Airport Layout Plan Update

Airport Commission Briefing

January 5, 2021
Meeting Agenda

- Director’s Remarks
- Stakeholder Engagement to Date
- Plan Overview and Progress
- Results of Public Surveys
- 2040 Requirements and Alternatives
- Next Steps
- Open Discussion

Thank you for participating!
Director’s Remarks

• **Purpose of ALP Update**
  - Long Range Planning
  - Strategy for Growth
  - Necessary for FAA Grants

• **State of the Industry**

• **State of STL**
  - Rebound of passenger traffic
  - Increase in cargo tonnage
Stakeholder Engagement to Date

Communications with:
Technical Advisory Committee (TAC)
& Airport/Airline Affairs Committee (AAAC)
STL Commission
TAC Role

- Provide advisory input to expectations, alternatives development and implementation strategy:
  - Will provide opinion for ALPU Team to consider when making planning decisions
  - Certain aspects of ALP are technical and FAA process-driven

- Seek out and understand community, operational and technical views

- Comprised of representatives from local, state and federal governmental agencies, organizations, airlines, concessions and private businesses
TAC Members

- Federal Aviation Administration
- Passenger Airlines
- Cargo Airlines
- Ground Services Providers
- General Aviation
- Rental Car Operators
- The Boeing Company
- MoDOT
- St. Louis County
- Mayors’ Representatives
  - City of St. Louis, Bridgeton, St. Ann, Woodson Terrace, St. John
- Bi-State Development
- East West Gateway Coordinating Council
- St. Louis Regional Business Council
- Greater St. Louis Inc. (merged with St. Louis Regional Growth Association & Civic Progress St. Louis)
- St. Louis Economic Development Partnership
- St. Louis Development Corporation
- City of St. Louis
- St. Louis Airport Authority
- WSP Team

40 invitees
AAAC Members

• Air Choice One
• Alaska Airlines
• American Airlines
• Delta Airlines
• Federal Express Corporation
• Frontier Airlines
• Cape Air Airlines

• Southwest Airlines
• Spirit Airlines
• United Airlines
• United Parcel Service
• Lufthansa Airlines (new member)
Airport Commission

• Members:
  – Chaired by Rhonda Hamm-Niebruegge, Director of Airports
  – Comprised of a broad spectrum of regional business, civic and labor leadership

• Role:
  – Provides advisory input for the airport business decisions, including strategic planning and the advisory approval of contracts for airline service, new construction, ongoing maintenance and the many services provided at STL Airport

Commission Briefing #1
October 2020

Commission Briefing #2
January 2022
Public Survey #1 Results

- Survey open from September 4 to October 5, 2020
- Survey focused on understanding traveling patterns, COVID impacts, and terminal / parking related preferences
- Shared on social media platforms, flystl.com, and broadcast by TAC to its constituents
- 511 respondents
- 60% fly Southwest, ~35% flying American, Delta or United
- Improvements most wanted:
  - Dining, check-in, gate area, parking, restrooms, roads, wayfinding, security
  - 55% of respondents would like improvements to arrival/departure experience
  - 50% of respondents would like improvements to dining
  - 32% of respondents would like improvements to technology inside terminal
Public Survey #1 Results

Who is the STL Traveler?
- 60% Use their vehicle to get to the airport
- 70% Arrange 1-2 hours before their flight
- 60% Fly Southwest Airlines most frequently

I would like to see...
- Free WiFi
- Improved Roadway Access
- Familiar Dining Options
- More Promotion of the Region
- More Local Artwork
- More parking in garages
- Better wayfinding

"Improved air service (more direct flights, transatlantic flights,...)"

"Better WiFi, more power outlets, more seating at gates, more artwork... historical info about the region, more promotion about St. Louis."

It would be nice to have more “fast casual restaurants.”

"I’d like to see even more examples of local artists and their work around the airport."

"I am not a seasoned traveler, so signage is my guide. The same would be for people who have a layover or are new to arriving in St. Louis."
Public Survey #2 Results

- Survey open from February 17, 2021 to March 15, 2021
- Survey focused on understanding curbside (pick-up/drop-off) and terminal convenience related preferences
- Shared on social media platforms, flystl.com, and broadcast by TAC to its constituents
- 820 respondents (great response)
- 81% of respondents are/will travel in 2021 for leisure
- 254 unique zip codes responded to the survey

<table>
<thead>
<tr>
<th>Terminal Curbside Improvements Identified:</th>
<th>Preference on Terminals:</th>
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<tbody>
<tr>
<td>• More drop-off, pick-up temporary parking</td>
<td>• 82% of the respondents commented on the number of terminals, and of those, 52% prefer a single terminal</td>
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<td>• Capacity for vehicles</td>
<td>• Connection between terminals is preferred if two remain</td>
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<td>• Uber/Lyft (TNC) drop-off or pick-up areas</td>
<td>• Dropping off and picking up passengers is easier with one terminal</td>
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<td>• Signage</td>
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<td>• Shuttles zones</td>
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<td>• Pedestrian shelters and lighting</td>
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Public Survey #2 Results

- 45% of respondents drive and park
- 43% of those park in private lots

Note: More than one answer was possible
Public Survey #2 Results

- Newly designed terminal arrival and departure routes are needed to enhance the first and last experience of the airport.
- When selecting where to park, cost and convenience off the highway and to the terminal are most important to me.
- I'd love to see more and enhanced dining options as well as more seating at the gates and lots more restrooms in the concourse.
- A single terminal would be much easier to navigate.
Pending Public Survey #3

- Survey will be open for public input for up to 4 weeks
  - Target publication: late January/early February into March 2022
- Shared on social media platforms, flystl.com, and broadcast by TAC members
- QR codes at gates, concourse restaurants, etc.

Questions/survey will focus on collecting:
- Additional details on parking needs (convenience, walking distances, shuttle ride duration)
- Opinions regarding access road improvement needs to the curbside/parking garage
- Opinions regarding concession/restroom space inside a consolidated concourse
- Other/open input
Plan Overview & Progress
Plan Process

1. Facility Condition Assessments
2. Security & Related Infrastructure Assessment
3. Safety Risk Assessments
4. Airport Noise Evaluation
5. Capital Project Priorities/Sequencing
6. Stormwater Planning

- Needs Assessment
  - Inventory of Existing Conditions
  - Aviation Activity Forecasts
  - Facility Requirements Analysis

- Evaluation of Potential Solutions
  - Range of Alternatives
  - Alternatives Evaluation
  - Preferred Alternative

- Refinement of Plan
  - Environmental Review
  - Implementation/Financial Planning
  - Airport Layout Plan Drawings Set

FAA Review and Approval
We are here
Plan Progress

• Needs Assessment (Jan-Aug 2020) - complete
• Evaluation of Potential Solutions - Alternatives Analysis (Fall 2020 / Winter 2021-2022) – in progress
• Refinement of Plan (Winter 2021-2022) – in progress:
  – Preliminary Comprehensive Plan: ongoing
  – Environmental Review: Winter 2022
  – Financial Analysis: Winter 2022
  – Airport Layout Plan Drawings Set Development/Submittal: Winter 2022
• Documentation/Complete (FAA Approval): Summer 2022
Evaluation of Needs and Potential Solutions - Alternatives Analysis
Alternatives Development and Evaluation Process

- Assess facility needs (industry planning standards, tenant/strategic/public survey input)
- Identify potential alternatives for each major function
- Evaluate each alternative
- Identify preferred alternative
Evaluation of Airfield Alternatives
Airfield Alternatives

Needs

- Long-term development strategy:
  - Airfield capacity ✓
  - Runway length ✓
  - Wind coverage & approach capability ✓
  - Design aircraft: ADG IV (Boeing 767) ✓

- Airfield geometry improvements to meet current FAA standards:
  - Current taxiway geometry design standards
  - Continue to enhance overall safety and operational flexibility
Airfield Alternatives
Preliminary Preferred Layout

Generalized Improvements – align with current FAA Standards:

- Eliminating multi-node taxiway intersections
- Reducing number of high energy zone runway crossings
- Eliminating direct access from apron to runway

Runway 11-29 Complex
(No changes outside of Runway 29 end improvements)
Terminal Needs and Alternatives
Passenger Terminal

Existing Issues – Terminal 1

- Older facilities, adapted uses
- 2 security checkpoints
- Unbalanced concessions across concourses
- Constrained terminal area (Runway to I-70, MetroLink)
Passenger Terminal
Existing Issues – Terminal 2

- Undersized baggage make-up*
- Undersized domestic and int’l baggage claim area*
- No baggage re-check counters for connecting int’l passengers
- Undersized concessions
- Single-loaded concourse
- Constrained site

* Planned improvements
Passenger Terminal
Existing Conditions (congestion)
## Passenger Terminal
### Existing Conditions vs 2040 Needs

<table>
<thead>
<tr>
<th></th>
<th>Number of Gates</th>
<th>Building (Sq. Ft.)</th>
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<tbody>
<tr>
<td></td>
<td>Existing</td>
<td>2040</td>
</tr>
<tr>
<td><strong>Separate Terminals</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Terminal 1</td>
<td>36</td>
<td>37</td>
</tr>
<tr>
<td>Terminal 2</td>
<td>18 (incl. 3 FIS)</td>
<td>22</td>
</tr>
<tr>
<td>FIS</td>
<td>In Terminal 2</td>
<td>3 (TBD)</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>54*</td>
<td>62</td>
</tr>
<tr>
<td><strong>Single Terminal</strong></td>
<td>N/A</td>
<td>62</td>
</tr>
</tbody>
</table>

* As of 2020

**Notes:**
- Gate turns assumptions based on industry average
- Turns/gate will increase over time (can accommodate additional growth with planned gates)
- ALPU will provide for post-2040 expansion

Existing gates: mix of gate sizes, designed for smaller aircraft & lower load factors

Future gates: sized for the larger airplanes in the existing and future fleets
Terminal Alternatives

Existing Issues and 2040 Needs

**Terminal 1**
- Surplus space, but functionally obsolete
- Historic Terminal Domes older facilities, adapted uses
- Two security checkpoints at the eastern and western end
- Remaining useful life of Terminal 1 Garage, which needs replacement
- Unbalanced concessions distribution across concourses
- Terminal area constrained by Runway 12R/30L, I-70, MetroLink tracks, and DOD property

**Terminal 2**
- Insufficient space for all functions
- Undersized baggage make-up, domestic and int’l baggage claim
- No baggage recheck counters for connecting international passengers
- Sparse concession opportunities
- Single-loaded concourse, long walking distances for connecting passengers
- Terminal area constrained by Runway 12R/30L, I-70, and MetroLink tracks

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**2040 Needs**
- T1: upgrade space
- T2: double the space
- 62 gates (54 as of 2020)
Terminal Alternatives
Evaluation Criteria

Fatal Flaw Decision Points

- Meet gate/aircraft parking position needs
- Elevate passenger experience to industry standards
  - Walking distances
  - Functional criteria
- Provide dual taxi lanes around concourses
- Provide aircraft pushback zone off the gate
- Meet landside access/curb front needs

Other Criteria

- Phasing/constructability
- Cost - capital/O&M
- Project duration
- Passenger experience
- Non-aeronautical revenue opportunities (parking)
- Expansion beyond 2040
- Airport/St. Louis area image
Terminal Alternatives
Considering All the Options (22 initial concepts)

The initial analysis included potential new terminal sites across the entire Airport property. Due to cost, only the existing site was retained.

Retain Two Terminals

Consolidate Terminals

With or Without Domes

Work with Existing or All New

- Reopen Concourse D
- Airline terminal swap
Terminal Alternatives
Shortlisted 4 Concepts

- **Concept 5**
  - Preliminary
  - Preferred
  - 62 gates
  - Requires At-Grade APM

- **Concept 18-5**
  - 62 gates

- **Concept 8B**
  - 62 gates
  - Requires At-Grade APM

- **Concept 18-14**
  - 62 gates

3 FIS gates - location TBD

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Terminal Alternatives

Preliminary Preferred Concept (Concept 5)

Validation / Reaffirmation of previous studies - preferred single, consolidated terminal concept:

• 2012 Master Plan
  - On the current Airport Layout Plan (approved by FAA)

• 2018 Privatization Study

Single Linear Terminal with Continued Use of T1 Processor
62 gates in 2040
- 110’-wide double-loaded linear concourse
- Dual ADG III taxilanes south of proposed concourse
- Expand terminal west over MOANG
- Concourse centered on processor
Preliminary Preferred Terminal Processor Overview

**Existing**
Departures Drive Adjacent to Arrivals Drive

**Proposed**
Departures Drive Stacked Above Arrivals Drive

- Proposed Terminal Walkways from Departure Curb
- Proposed Departure Curb
- Proposed Arrival Curb (lower level)
- Control Tower
- Proposed Concourse
- Concourse D
- Existing Arrivals Dr.
- Existing Walkway

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Preliminary Preferred Terminal Processor Overview

- New Concourse
- Reconfigured Check-in lobby
- New Security Screening space
- New Baggage Claim Area
- Two-level Curbs
Preliminary Preferred Terminal Processor
Overview

- New Concourse
- New Security Screening space
- Reconfigured Check-in lobby
- Elevated Departure Curb
- New Baggage Claim Area
- Arrivals Curb
- New Consolidated Parking Structure
Preliminary Preferred Terminal
Next Steps

• Additional detail and refinement of:
  – Program costs
  – Phasing and sequencing
  – Enabling projects (e.g. consolidated parking garage, departure/arrival curbsides, relocation of support facilities)

• Additional stakeholder collaboration with:
  – Airline partners
  – Tenants
  – FAA
  – Others
Landside Needs and Alternatives
Landside Alternatives
Terminal 1 Access Issues

- Short decision-making distance to intersection; Major boulevard in front of terminal
- Tight parking envelope
- Confusion from two underpasses
- Airflight Dr. also used for off-site shuttles and hotel traffic
- UL/LL should merge before intersection
- Insufficient decision distance and signage overload
- Concourse D wall “prison appearance”
- Inadequate weaving/decision-making for I-70 WB traffic exiting at Airflight Dr
Landside Alternatives
Terminal 1 Access Issues
Landside Alternatives
Terminal 2 Access Issues

Terminal 2 curbside designed:
- For half the current traffic
- Before focus city status
- Before 9/11

Concourse E limiting roadway alignment
Tight turn/short decision time when departing terminal
Parking garage exit onto LIB
Tight parking envelope
Inadequate number of arrivals curb lanes
Elevated MetroLink tracks limit development
Short sightline/decision time from LIB onto T2 Dr

Legend:
- Outbound
- Inbound
Landside Alternatives
Terminal 2 Access Issues (Entering)
Landside Alternatives

Terminal 2 Access Issues (Exiting)
Landside Alternatives

Ideal Terminal Access: IND Airport Example

**Goals:**
Meet projected demand with minimal congestion for cars, transit, pedestrian, bicycle, future modes:
- Easy decision-making
- Minimal weaving
- Simple, free-flowing

**List of Priorities:**
- Passengers
- Employees
- Shuttles/other

Consolidated/Convenient On-Airport Parking Products and Transportation Services

>1 mile access approach
Landside Alternatives

Evaluation Criteria

- Easy decision making & distances
- Minimal weaving
- Simple, free-flowing access
- Grand entrance
- Access to parking
- Implementation timeline
- Connectivity to neighboring communities
- Bike/pedestrian access
- Avoid new roadways inside runway protection zone
- Avoid DOD property acquisition dependency
Landside Alternatives
Concepts Development

- Short distance between highway and terminal
- Looked at 25+ concepts:
  - Range of Airport access locations off highway from Cypress Rd to I-170
  - Range of interchange types
Landside Alternatives

Shortlisted Concepts

Legend:
- Proposed Terminal
- Airside Boundary
- Runway Protection Zone
- Proposed Roads
- Inbound Traffic
- Outbound Traffic

Traffic Concentrated at Cypress

Traffic Split between Airflight & Cypress

Looping One-way Traffic on Natural Bridge and LIB
Landside Alternatives
Preliminary Preferred – Alternative 10c

Legend:
- Inbound Traffic
- Outbound Traffic
- I-70 Entrance/Exit
- Elevated Roadway
- Consolidated Garage

- Maintains access to/from South of I-70
  - preserves local network
- Maintains 2-way LIB & Natural Bridge traffic
- Improves Pedestrian/Bicycle access
- Redundancy for Entry/Exit points to/from I-70
- Avoids DOD property (independency)
Landside Alternatives

Next Steps

- Develop additional detail to continue evaluating the Preliminary Preferred Landside Alternative (10c)
- Include in depth investigations with MoDOT, St. Louis County Highways, and neighboring municipalities
- Facilities also considered once a preferred roadway alternative is selected:
  - Parking (public, employee, ride share, taxi)
  - Ground Transportation Center
  - Consolidated Rental Car Facility (CONRAC) – future flexibility
Evaluation of Support Facilities Alternatives
Other/Support Facilities
Needs

- Cargo
- General Aviation
- Aircraft Maintenance, Repair & Overhaul
- Airline Support:
  - MRO
  - RON/hardstand parking
  - GSE repair
  - Belly cargo

- Airport Support:
  - Consolidated ARFF
  - Airport maintenance
  - Fuel storage
  - Concessions’ logistics
  - Airport police
  - Airport administration
  - Control tower
Other/Support Facilities Alternatives
Preliminary Preferred

Legend:
- Terminal/Concourse
- Airport Support
- Airline Support
- Cargo
- General Aviation
- Airfield Improvements
Next Steps
Next Steps in ALP Update Process

Program Implementation
- Additional Planning
- Environmental Assessments & Related Approvals
- Design & Related Permits
- Construction

Airport Layout Plan Study
- Terminal Concepts Round 5 (Preferred)
- Landside Alternatives
- Cargo/Support Alternatives
- Airline Coordination Meeting
- Preliminary Preferred Airport Plan
- Environmental Overview (Preliminary Evaluation)
- Financial/Implementation Plan
- ALP Drawing Set (FAA Approval)
- CIP Impacts, Airline Agreements
- Public Engagement (Open House)
- Final Preferred Airport Plan
- Survey #3
- Commission Briefing #3

TAC/AAAC Meetings

Q4 2021 - TODAY
TODAY
Q1-2 2022
Beyond the ALP Update Process

Typical Airport Program Implementation

- Airport Layout Plan Study
- Advanced Planning (Bridging Documents)
- Environmental Assessment / Approvals
- Architectural Design
- Construction

We are here

Financial Feasibility

Airline Coordination

City/Airline Negotiations

Detailed Costing/ Phasing

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Next Steps

- Additional Commission/TAC/AAAC, Public Surveys, Public Engagement and other stakeholders’ communications
- Implementation/Financial Planning
- Environmental Overview
- Finalize Plan
- Airport Layout Plan Drawing Set Submittal to FAA for Approval
- Final ALP Update Report

Stakeholder Communication to come:
- Airport Commission Briefing: TODAY
- Website updates: Q4 2021 *(just published)* and Q2 2022
- Survey #3
- Public Engagement (Open House)
Thank You

flystl.com

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