



## The Ohio State University Airport Master Plan Update Technical Advisory Committee Meeting 3

**Date:** Monday, September 10, 2018

**Time:** 2:00 - 4:00 p.m.

**Location:** Ohio State Airport  
Knowlton Flight Center Classroom 1 (Room 235)  
2160 West Case Road, Columbus, OH 43235

### Meeting Summary

#### Meeting Purpose

- To review public/stakeholder input to date
- To receive schedule updates
- To review facility requirements and alternatives
- To comment and discuss: runway alternatives, taxiway alternatives and terminal area alternatives

#### Meeting Overview

Kimberly Moss (The Ohio State University) welcomed everyone to the meeting. Marie Keister (Engage Public Affairs) then asked everyone to introduce themselves. Following introductions Marie reviewed the meeting purpose and agenda.

Marie then provided a recap of the public and stakeholder input collected to date:

- An e-news update was issued to stakeholders alerting them that the public meeting had been rescheduled and new Master Plan chapters were added to the Ohio State University (OSU) Airport website.
- A briefing was held with City of Worthington council leadership to hear their questions and to address concerns.

A member of the Technical Advisory Committee asked:

*Question* – What is the difference between the content of the first and second public meetings?

*Answer* – The first public meeting focused on answering the question “What is this study about?” and “What are the project goals?”; while the second meeting will discuss future projected growth of the airport and its facilities.

Marie mentioned that once a date is set for the public meeting, those that are subscribed to the project mailing contact list (and project partners) will be notified about the meeting through an e-news update.

Maria Muia (Woolpert) reviewed the project schedule and noted the availability of the various Master Plan chapters on the OSU Airport website. The Inventory of Existing Conditions and Aviation Activity Forecast chapters are currently on the website, while the Facility Requirements will soon be available. Once final alternatives are chosen, the Alternatives chapter will be completed, followed by the Layout Plan Set, Implementation/Feasibility and Environmental Overview chapters. Maria then provided an overview of the Facility Requirements and Alternatives. She noted the purpose of the facility requirements review is to ask, “Are the facilities in place to meet the needs of the users?”, and if not, “What are the alternatives to meeting those needs?”.





A member of the Technical Advisory Committee asked:

*Question* – How do you forecast data? Is it based on current demand?

*Answer* – We forecast on unconstrained demand but build on realized demand.

The following facility requirements and alternative goals were established (in no particular order of importance, except for the first goal), by the project team:

- **Ensure safety and security is the first priority, followed by meeting customer needs with quality service.**
- Focus on the needs of all general aviation with an emphasis on students.
- Promote compatible land use on the airport.
- Co-locate like users/services where possible.
- Plan landside development in an efficient, flexible and cost-effective manner.
- Preserve investment in existing facilities, property contiguous with taxiways and aprons for aviation purposes with airside needs.
- Maintain Class IV, Part 139 Standards and all FAA regulations and design standards.
- Be mindful of airport impact on neighborhoods.

Maria then discussed wind coverage for the primary and parallel runways.

Wind Data Table				
RUNWAY	10.5-KNOTS	13-KNOTS	16-KNOTS	20-KNOTS
All-Weather Wind Data Observations				
Runway 9-27	90.45 %	94.74 %	98.68 %	99.74 %
Runway 5-23	88.56 %	94.00 %	98.26 %	99.59 %
Combined	99.78 %	97.60 %	99.49 %	99.93 %
Instrument (IFR) Wind Data Observations				
Runway 9-27	91.45 %	95.50 %	99.00 %	99.84 %
Runway 5-23	90.95 %	95.44 %	98.86 %	99.78 %
Combined	95.88 %	98.45 %	99.74 %	99.98 %
Note: Crosswind component computed using runway true bearing (87.4 & 49.1)				
Source: FAA Airport GIS – “Station 724288 Ohio State University Arpt Annual Period Record 2008 – 2017”				

A member of the Technical Advisory Committee asked:

*Question* – When looking at the wind knots, which runways are most conducive for aircraft take-off?

*Answer* – The parallel runways provide coverage over 90 percent of the time. Adding the crosswind increases that to 95 percent, so the runways are physically oriented correctly (regarding winds).





Maria then reviewed the critical design aircraft for each runway. This is done by looking at the airports history to determine what are the largest aircraft that are most often using the runways. This is usually a group of aircraft that fall into a coding system in terms of approach speed, wing span, and tail height. Additionally, a sample aircraft which represent this group is also shown. The design aircraft, or group of aircraft, is the most demanding in terms of facility needs like turning radius, wing span and tail height for hangars. For this study, the following design codes and representative aircraft were selected for the primary, parallel and crosswind runways, that best represents the type of aircraft to use each runway.

**Primary runway (existing Runway 9R-27L)  
C/D-II (e.g. Gulfstream 450)**



**Parallel runway (existing Runway 9L-27R)  
A-II (e.g. Pilatus PC-12)**



**Crosswind runway (Runway 5-23)  
B-I (small) (e.g. Cessna Citation CJ1)**



After the critical design aircraft grouping is determined, the runways are analyzed to determine if they meet the demands for those aircraft. Runway length requirements were then discussed in relation to the aircraft loads.

Runway Length Requirements		
Airport Elevation	906 ft. MSL	
Mean daily maximum temperature of the hottest month	84 F	
Maximum difference in runway centerline elevation (gradient)	12 ft.	
Small aircraft		
100% of small aircraft (12,500 lbs. or less & less than 10 passengers)	4,000 ft.	
100% of small aircraft (12,500 lbs. or less 10 or more passengers)	4,250 ft.	
Large aircraft of 60,000 pounds or less		
	Dry	Wet
75% of these large aircraft at 60% useful load	4,820 ft.	5,405 ft.
75% of these large aircraft at 90% useful load	6,570 ft.	7,000 ft.
100% of these large aircraft at 60% useful load	5,620 ft.	5,620 ft.
100% of these large aircraft at 90% useful load	8,320 ft.	8,320 ft.
Source: AC 150/5325-4B, Runway Length Requirements for Airport Design		





Out of the three runways, only the primary runway at 5000 feet long meets the needs of all small aircraft. However, the primary runway does not meet the needs of large aircraft that are over 12,500 and less than 60,000 lbs. To meet all these aircraft needs in all conditions, over 8000 feet would be needed. The university doesn't feel it is their mission to meet all needs of all aircraft in this category, but they do feel like a longer runway is needed in order to serve their existing client base and maintain a professional environment for their students to learn in. While 7,000 feet would meet most of the user needs in most of the situations, getting to 7,000 feet would significantly impact the surrounding neighborhoods. A 6,000-foot runway would meet the needs of many users going longer distances and seems more achievable while with minimal impact to the surrounding neighborhoods.

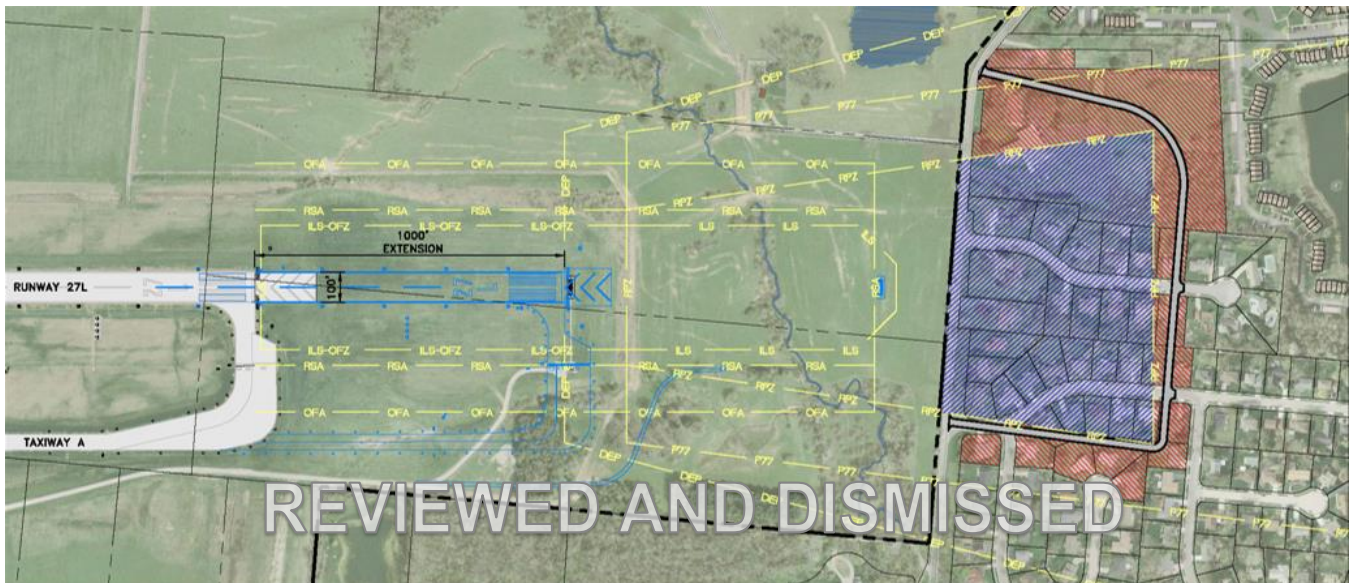
A member of the Technical Advisory Committee asked:

*Question – Why are we trying to help corporate users?*

*Answer – While the main focus of the airport is academic in nature, the current airport facility wouldn't exist without corporate users, as their usage subsidizes the costs of providing a state-of-the-art facility with modern navigational aids, an air traffic control tower, and a professional environment. Without corporate users, these facilities would not exist. With them, OSU students learn in the same environment they will go to work in, providing them an advantage over others who don't have these facilities and allowing for an easier transition into the industry.*

Maria stated that 6,000 ft. of runway is recommended based on a balance of academic, corporate and community needs and impacts. A runway of that length would nearly fit into the existing footprint of the airport. Several runway alternatives were then reviewed, and their impacts discussed. Multiple considerations on airport operations were used in the development of the runway alternatives.

### **Runway Alternative 1 | Extends primary runway (south runway) 1,000 ft. to the east**



**Note:** Light blue lines indicate the proposed runway extension, yellow lines show various required airport zones, purple-blue shaded areas show the runway protection zone (impacted properties), and red shaded areas would impact the existing road network and relocation of Godown Road.

Alternative 1 includes extending the primary runway 1,000 feet to the east with the ILS remaining in place on 9R and providing an LPV approach with one-mile visibility to the new end of Runway 27L. This is a logical first alternative because it would take the least amount of pavement and not require the ILS glideslope and MALSR to





be relocated, thus providing a significant savings on navigational aids. However, in relation to the evaluation criteria discussed previously, this alternative has several disadvantages: the primary instrument approach end would not be optimal in relation to prevailing winds, significant property impacts & homeowner relocation would be required in Sycamore Hills, and a stream would need to be enclosed or relocated.

**Runway Alternative 2** | Extends primary runway (south runway) 500 ft. to the east and 500 ft. to the west

**East side:**



**West side:**



**Note:** Light blue lines indicate the proposed runway extension, yellow lines show various required airport zones, purple-blue shaded areas show runway protection zones (impacted properties), and red shaded areas would impact the existing road network and relocation of both Godown and Sawmill Road.





Members of the Technical Advisory Committee asked the following questions:

*Question – Do aircraft take off and land in both directions?*

*Answer – All operations are into the wind if possible.*

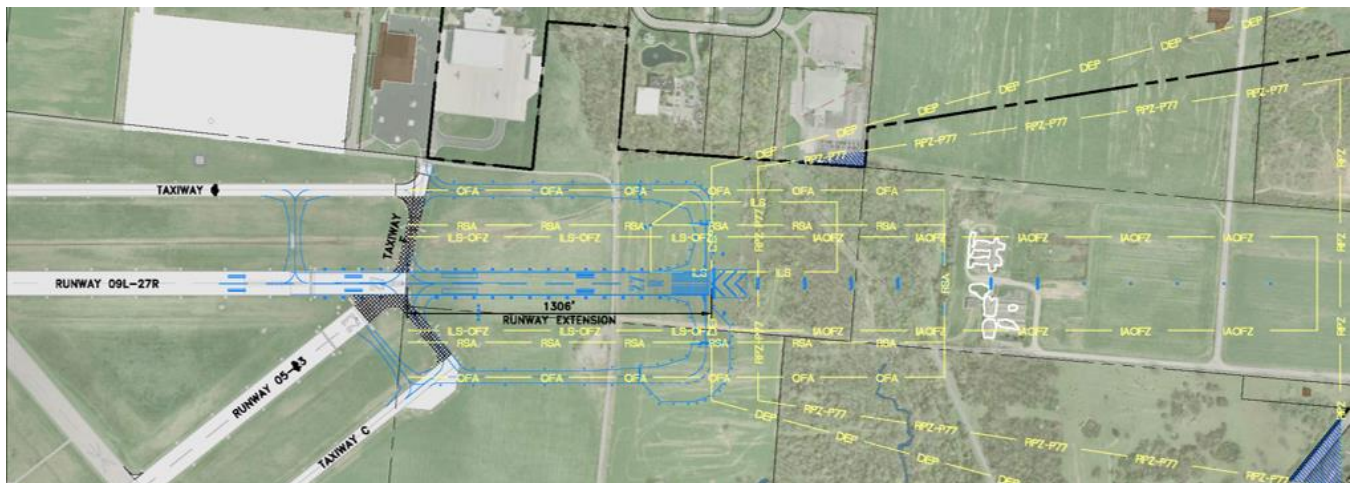
**Question** – What prevented the airport from expanding the runway to 6,000 ft. the last time there was a study?

*Answer – Funding.*

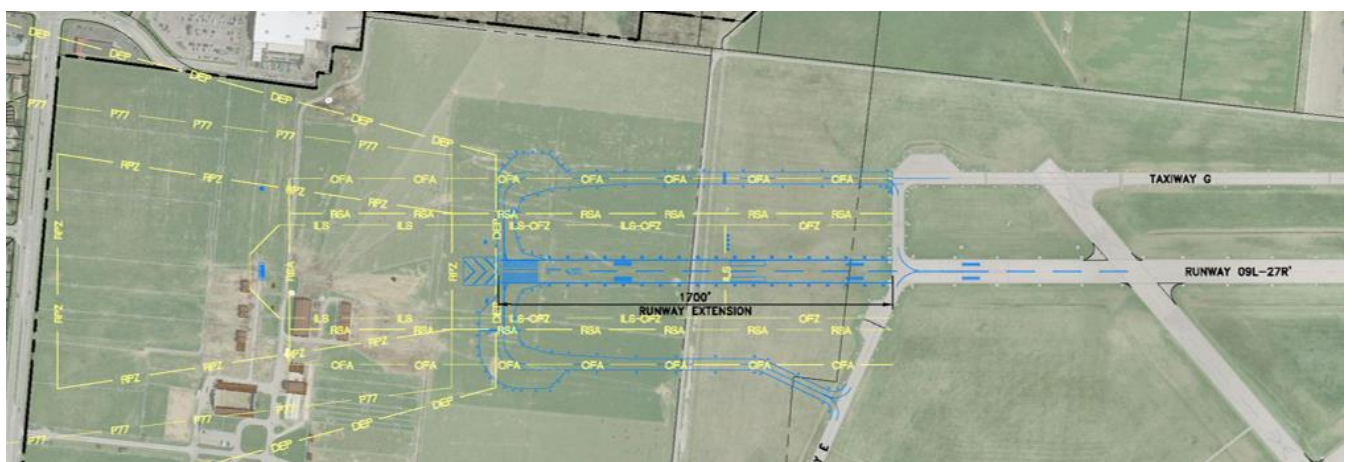
Since options for extending the primary runway have significant impacts, the review process looked at the other two runways to determine if either of those could be lengthened with less impact. The crosswind runway was quickly ruled out because it would either take out the State of Ohio aircraft hangar, impact an industrial park, two other roads, and a shopping center, or some combination of the above.

**Runway Alternative 4** | Extends parallel runway (north runway) 1,306 ft. to the east and 1,700 ft. to the west

**East Side:**



**West Side:**



**Note:** Light blue lines indicate the proposed runway extension, yellow lines show various required airport zones and purple-blue shaded areas show the runway protection zone (impacted properties).



Alternative 4 adds 1,700 feet to Runway 9L with an ILS and 1,306 feet to Runway 27R, while the current primary runway would stay as it is currently. Alternative 4 has by far the least impact to the surrounding community and maximizes the airport's existing foot print. This would help separate corporate traffic from student traffic by moving student traffic to the south runway (Runway 9R-27L). The residential impacts would be significantly less, though a sliver of a parking area in Shadow Lakes residential area (east of the airport) would be in the outer portions of the RPZ, along with a short strip of Godown Road. This would also be the case for a small area of a parking lot owned by the US postal service.

If Alternative 4 moves forward, KOSU would seek FAA approval for these land uses to exist within the future RPZ. To the west, all runway operations, objects and zones are within the airports' existing boundary, though livestock operations west of the airport would be affected. It was noted by a TAC member that these livestock operations are under review and some may be relocated to another Ohio State University facility in the future. Of the alternatives, this option has the least amount of property impacts, maximizes the use of existing land and segregates flight training from corporate traffic. Some airport navigational devices would need to be acquired or relocated in addition to internal road and tree removal.

Members of the Technical Advisory Committee asked the following questions:

*Question* – Would the new configuration of the runways have a potential impact on noise?

*Answer* – Yes, by extending the runway – aircraft would no longer need to execute a “step-down” approach from the east but instead use a 3-degree glide path, that would reduce noise from aircraft in the area.

*Question* – When looking at the category of “100% of these large aircraft at 60% useful load” – what percentage is needed or is serviceable by 6,000 ft. of runway?

*Answer* – That's not calculatable, those categories are set by the FAA at 60% and 90% useful load and interpolation between the charts is not allowed.

*Question* – What destinations are reachable with the 60% useful load?

*Answer* – Aircraft won't be able to reach Europe but could possibly reach the east and west coasts (of the US) depending on the type of aircraft, without refueling. Today, flights from Ohio State Airport can reach different destinations as far as Kansas based on aircraft type and air temperatures.

Pavement condition index (PCI) for the three runways were reviewed. An action plan for each is listed below.

Runway ID	Highest PCI	Lowest PCI	Action Plan
9R-27L (Primary)	99	77	Preventative maintenance is appropriate for most of the runway.
9L-27R (Secondary)	99	3	Most of this runway was rehabilitated in 2017; so routine preventative maintenance is appropriate for most of it. The section that was not rehabilitated (approximately 500 feet on the 9L end) should be reconstructed as soon as funds can be programmed.
5-23 (Crosswind)	77	74	Preventative maintenance needed



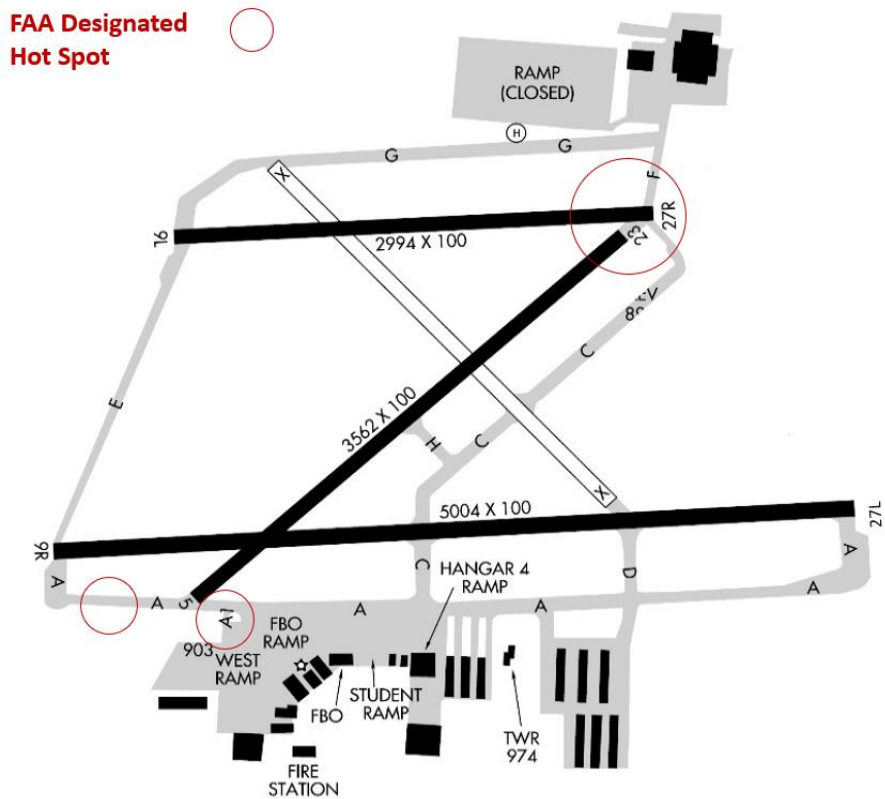




Maria then discussed airport taxiways. Three areas were identified by FAA as “Designated Hot Spots” between taxiways and runways. These hot spots are areas on the airfield that may be confusing to pilots when maneuvering aircraft. Runway usage was also discussed.

Runway	Usage
9R-27L (Primary)	74%
9L-27R (Secondary)	21%
5-23 (Crosswind)	4%

Taxiways & FAA Designated Hot Spots

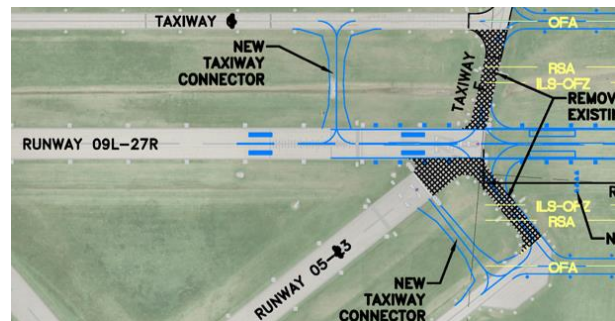
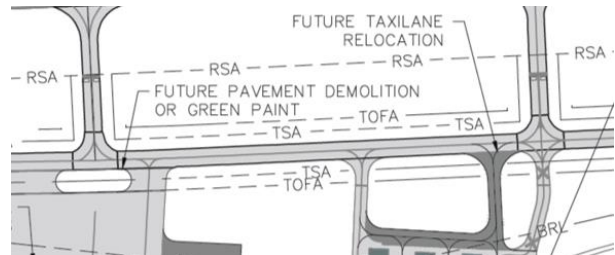
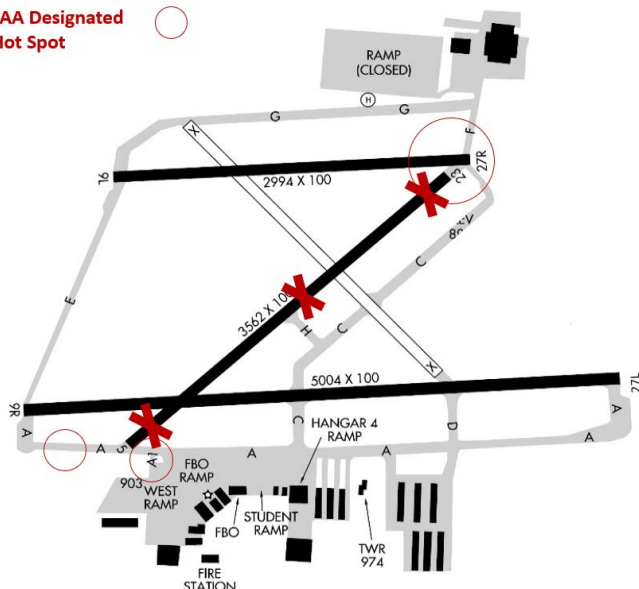


Several alternatives were reviewed to address FAA’s concerns. Many of these provided for a more obvious delineation between runways and taxiways. One option that was favored by the engineering team would remove the Crosswind runway, which would alleviate the FAA’s concerns and open future area for potential airport facilities.





FAA Designated  
Hot Spot



A member of the Technical Advisory Committee asked:

**Question** – Who are the 4% that use the crosswind runway? If students are utilizing this runway it shouldn't be closed.

**Answer** – The State of Ohio is the most prevalent user of the crosswind runway, because its' hangar facilities are closest to this runway. Students do not typically use the crosswind because OSU policy prevents them from training in high wind conditions.

Pavement condition index (PCI) for the seven taxiways were reviewed. An action plan for each is listed below.

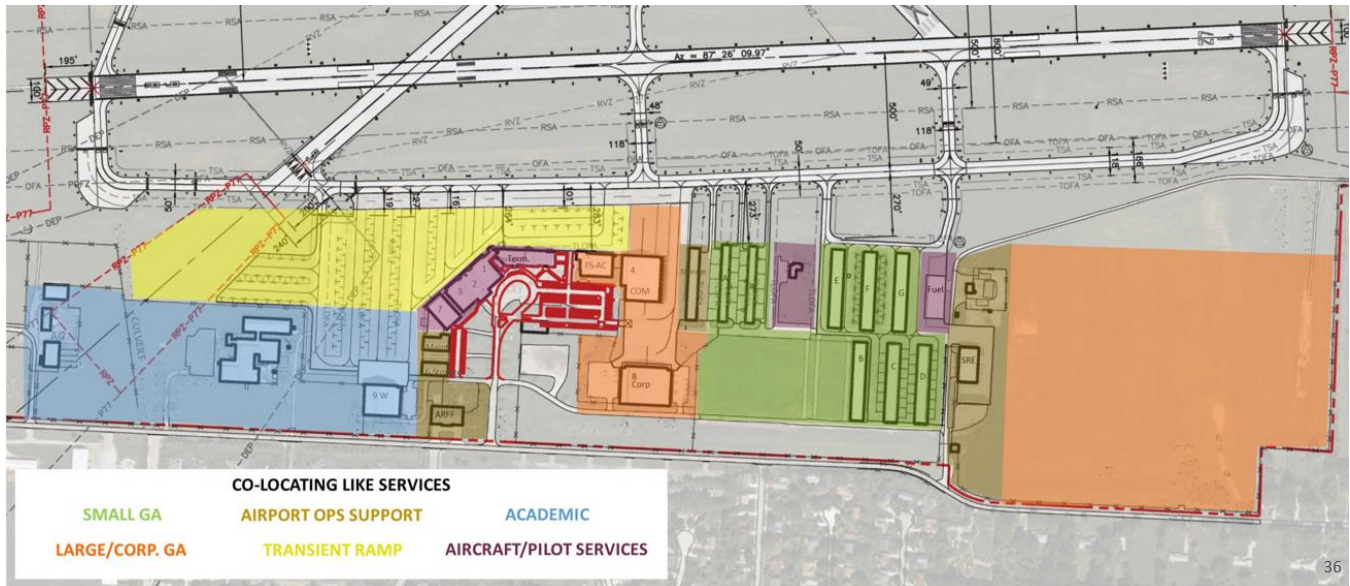
Taxiway ID	Highest PCI	Lowest PCI	Action Plan
A	90	68	Preventative maintenance
C	91	42	Reconstruct section with 42 PCI; preventative maintenance for the remainder
D	89	76	Preventative maintenance
E	31	0	Reconstruct
F	32	15	Reconstruct
G	0	0	Reconstruct
H	55	43	Overlay/Reconstruct

Maria then discussed several additional components of the facility requirements including airfield marking and lighting; aircraft hangars, apron, and auto parking; security, storage, maintenance; and other services. Information about these items are referenced in the PDF of the TAC 3 meeting presentation, which can be found on the airport's website on the airport master plan tab.





Existing terminal area land uses were also reviewed and a diagram showing these uses is shown below.



Following the discussion of airport facility requirements, Marie asked TAC members (specifically those that use the airport on a regular basis) if they had any thoughts or questions on what had been presented so far.

*Comment* – I like the idea of closing the crosswind runway down. What you've proposed in the alternatives are all positive.

*Comment* – I like the longer runway.

*Question* – Would a 6,000 ft. runway accommodate your needs?

*Answer* – Yes.

*Question* – Could aircraft use the crosswind runway as a taxiway to taxi to the new runway end?

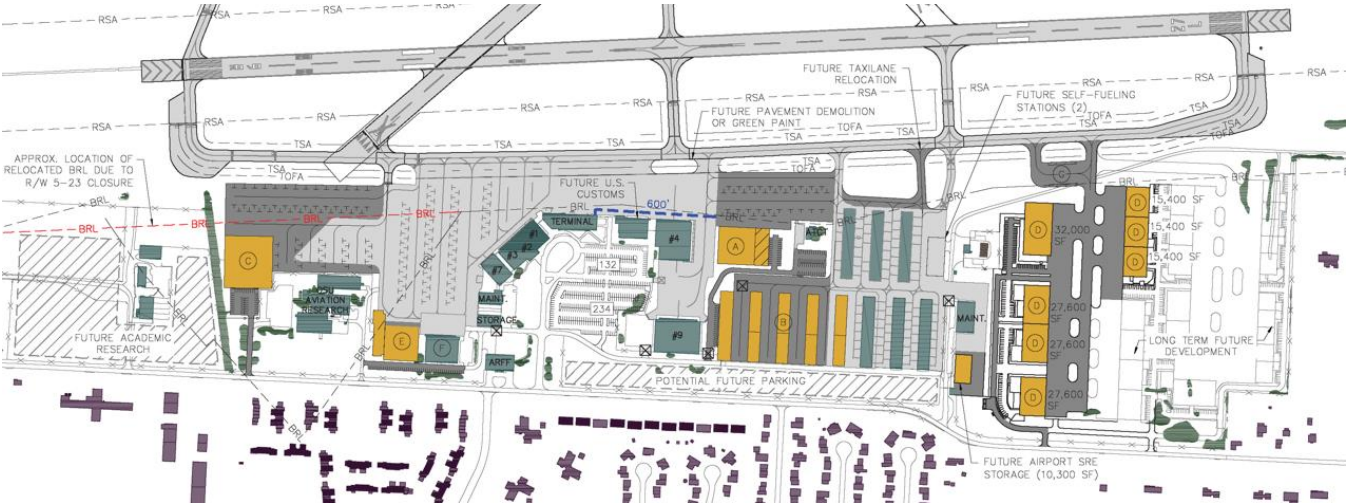
*Answer* – There would be FAA concerns since it looks like a runway but providing an efficient taxiway between the terminal and the runway ends would be included after a preferred alternative is chosen.

Marie mentioned that the planning team would receive input from TAC members on the alternatives prior to inclusion into the final report and public distribution for comment. Maria then presented two terminal area alternatives, each noting pros and cons of future building development. Larger versions of these terminal area alternatives can be found on the airport's website on the airport master plan tab.





### Terminal Area Alternative 1



**Note:** Existing buildings are shaded blue-green and proposed facilities are shaded yellow. Existing runways and taxiways are shaded light-grey and proposed road facilities are shaded dark-grey.

- (A) FLIGHT SCHOOL HANGAR AND APRON
  - 30,000 SF HANGAR
    - APPROX. 25–30 AIRCRAFT
  - 37 TIE DOWNS (NESTED)
    - 17 TIE DOWNS (PULL THROUGH)
  - OPTION FOR FLIGHT EDUCATION OPERATIONS SUPPORT FACILITY AND/OR PARKING LOT
  - RELOCATE EXISTING T-HANGARS (19 UNITS) AND AIRPORT STORAGE BUILDING

(B) T-HANGARS
  - 61 NEW T-HANGARS TOTAL
    - 19 RELOCATED UNITS
    - 42 UNITS FOR FUTURE GROWTH
  - RELOCATE ACCESS ROAD TO TOWER
    - APPROX. 20 PARKING SPACES OFF OF ACCESS ROAD
  - RECONSTRUCT PARKING LOT NEAR CONTROL TOWER
    - APPROX. 44 PARKING SPACES
  - NEW PARKING LOTS TO THE SOUTH
- (C) TRANSIENT CORPORATE HANGAR
  - 55,000 SF CORPORATE HANGAR
  - TEMPORARY OR OVERNIGHT TRAFFIC
  - APPROX. 45 PARKING SPACES
  - NEW SECURITY GATE AND ACCESS ROAD
  - GAIN 24 G.A. TIE DOWNS

(D) BASED CORPORATE HANGAR
  - NEW BASED CORPORATE AIRCRAFT MUST MOVE TO FUTURE CORPORATE AIR PARK

(E) ACADEMIC MAINTENANCE HANGAR
  - 26,000 SF HANGAR
  - 11,400 SF ACADEMIC CENTER
  - APPROX. 45 NEW PARKING SPACES

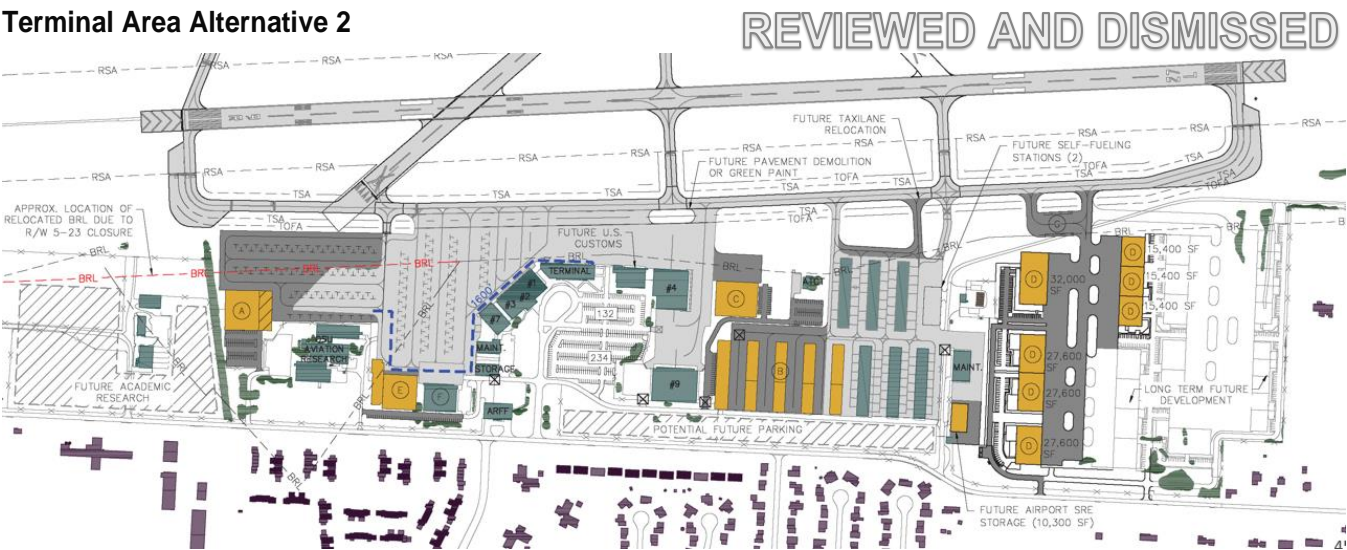
(F) OSU AIRCRAFT MAINTENANCE HANGAR
  - 17,000 SF HANGAR
  - LARGER AIRCRAFT MAINTENANCE
  - CLOSE PROXIMITY TO ACADEMIC MAINTENANCE PROGRAM

(G) DE-ICING FACILITIES
  - ONE ADG II DE-ICING PAD

Pros	Cons
<ul style="list-style-type: none"> <li>Keeps student in visual contact when walking to flight school aircraft staging area</li> <li>Establishes a corporate campus for all future corporate hangars</li> <li>No impact of drainage swale</li> <li>Flight school hangar has expansion potential</li> <li>Co-location of T-hangars</li> </ul>	<ul style="list-style-type: none"> <li>Student walking across transient apron</li> <li>Neither apron nor corporate hangar can be built before crosswind is closed or corporate campus initiated</li> <li>Requires relocation of existing users in 2 T-hangar buildings</li> <li>Short on T-hangars</li> <li>No corporate hangar space available until corporate campus is initiated</li> </ul>



Terminal Area Alternative 2



**Note:** Existing buildings are shaded blue-green and proposed facilities are shaded yellow. Existing runways and taxiways are shaded light-grey and proposed road facilities are shaded dark-grey.

- A** FLIGHT SCHOOL HANGAR AND APRON

  - 30,000 SF HANGAR
    - APPROX. 25-30 AIRCRAFT
  - OPTION FOR FLIGHT EDUCATION OPERATIONS SUPPORT FACILITY
  - NEW PARKING LOT
    - APPROX. 64 PARKING SPACES
  - 165 TOTAL TIE DOWNS
    - APPROX. 26 FOR FLIGHT SCHOOL AIRCRAFT

**B** T-HANGARS

  - 61 NEW T-HANGARS TOTAL
    - 19 RELOCATED UNITS
    - 42 UNITS FUTURE GROWTH
  - RELOCATE ACCESS ROAD TO TOWER
    - APPROX. 20 PARKING SPACES OFF OF ACCESS ROAD
  - RECONSTRUCT PARKING LOT NEAR CONTROL TOWER
    - APPROX. 44 SPACES
  - NEW PARKING LOT TO THE SOUTH
- C** TRANSIENT CORPORATE HANGAR

  - 32,000 SF CORPORATE HANGAR
  - TEMPORARY OR OVERNIGHT TRAFFIC
  - ROUTE FROM TERMINAL TO HANGAR CROSSES AIR TRAFFIC

**D** BASED CORPORATE HANGAR

  - NEW BASED CORPORATE AIRCRAFT MUST MOVE TO FUTURE CORPORATE AIR PARK

**E** ACADEMIC MAINTENANCE HANGAR

  - 26,000 SF HANGAR
  - 11,400 SF ACADEMIC CENTER
  - APPROX. 45 NEW PARKING SPACES

**F** OSU AIRCRAFT MAINTENANCE HANGAR

  - 17,000 SF HANGAR
  - LARGER AIRCRAFT MAINTENANCE
  - CLOSE PROXIMITY TO ACADEMIC MAINTENANCE PROGRAM

**G** DE-ICING FACILITIES

  - ONE ADG II DE-ICING PAD

Pros	Cons
<ul style="list-style-type: none"> <li>Co-location of T-hangars</li> <li>Co-location of maintenance hangars</li> <li>Co-location of academic uses</li> <li>No impact of drainage swale</li> <li>Allows for 1 corporate hangar without infrastructure needs of corporate campus</li> </ul>	<ul style="list-style-type: none"> <li>Neither apron nor transient corporate hangar can be built before crosswind is closed</li> <li>Requires relocation of existing users in 2 T-hangar bldgs.</li> <li>Short on T-hangars</li> </ul>





Following the discussion of terminal area alternatives, Marie asked TAC members if they had any thoughts or questions:

*Question* – You’ve said that a longer runway may help address the noise over Worthington – has a noise study been completed as part of this plan?

*Answer* – A noise study was completed in 2011 and is not part of this master planning effort, though noise contours for the preferred alternative will be included in the chapter on environmental conditions. The environmental conditions chapter won’t be completed until the end of the study.

*Question* – Could you close the crosswind runway now?

*Answer* – We could, but it might take years for the FAA to approve the closure. We would also have to pay for its removal. A previous crosswind runway that was closed hasn’t been removed yet because of funding.

*Question* – Are there any land use impacts?

*Answer* – The only major concern is keeping students and their planes away from jets, and students walking between facilities.

Maria asked TAC members to send the team their ideas.

Marie then reviewed the next steps and action items:

- TAC members were asked to provide comments on the presentation by Sept. 27
- The meeting summary and presentation would be posted to the airport website, following TAC comments
- The next TAC will be held after the next public meeting, likely in Winter 2019
- The team will also meet with City of Worthington officials, City of Dublin officials and the Northwest Civic Association prior to the Public Meeting, likely in the Winter of 2019

TAC members posed a few more questions before the meeting was adjourned:

*Question* – Will you show the environmental impacts at the next public meeting?

*Answer* – The environmental information, specifically noise contours for the preferred alternative, will be presented to the public at the final workshop, anticipated to be held in Winter 2019

*Question* – Will a new instrument landing system be planned? Currently only runway 9R (primary, south) has an ILS.

*Answer* – The proposal will include either a new or relocated ILS on the existing parallel (north) runway.

### **Meeting Participants**

Nineteen (19) TAC participants attended the meeting.

#### TAC Members

Deral Carson	Midwest Air Traffic Control Services/FAA
Lowell Dowler	Worthington Industries
Nick Gill	Mid-Ohio Regional Planning Commission (MORPC)
John Ginley	The Ohio State University, Aviation Alumni Society
Jim Giuliani	The Ohio State University, College of Engineering
Marilyn Goodman	Northwest Civic Association
Jim Gregory	The Ohio State University, College of Engineering







Doug Hammon	The Ohio State University Airport
Hannah Higgins	The Ohio State University, Planning & Real Estate
Brandon Mann	The Ohio State University, Flight Education Division
Julie Morris	The Ohio State University, College of Food, Agr., Environmental Sciences
Kimberly Moss	The Ohio State University, Planning & Real Estate
Carlos Ruiz-Coll	The Ohio State University Airport
Matt Schutte	The Ohio State University, College of Engineering
Richard Smith	National Intercollegiate Flying Association (NIFA)
Robyn Stewart	City of Worthington
Bob Tanner	NetJets
Dave Wall	Columbus Regional Airport Authority
David Zoll	Advisor to City of Worthington

Participants that could not attend the TAC meeting:

Tom Baxter	Capital City Aviation
Graham Cochran	The Ohio State University, College of Food, Agr., Environmental Sciences
Katie Delaney	FAA
Dave Dennis	ODOT - Aviation
Rep. Mike Duffey	Ohio House of Representatives
Mike Eppley	The Ohio State University Airport FBO
Dale Gelter	The Ohio State University Airport
Mark Gerko	Columbus State Community College
Donna Goss	City of Dublin
Mark Hagenberger	The Ohio State University, College of Engineering
Quinten Harris	City of Columbus, Dept. of Development
John Hauelsen	We Oppose Ohio State Airport Expansion (WOOSE)
John Horack	The Ohio State University, College of Engineering
Eric MacGilvray	Village of Riverlea
Javier Melendez-Galinsky	The Ohio State University, Student
Rob Mendez	The Ohio State University, Student
Jack Miner	The Ohio State University, Office of Academic Affairs/Worthington Res.
Ross Neice	ODOT - Aviation
Mark Scott	The Ohio State University, College of Engineering
Mark Sikora	The Ohio State University, College of Engineering
Adam Stiffler	Cardinal Health
Kevin Wheeler	City of Columbus, Dept. of Development
David Williams	The Ohio State University, College of Engineering

Consultant Team Members:

John Baer	Woolpert
Nick Hoffman	Engage Public Affairs / MurphyEpson
Marie Keister	Engage Public Affairs / MurphyEpson
Marie Muia	Woolpert

*This Sept 10, 2018 TAC meeting summary and presentation will be posted on the airport's website:  
<https://airport.engineering.osu.edu/airport-facilities/master-plan>.*

