Operations
- Peak Activity
 - Passengers
 - Operations

FORECAST METHODOLOGY

- **Regression Analysis** – Demographic projections for the Airport's catchment area are used to estimate growth
- **Time Trend** – Continued historical growth is applied to project activity trends
- **Market Share** – BTV market share percentage of national activity is used to estimate growth
- **FAA Terminal Area Forecast (TAF)** – Aeronautical forecast published by the Federal Aviation Administration

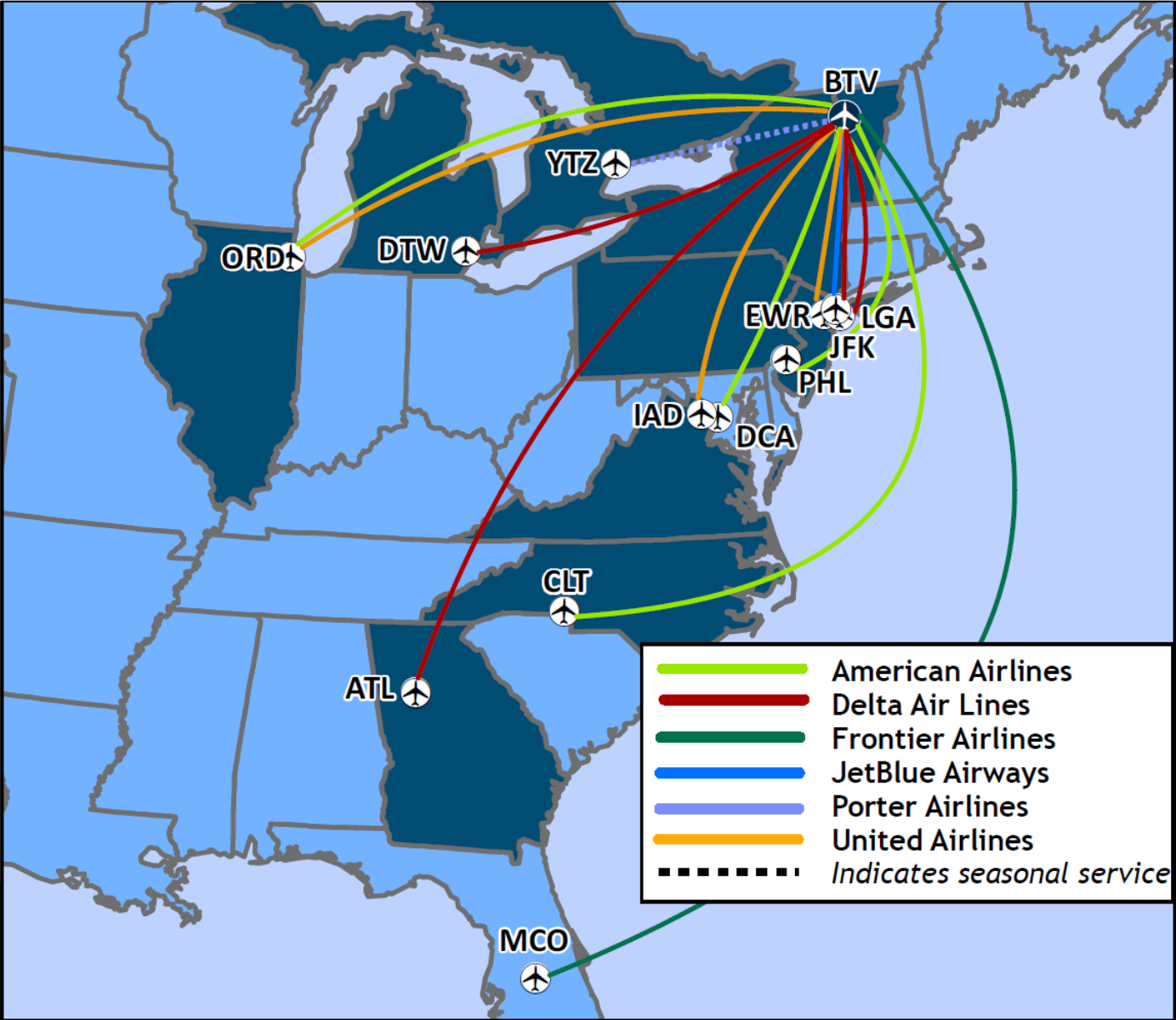
FAA TERMINAL AREA FORECAST

2018 FAA Terminal Area Forecast (TAF)

| Year | Enplanements | Operations | Based Aircraft |
|--------|--------------|------------|----------------|
| 2017 | 585,099 | 26,677 | 115 |
| 2018 | 635,407 | 28,371 | 116 |
| 2023 | 665,850 | 22,465 | 123 |
| 2028 | 693,485 | 23,278 | 133 |
| 2033 | 721,769 | 24,296 | 143 |
| 2038 | 749,730 | 25,321 | 153 |
| AAGR | 0.8% | -2.8% | 1.4% |
| GROWTH | 18.0% | -8.1% | 31.9% |

- Baseline year of the forecast is 2017
- The FAA TAF is considered to be the baseline metric that all Master Plan forecasts are compared with
- TAF considers socioeconomic and demographic factors, general industry trends, and regional commercial service growth

BTV ROUTE MAP



MCO route begins February 9, 2019

MASTER PLAN PROJECTED ENPLANEMENT SCENARIOS

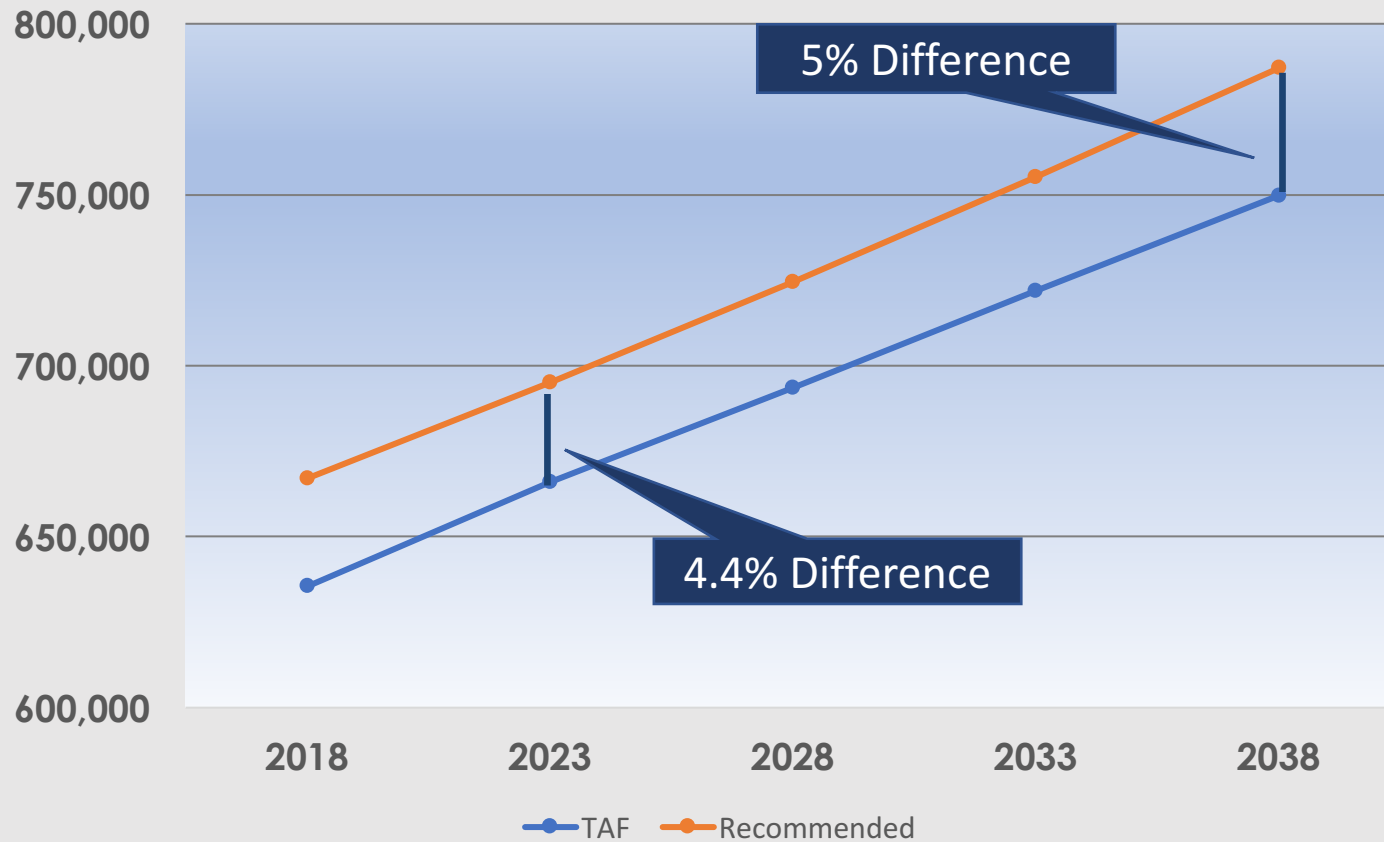
| Year | TAF | 10-Year Historic Time Series | Static National Market Share | Population- Based Regression | Employment -Based Regression | Income- Based Regression | Extrapolated Population Econometric | Extrapolated TAF |
|--------------------|-----|------------------------------------|---------------------------------------|------------------------------------|------------------------------------|--------------------------------|-------------------------------------------|---------------------|
| RECOMMENDED | | | | | | | | 667,004 |
| | | | | | | | | 695,171 |
| | | | | | | | | 724,528 |
| | | | | | | | | 755,124 |
| | | | | | | | | 787,012 |
| | | | | | | | | 0.8% |
| | | | | | | | | 18.0% |

RECOMMENDED ENPLANEMENT FORECAST vs. TAF

| Year | TAF | Recommended | Recommended vs. TAF |
|---------------|--------------|--------------|---------------------|
| 2017 | 585,099 | 591,558 | 1.1% |
| 2018 | 635,407 | 667,004 | 5.0% |
| 2023 | 665,850 | 695,171 | 4.4% |
| 2028 | 693,485 | 724,528 | 4.5% |
| 2033 | 721,769 | 755,124 | 4.6% |
| 2038 | 749,730 | 787,012 | 5.0% |
| AAGR | 0.8% | 0.8% | - |
| GROWTH | 18.0% | 18.0% | - |

RECOMMENDED FORECAST

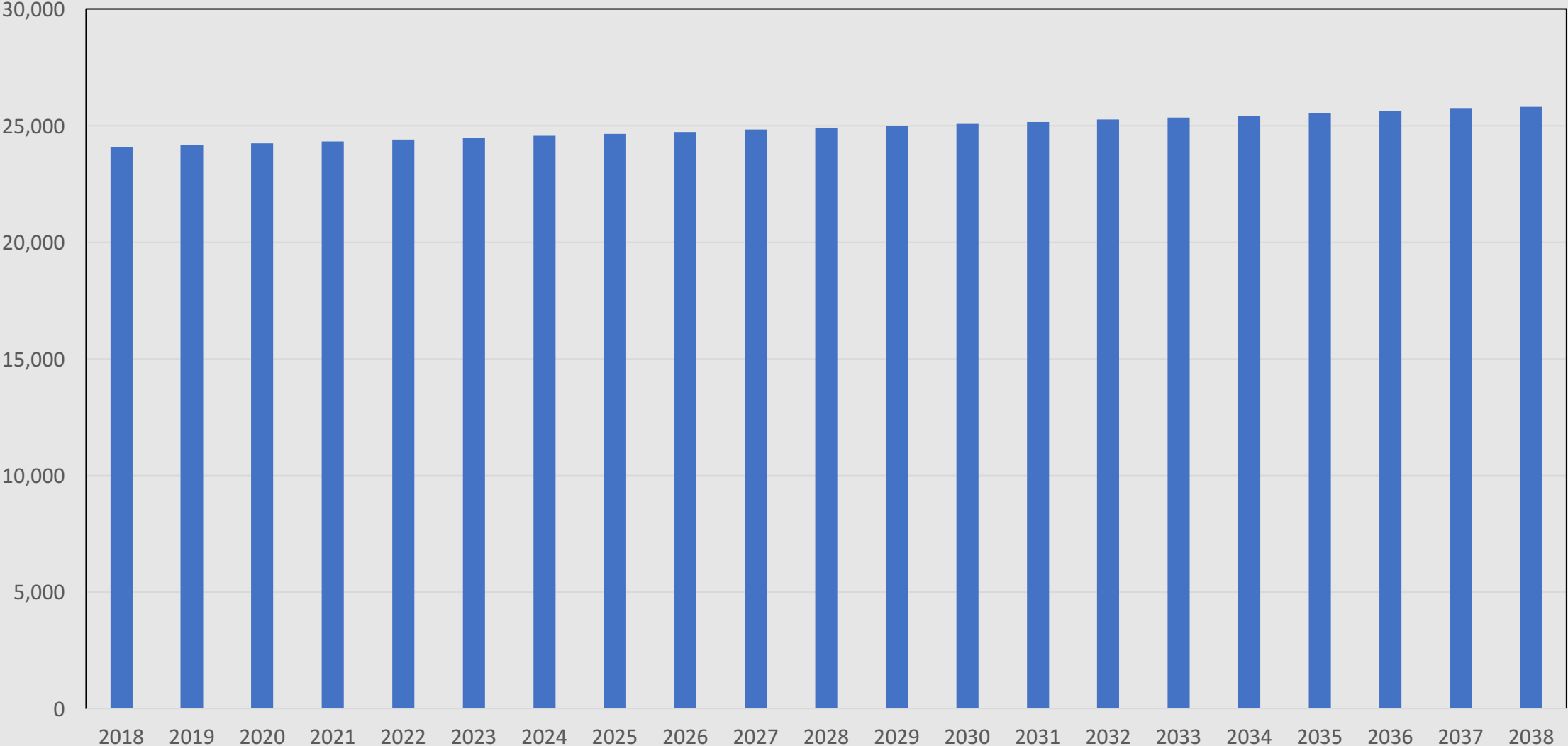
Enplanements Forecast – TAF vs. Recommended



RECOMMENDED COMMERCIAL FORECAST

| Year | Enplanements | Operations | Average Seats per Departure | Load Factor |
|---------------|--------------|-------------|-----------------------------|-------------|
| 2017 | 591,558 | 21,448 | 68.0 | 79.3% |
| 2018 | 667,004 | 24,082 | 68.9 | 80.4% |
| 2023 | 695,171 | 24,480 | 69.5 | 81.7% |
| 2028 | 724,528 | 24,899 | 70.3 | 82.7% |
| 2033 | 755,124 | 25,340 | 71.4 | 83.4% |
| 2038 | 787,012 | 25,804 | 72.7 | 83.9% |
| AAGR | 0.8% | 0.3% | 0.3% | 0.2% |
| GROWTH | 18.0% | 7.1% | 5.5% | 4.4% |

BTV ESTIMATED COMMERCIAL OPERATIONS



BTV AIR CARGO FORECASTS

| Air Cargo Volume (pounds) | | | | | |
|---------------------------|--------------------|-----------------|-----------------|---------------------|------------------------|
| Year | National FAA | National Boeing | National Airbus | Recommended Average | Recommended Operations |
| 2017 | RECOMMENDED | | | 10,726,000 | 525 |
| 2018 | | | | 10,929,436 | 535 |
| 2023 | | | | 12,005,976 | 588 |
| 2028 | | | | 13,188,554 | 646 |
| 2033 | | | | 14,487,616 | 709 |
| 2038 | | | | 15,914,634 | 779 |
| AAGR 2018-2038 | | | | 1.9% | 1.9% |
| Growth 2018-2038 | | | | 45.6% | 45.6% |

BASED AIRCRAFT FORECAST COMPARISON

| Year | FAA TAF | Adjusted TAF | FAA Aerospace | Market Share | | |
|---------------------|---------|--------------|---------------|-----------------|-----------------|--------------|
| | | | | Static National | Static Regional | Static State |
| 2017 | | | | | 92 | |
| 2018 | | | | | 93 | |
| 2023 | | | | | 97 | |
| 2028 | | | | | 102 | |
| 2033 | | | | | 106 | |
| 2038 | | | | | 111 | |
| AAGR 2018-2038 | | | | | 0.9% | |
| Growth 2018-2038 | | | | | 19.7% | |

RECOMMENDED

GENERAL AVIATION OPERATIONS FORECAST COMPARISON

| Year | FAA TAF | 10-Year Historical | OPBA | Market Share | | |
|-----------------------------|---------|--------------------|--------------|--------------------|-----------------|--------------|
| | | | | Static National | Static Regional | Static State |
| 2017 | | | 38,671 | RECOMMENDED | | |
| 2018 | | | 39,005 | | | |
| 2023 | | | 40,864 | | | |
| 2028 | | | 42,743 | | | |
| 2033 | | | 44,647 | | | |
| 2038 | | | 46,679 | | | |
| AAGR 2018-2038 | | | 0.9% | | | |
| Growth 2018-2038 | | | 19.7% | | | |

GENERAL AVIATION – LOCAL VS ITINERANT

| Year | Operations | | |
|-------------------------|--------------|--------------|--------------|
| | Itinerant | Local | Total GA |
| 2017 | 26,833 | 11,838 | 38,671 |
| 2018 | 27,065 | 11,940 | 39,005 |
| 2023 | 28,355 | 12,509 | 40,864 |
| 2028 | 29,658 | 13,084 | 42,743 |
| 2033 | 30,979 | 13,667 | 44,647 |
| 2038 | 32,390 | 14,289 | 46,679 |
| AAGR 2018-2038 | 0.9% | 0.9% | 0.9% |
| Growth 2018-2038 | 19.7% | 19.7% | 19.7% |

MILITARY OPERATIONS

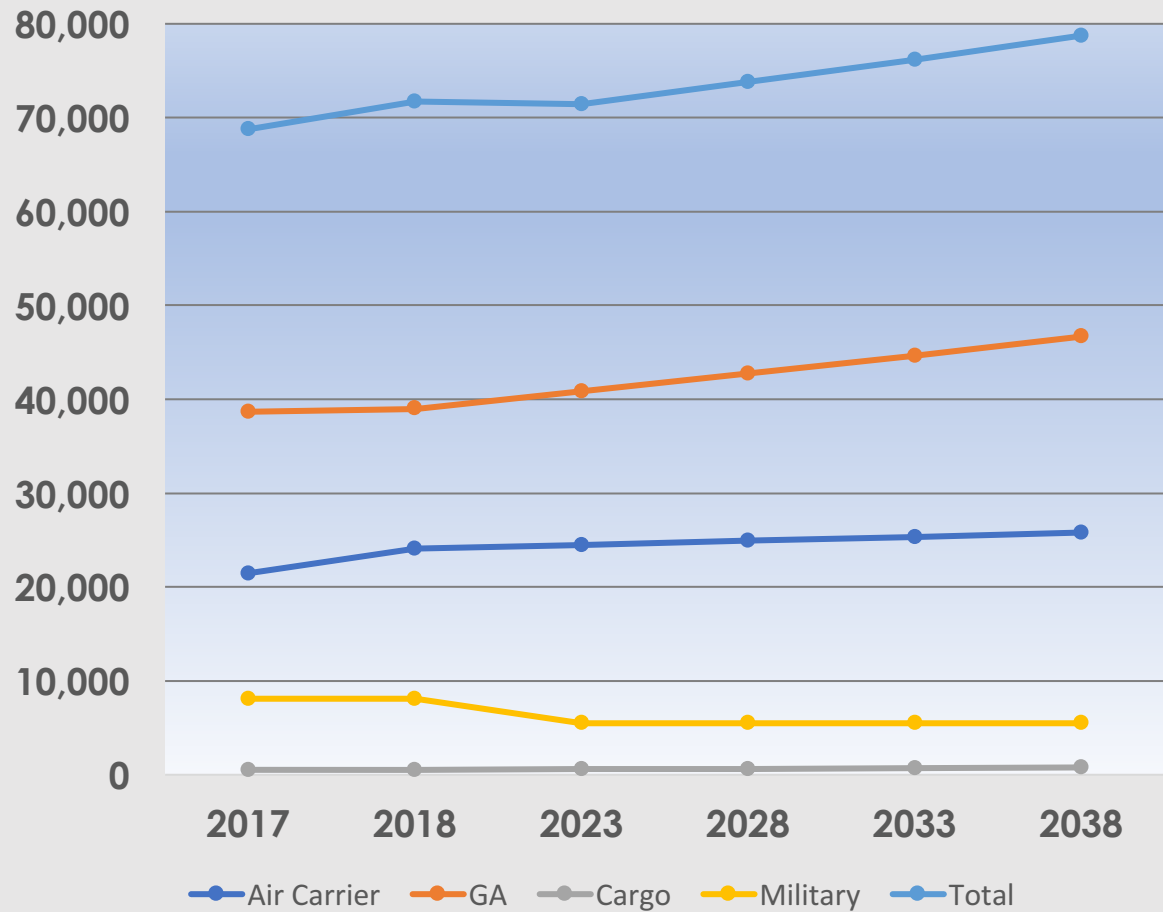
- Burlington Air National Guard
 - Changing from F-16 to F-35 jets
- Military operations forecast provided by US Air Force

| Year | Operations |
|------------------|------------|
| 2017 | 8,099 |
| 2018 | 8,099 |
| 2023 | 5,486 |
| 2028 | 5,486 |
| 2033 | 5,486 |
| 2038 | 5,486 |
| AAGR 2018-2038 | -1.9% |
| Growth 2018-2038 | -32.3% |

RECOMMENDED FORECAST

| Year | Enplanements | Total Operations | | | | | Based Aircraft |
|------------------|--------------|------------------|--------------|--------------|---------------|---------------|----------------|
| | | Air Carrier | GA | Cargo | Military | Total | |
| 2017 | 591,558 | 21,467 | 38,671 | 525 | 8,099 | 68,762 | 92 |
| 2018 | 667,004 | 24,082 | 39,005 | 535 | 8,099 | 71,722 | 93 |
| 2023 | 695,171 | 24,480 | 40,864 | 588 | 5,486 | 71,418 | 97 |
| 2028 | 724,528 | 24,899 | 42,743 | 646 | 5,486 | 73,773 | 102 |
| 2033 | 755,124 | 25,340 | 44,647 | 709 | 5,486 | 76,182 | 106 |
| 2038 | 787,012 | 25,804 | 46,679 | 779 | 5,486 | 78,748 | 111 |
| AAGR | | | | | | | |
| 2018-2038 | 0.8% | 0.3% | 0.9% | 1.9% | -1.9% | 0.5% | 0.9% |
| Growth | | | | | | | |
| 2018-2038 | 18.0% | 7.1% | 19.7% | 45.6% | -32.3% | 9.8% | 19.7% |

OPERATIONS BREAKDOWN



NEXT STEPS

- Working Paper #1 – Collect/Review Comments
- Public Informational Workshop #1
- Passenger Experience Survey
- Economic Impact Assessment
- Prepare Facility Requirement Evaluation – Working Paper #2



QUESTIONS/COMMENTS

Any questions or comments regarding the Airport Master Plan or any of the information discussed today?

PLEASE FILL OUT ONE OF OUR COMMENT FORMS!

Available for contact anytime:

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