

AUGUST 26, 2021

# MID-FIELD AIRPARK STUDY

King County International Airport / Boeing Field  
Seattle, WA.



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## 1. INTRODUCTION

King County International Airport/Boeing Field (KCIA or Airport) recently completed an Airport Master Plan. The master plan determined that 45 aircraft parked at the Northeast Airpark are located within the Runway Protection Zone (RPZ) for Runway 14R. An RPZ's function is to enhance the protection of people and property on the ground<sup>1</sup>. This defined area is required to be clear of all fixed objects with a few exceptions such as navigational aids. Aircraft parked within an RPZ are incompatible with airport operations and are therefore considered to be nonstandard. As KCIA operates under a 14 CFR Part 139 certificate and receives federal funding for capital projects, the Airport needs to comply with grant assurances by operating the airport within FAA standards and mitigating nonstandard conditions.

**Figure 1** shows the aircraft parking positions within the RPZ at the Northeast Airpark. It should be noted that this study originally examined impacts for a future RPZ if Runway 14R threshold were to be relocated to the north; however, during the study this planning parameter was changed to evaluate the existing approach RPZ only. This document reflects the impacts associated with displacing the based aircraft within the existing RPZ.

**FIGURE 1**  
**RUNWAY 14R RPZ NONSTANDARD CONDITIONS**



Source: RS&H Analysis, 2021

KCIA staff tasked RS&H to complete a study to create a comprehensive development plan that resolved the nonstandard condition. During the scoping phase of this study, it was determined by KCIA staff that this study would generate concepts that looked at accommodating the displaced aircraft from the Northeast Airpark into the Mid-Field Airpark and Lot 13 sites, referred jointly in this study as the Mid-Field Airpark. No other sites or areas on the airfield were examined or evaluated as part of this study. The development plan needed to have the ability to accommodate the short-term need to relocate aircraft, but also have the ability in the future to provide connection to the Jorgensen Forge Site as shown in **Figure 2**. This study did not examine the functionality or the aeronautical and nonaeronautical facilities that could be developed in the future on the Jorgensen Forge Site.

<sup>1</sup> FAA Advisory Circular 150/5300-13A Airport Design, Paragraph 310, 2014

**FIGURE 2**  
**PROPOSED RELOCATION SITE – MID-FIELD AIRPARK**



Source: RS&H Analysis, 2021

## 2. GOALS AND PLANNING OBJECTIVES

To effectively identify, evaluate and recommend a comprehensive development plan that addresses stakeholder needs, the study established several goals and planning objectives. The goals and objectives shaped the study’s analysis and conclusions. These goals established the framework by which alternative concepts were developed, evaluated, and refined. **Figure 3** highlights the goals and planning objectives established for this study.

**FIGURE 3**  
**GOALS AND PLANNING OBJECTIVES**



Source: RS&H Analysis, 2021

### 3. AIRCRAFT TIE-DOWN CAPACITY

The development concepts need to have the ability to not only accommodate the 45 aircraft being displaced from the RPZ for Runway 14R at the Northeast Airpark, but also ensure existing aircraft in the Mid-Field Airpark can remain. **Table 1** shows the number of tie-down spaces broken out by area that need to be accommodated in the development concept. This study focused on existing capacity and did not examine forecasted growth in general aviation aircraft.

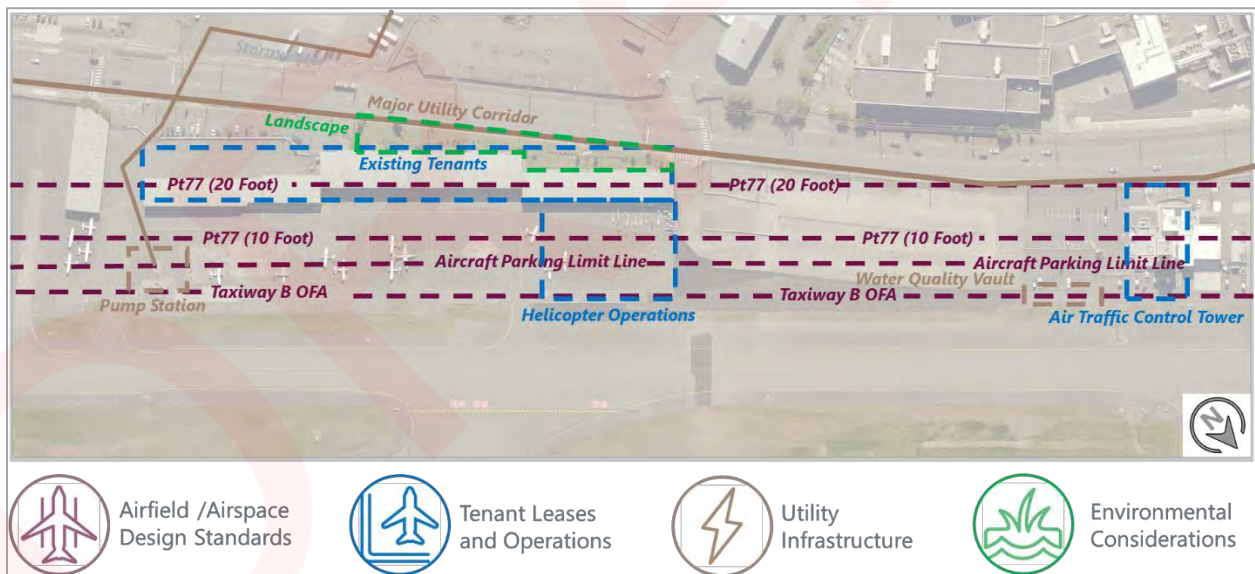
**TABLE 1**  
**AIRCRAFT TIE-DOWN CAPACITY**

Location	Tie-Down Positions
Northeast Airpark	45 Displaced
Mid-Field Airpark	15 Existing
South Hangar Positions	4 Existing
<b>Total Capacity</b>	<b>64 Needed</b>

### 4. MID-FIELD AIRPARK SITE CONSIDERATIONS

The Mid-Field Airpark was evaluated to identify existing site conditions that could potentially present challenges or constraints for accommodating the 64 aircraft identified in the previous table. The site was evaluated for compliance with airfield and airspace design standards, conformance to tenant lease obligations and operations, utility infrastructure and environmental considerations. **Figure 4** graphically depicts the site considerations that were identified and examined in this study. The following subsections summarize the considerations evaluated under four major criteria.

**FIGURE 4**  
**MID-FIELD AIRPARK SITE CONSIDERATIONS**



Source: RS&H Analysis, 2021



**Airfield / Airspace Design Standards** – This criterion identified FAA design standards and the limits for protecting navigable airspace surfaces. The Taxiway B Object Free Area (TOFA), aircraft parking limit line and the Transitional Surface defined in 14 CFR Part 77, *Safe, Efficient Use, and Preservation of the Navigable Airspace* were identified for evaluation. Taxiway B serves Airplane Design Group IV<sup>2</sup> aircraft. Taxiways serving this ADG have a defined TOFA dimension from the centerline of the taxiway to a fixed or movable object of 121.5 feet. The TOFA is required to be kept clear of all fixed or movable objects when operations are occurring on Taxiway B.

Additionally, Runway 14R-32L has a Runway Design Code (RDC) of D-IV-4000<sup>3</sup> as identified in the recently completed master plan. Runways with a D-IV-4000 RDC have a defined aircraft parking limit line of 500 feet from the runway centerline. The aircraft parking limit line is defined by the FAA as a boundary within which no aircraft can be parked; however, the movement of aircraft is permissible.

Finally, as the Runway 14R-32L has a D-IV-4000 RDC, the Part 77 Transitional Surface slopes 7:1<sup>4</sup> starting 500 feet from the runway centerline. Identifying the Transitional Surface and the allowable heights helps to determine where new or relocated facilities could be placed without impacting navigable airspace surfaces. It should be noted that this study used the design standards contained in draft FAA Advisory Circular (AC) 150/5300-13B, *Airport Design*. At the time of this writing the current version of the AC and the one used in the recently completed airport master plan is AC 150/5300-13A, Change 1.



**Tenant Leases and Operations** – This criterion evaluated existing leases in the Mid-Field Airpark and tenant operations. Currently, hangar space is leased by KCIA to tenants monthly. The largest aircraft that is hangered is a Cessna Citation which is an ADG II<sup>5</sup> aircraft. Most hangered tenants are small, fixed winged aircraft, such as a Cessna 172 which is an ADG I<sup>6</sup> aircraft. The hangar located to the north houses helicopters and is supported by two helicopter pads. Existing aircraft tie-downs are designed to accommodate ADG I aircraft and are oriented north-south. Mixing fixed wing and helicopter operations can present development challenges, such as preserving additional land for aircraft circulation that may not be needed if these operations were separated. Finally, although the air traffic control tower (ATCT) is an aging facility that is beyond its useful life and according to the master plan the facility needs to be relocated, this study assumed the ATCT would be replaced after the displaced aircraft are accommodated.



**Utility Infrastructure** – This criterion identified the utility infrastructure on and surrounding the Mid-Field Airpark. A major utility corridor runs along East Marginal Way providing the Mid-Field Airpark with electrical, water, gas, and communications. In addition, there is a major stormwater line that runs east to west, from the pump station at the Mid-Field Airpark, across East

<sup>2</sup> Aircraft with a tail height no greater than 60 feet and a wingspan between 118 and 171 feet.

<sup>3</sup> A runway that can accommodate aircraft with an approach speed up to 166 knots, a tail height up to 60 feet, a wingspan up to 171 feet and an instrument approach that is no lower than ¾ mile.

<sup>4</sup> Slope shown as run over rise. For every seven feet horizontal the surface will increase by one foot.

<sup>5</sup> An aircraft with a tail height no greater than 30 feet and a wingspan between 49 to 79 feet.

<sup>6</sup> An aircraft with a tail height less than 20 feet and a wingspan less than 49 feet.

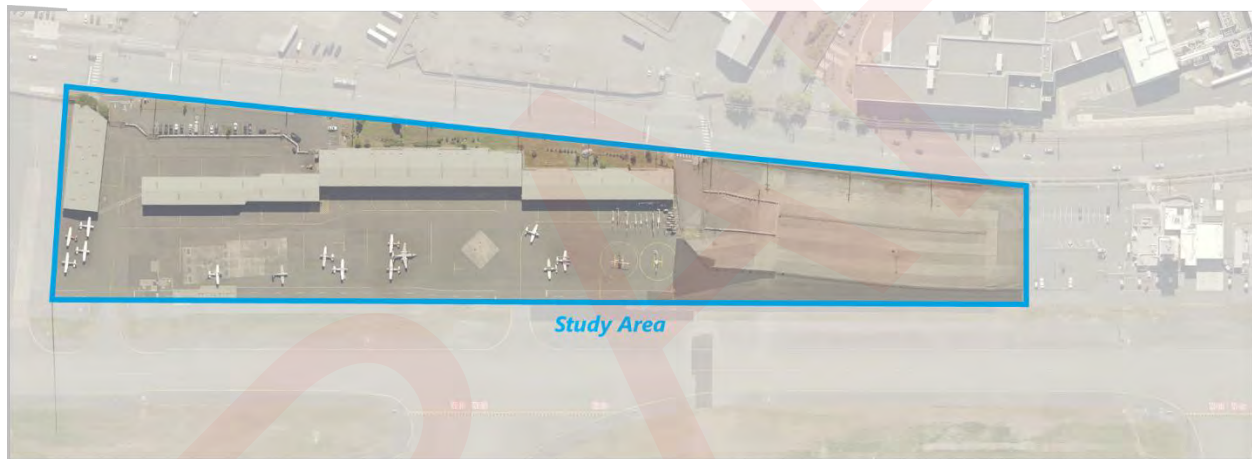
Marginal Way, and along the southern border of Jorgensen Forge site. Finally, a water quality vault is located just south of the ATCT.



**Environmental Considerations** – The Mid-Field Airpark is comprised of mostly impervious surfaces except for some landscaping between two sets of hangars and East Marginal Way. This landscaped area was identified to have no known wetlands according to the National Wetlands Inventory by the U.S. Fish and Wildlife Services and could be used potentially to further develop the Mid-Field Airpark.

**Figure 5** graphically depicts the study area after identifying and evaluating the site considerations for further developing the Mid-Field Airpark. The next step was to obtain stakeholder input for developing the Mid-Field Airpark to address how displaced aircraft could be accommodated.

**FIGURE 5**  
**MID-FIELD AIRPARK STUDY AREA**



Source: RS&H Analysis, 2021

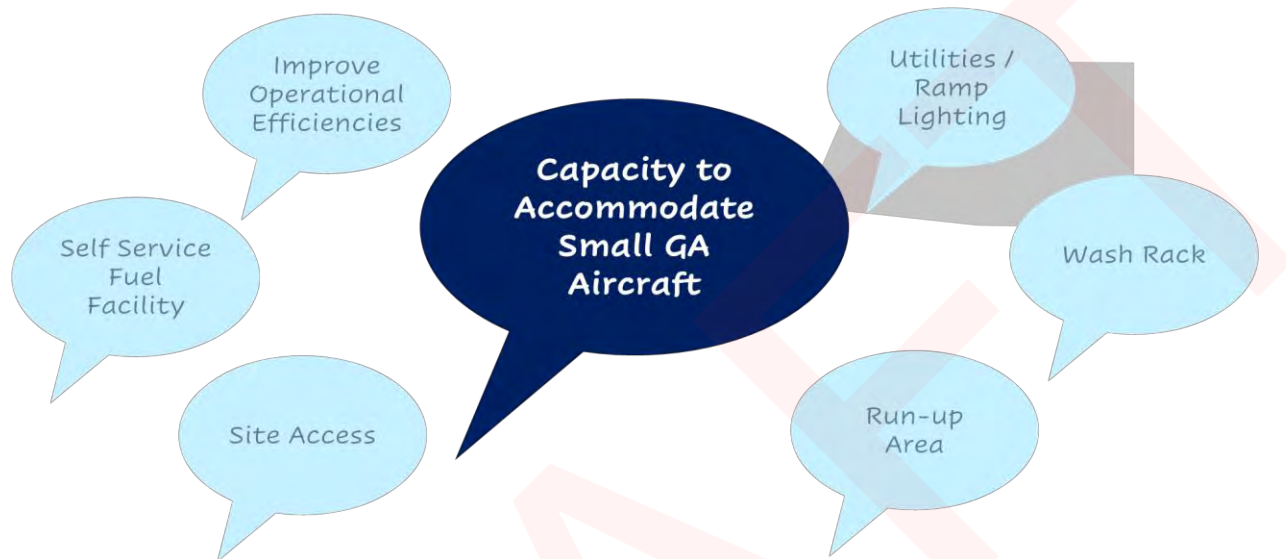
## 5. STAKEHOLDER VISION AND FACILITY NEEDS

On Thursday, May 27<sup>th</sup>, 2021, two virtual meetings were conducted with the Tenant Working Group to understand needs, desires, and gain input on how to accommodate the displaced aircraft. This Tenant Working Group was an informal group made up of tenants, users, and community members. KCIA staff encouraged widespread participation by providing meeting information on the Airport's website, social media platforms and sending emails to tenants in advance.

During these collaborative meetings, participants in the Tenant Working Group were encouraged to share their vision of the Mid-Field Airpark, their priorities for developing the site, and what support facilities they would like to see constructed. From these discussions, a large majority of the participants wanted to see the capacity for small general aviation aircraft to either remain the same or increase in the future. Second to that, the group provided suggestions for additional facilities and operational enhancements to improve the level of service at KCIA. Recommended facilities and operational enhancements included a self-service fuel facility, additional utilities and ramp lighting, a wash rack, a run-up area and additional site access. **Figure 6** summarizes the input provided during the virtual meeting which shows the major. A

detailed comment log was generated from both meetings and can be found in **Appendix A Tenant Working Group Comments**.

**FIGURE 6**  
**STAKEHOLDER NEEDS SUMMARY**



With goals, planning objectives, site considerations and facility needs defined, the next phase was to develop alternative concepts.

## 6. DEVELOPMENT OF ALTERNATIVE CONCEPTS

This section identifies and evaluates the development concepts for the Mid-Field Airpark. Alternative concepts were developed to meet the established goals, planning objectives and the tenant needs shown back in **Figure 3**. The identification and evaluation of alternatives was an iterative process, and the information presented in this section is a summary intended to present the key criteria and factors leading to the selection of the preferred development concept.

### 6.1. Alternatives Development Process

The process of determining viable alternatives, and ultimately selecting the preferred development concept, was performed in a series of interrelated steps. The first step included the creation of preliminary alternative concepts. The concepts were designed to meet planning goals and objectives, facility design standards and tenant needs. The preliminary alternatives were then evaluated based on a set of parameters and evaluation criteria. The evaluation process included input from stakeholders, which guided the refinement of the development concept. The result is a preferred development concept that was carried forward to be integrated into KCIA's capital improvement program (CIP).

### 6.2. Alternative Concepts Parameters and Evaluation Criteria

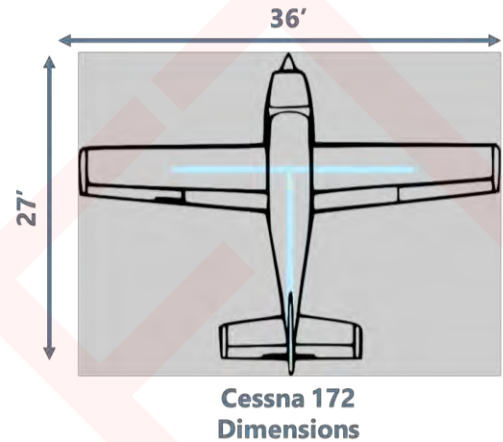
Prior to developing alternatives, a set of concept design parameters needed to be established. The design parameters ensure consistency between one concept and another. In addition, development parameters



help to ensure original planning goals and objectives are achieved. At a high level, the concept design parameters are shown in **Figure 7**.

**FIGURE 7**  
CONCEPT DESIGN PARAMETERS





- 1 Meet FAA Design Standards**  
Existing nonstandard facilities corrected, and future facilities designed to standard
- 2 Tie-Down Designed for Cessna 172**  
Aircraft parking positions are provided for single engine aircraft
- 3 Level of Service**  
Maintain existing level of service and/or enhance the user experience
- 4 Short-Term Development Parameters**  
No major infrastructure improvements or acquire additional property



Source: RS&H Analysis, 2021

Throughout the alternatives development process, evaluation was performed based on either general planning criteria, site specific conditions at KCIA, and direct feedback provided by Airport staff. At a high level, each concept was evaluated against the criteria identified in **Figure 8**.

**FIGURE 8**  
EVALUATION CRITERIA

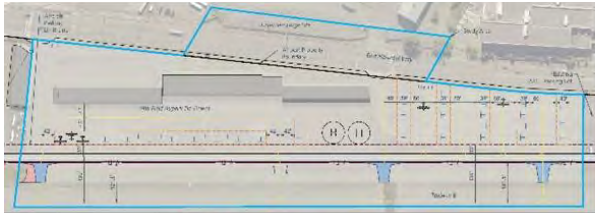
 <p><b>Capacity</b> Accommodating the greatest amount of parking positions</p>	 <p><b>Operational Efficiency</b> Reduce dead-end taxilanes, multiple apron connectors and separation of aircraft</p>
 <p><b>Support Facilities</b> Reserving land to develop facilities for tenant and users</p>	 <p><b>Constructability</b> Ease to implement and cost to construct</p>

Source: RS&H Analysis, 2021

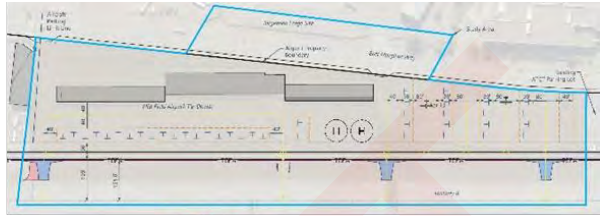
### 6.3. Initial Mid-Field Concepts

Developing concepts as previously stated is an iterative process. To get to a preferred concept, the alternatives process needed to examine numerous concepts from multiple perspectives. This study started with identifying 12 alternative concepts that addressed the planning goals, objectives, and tenant needs; however, each concept had their own unique benefits and challenges. **Figure 9** shows the original 12 concepts that were developed. These concepts were presented to KCIA staff for initial consideration and refined based on staff input.

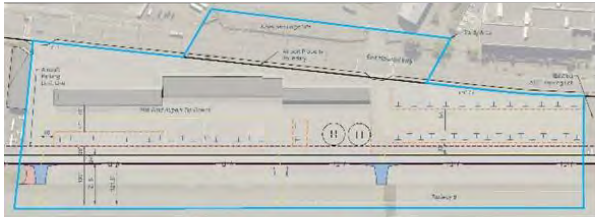
**FIGURE 9**  
**INITIAL DEVELOPMENT CONCEPTS**



**Initial Concept No.1**



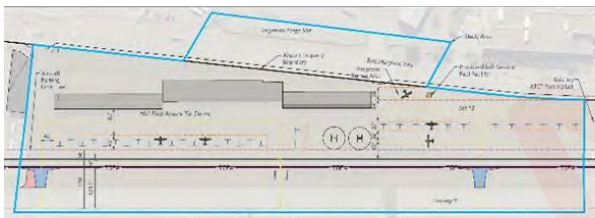
**Initial Concept No.2**



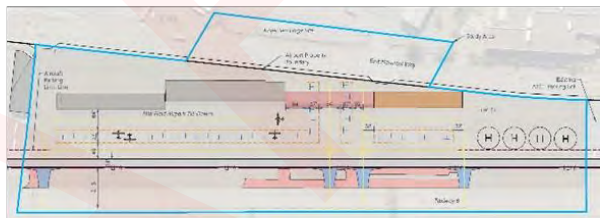
**Initial Concept No.3**



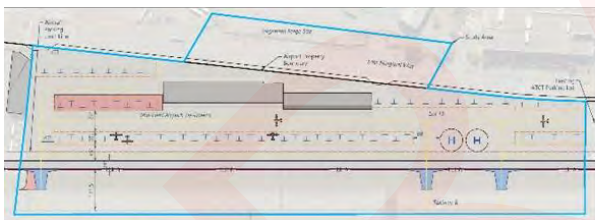
**Initial Concept No.4**



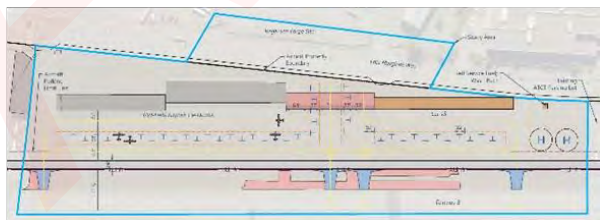
**Initial Concept No.5**



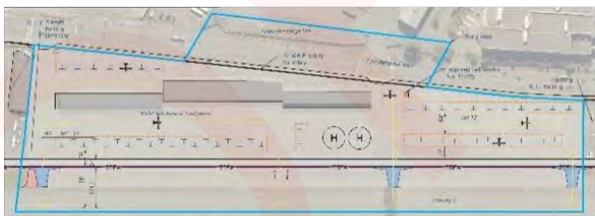
**Initial Concept No.6**



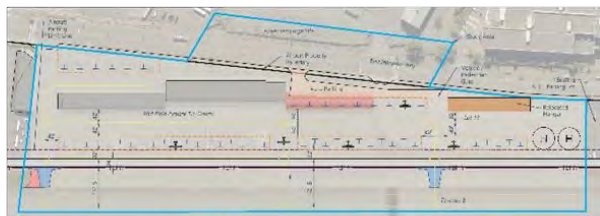
**Initial Concept No.7**



**Initial Concept No.8**



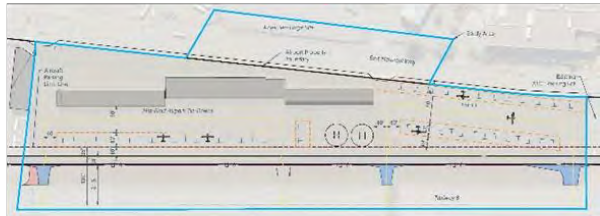
**Initial Concept No.9**



**Initial Concept No.10**



**Initial Concept No.11**



**Initial Concept No.12**

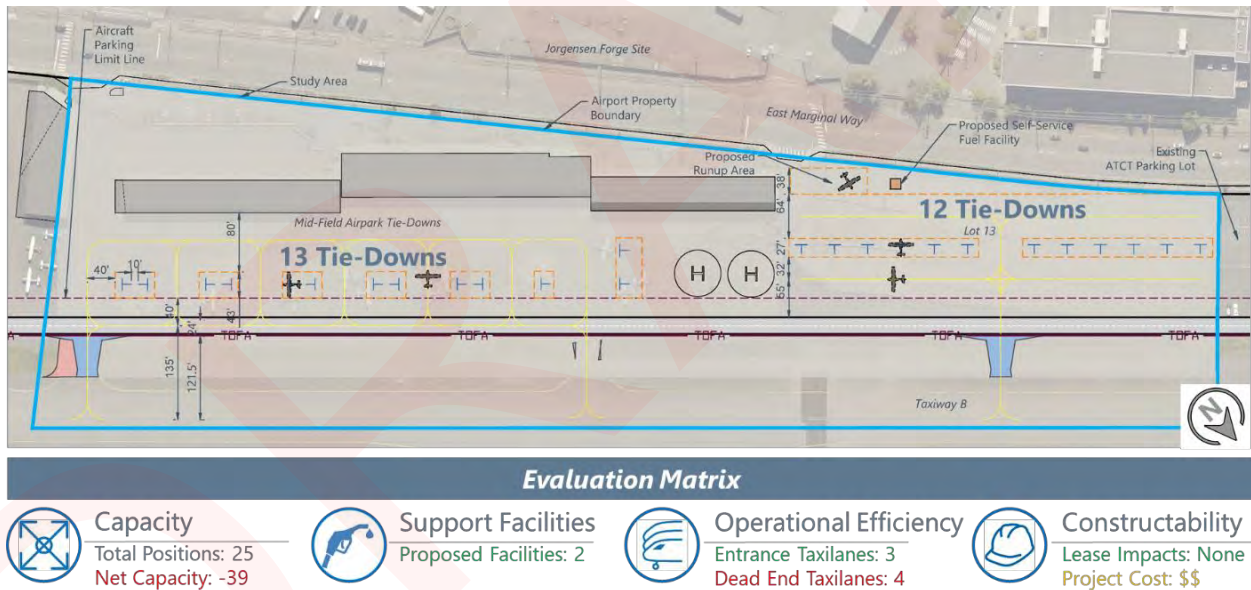
Source: RS&H Analysis, 2021

### 6.4. Mid-Field Alternative Concepts

From the initial 12 Mid-Field alternative concepts, they were further refined and paired down to six alternative concepts. These six alternative concepts provided additional details and better represented the goals, planning objectives and tenant needs. The following exhibits illustrate the six concepts that were carried forward for further consideration. Each exhibit shows the proposed concept and an evaluation matrix tied to the four evaluation criteria in **Section 1.6.2**. Text highlighted in green is an evaluation criterion that performs better than other concepts, items in orange perform fair compared to other concepts and items in red perform poorly when compared to other concepts. It should be noted that the evaluation criteria ranking is subjective; however, the criteria was able to be quantified.

Concept 1, displayed in **Figure 10**, orients the aircraft in the Mid-Field Airpark north-south with the tails pointed towards one another. For Lot 13, aircraft are parked facing East Marginal Way with the ability to power in and power out. Along East Marginal Way there is a proposed runup area and a self-service fuel facility. No facilities or existing tenants are proposed to be relocated. Finally, this concept provides 25 total tie-down positions.

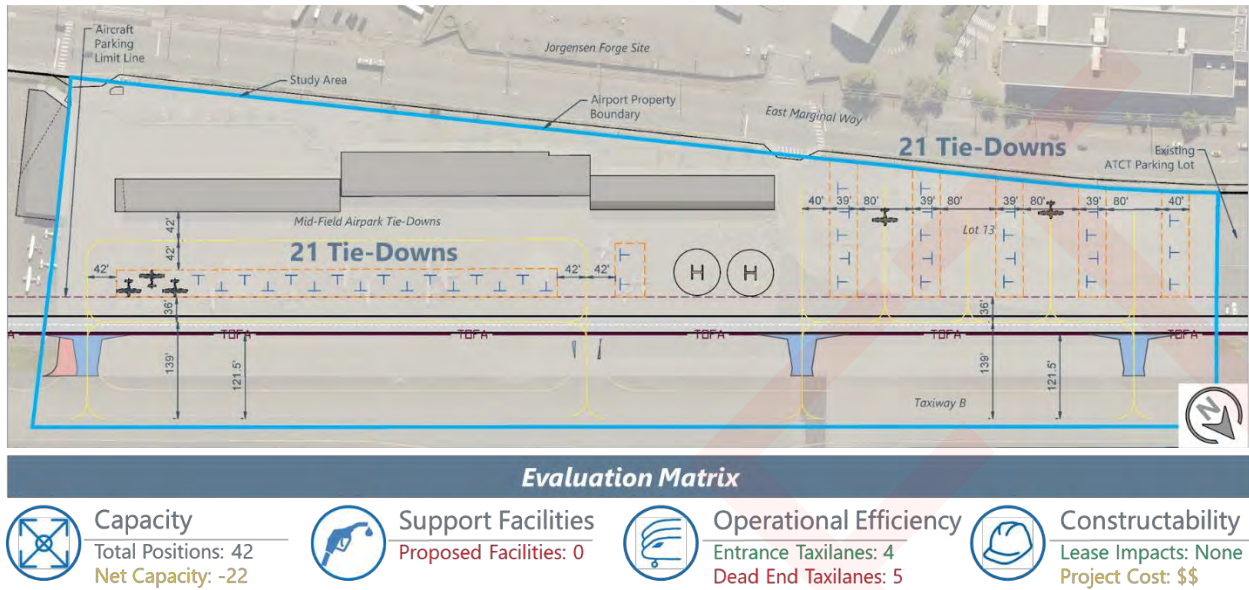
**FIGURE 10**  
**MID-FIELD AIRPARK DEVELOPMENT CONCEPT NO. 1**



Source: RS&H Analysis, 2021

Concept 2, illustrated in **Figure 11**, orients the aircraft in the Mid-Field Airpark in a single row of nested tie-downs facing east-west. The existing helicopter operations and two tie-down positions to the south would remain unchanged. For Lot 13, aircraft would be divided into five rows (four nested tie-downs and one single row) facing north-south. Two additional apron taxiway connectors would provide access for users parking in the Lot 13 area. No support facilities are proposed in this concept. Additionally, no tenants or existing operations are proposed to be relocated. Finally, this concept provides 42 total tie-down positions.

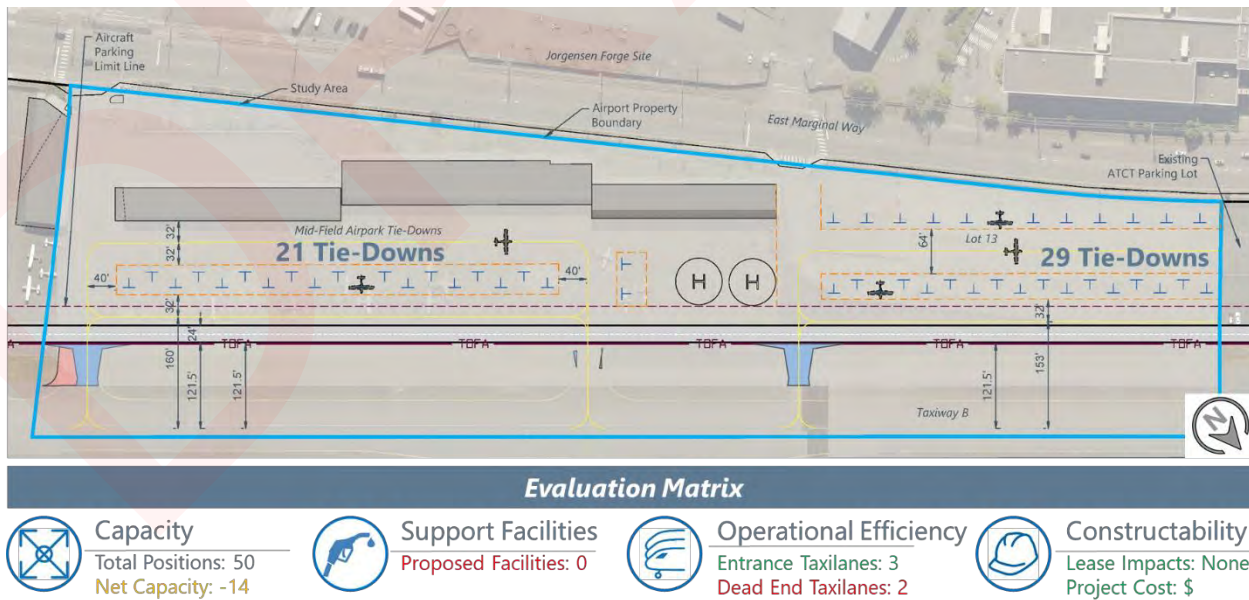
**FIGURE 11**  
**MID-FIELD AIRPARK DEVELOPMENT CONCEPT NO.2**



Source: RS&H Analysis, 2021

Concept 3, displayed in **Figure 12**, orients the aircraft in the Mid-Field Airpark similarly to Concept 2. For Lot 13, there are two rows of tie-down positions, one nested row near the VSR adjacent to Taxiway B and another single row adjacent to East Marginal Way. The aircraft are oriented east west except for the two positions south of the helicopter pads. No support facilities are proposed in this concept. Additionally, no tenants or existing operations are proposed to be relocated. Finally, this concept provides 50 total tie-down positions.

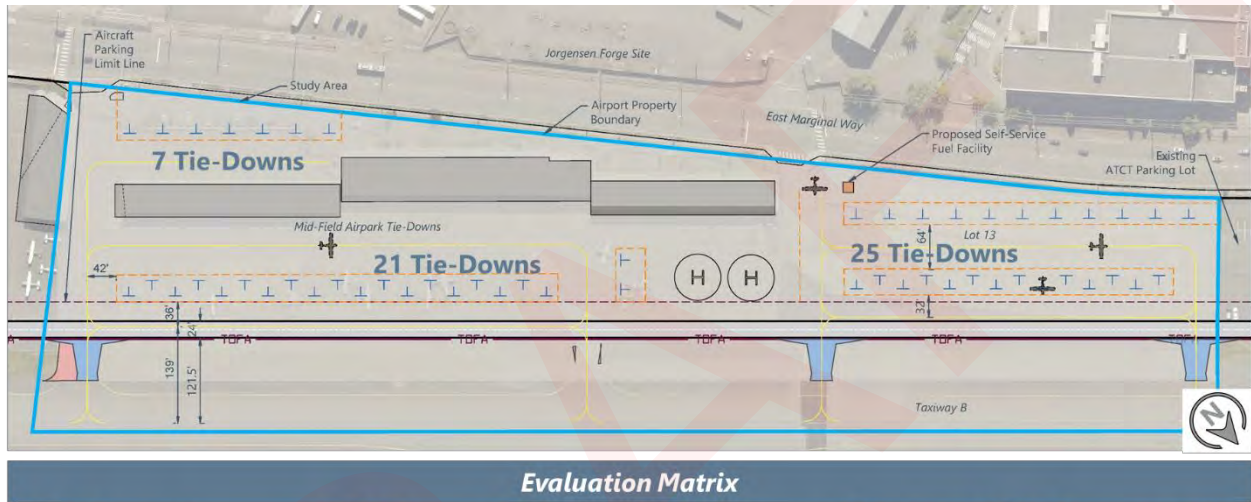
**FIGURE 12**  
**MID-FIELD AIRPARK DEVELOPMENT CONCEPT NO.3**



Source: RS&H Analysis, 2021

Concept 4, illustrated in **Figure 13**, orients the aircraft in the Mid-Field Airpark similarly to the previous two concepts. The existing parking lot along East Marginal Way would be decommissioned and converted to seven tie-down positions. For Lot 13, there would be two rows of tie-down positions, one nested row near the VSR adjacent to Taxiway B and another single row adjacent to East Marginal Way. The aircraft would be oriented east west except for the two positions south of the helicopter pads. A major difference between Concept 3 and 4 is the number of taxiway connectors to Lot 13, Concept 4 proposes two connectors versus one in Concept 3. A single self-service fuel facility is proposed on the west side of the development, adjacent to East Marginal Way. Finally, this concept provides 53 total tie-down positions.

**FIGURE 13**  
MID-FIELD AIRPARK DEVELOPMENT CONCEPT NO.4



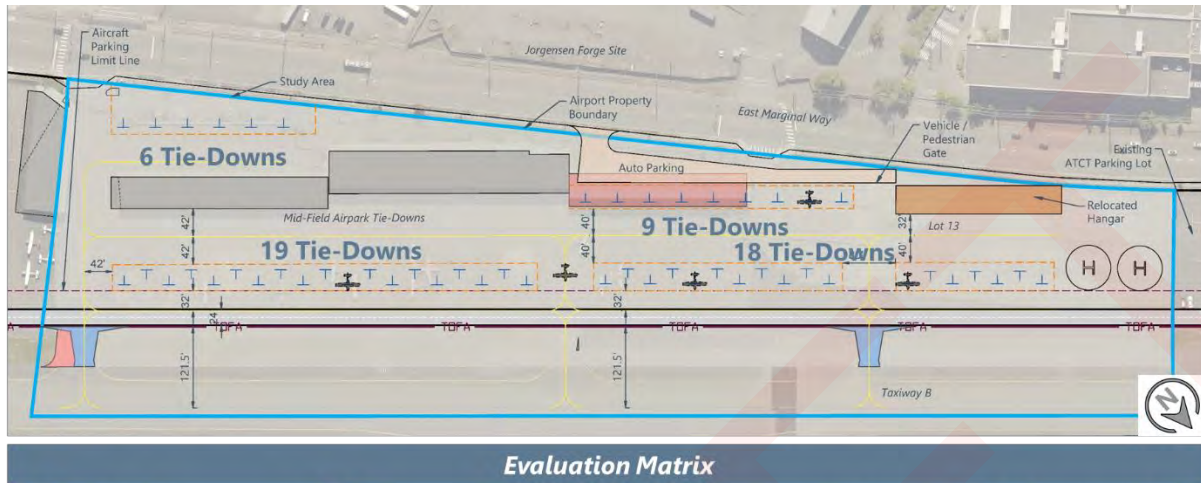
**Evaluation Matrix**

	<p><b>Capacity</b> Total Positions: 53 Net Capacity: -11</p>		<p><b>Support Facilities</b> Proposed Facilities: 1</p>		<p><b>Operational Efficiency</b> Entrance Taxilanes: 4 Dead End Taxilanes: 1</p>		<p><b>Constructability</b> Lease Impacts: None Project Cost: \$\$</p>
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Source: RS&H Analysis, 2021

Concept 5, displayed in **Figure 14**, shows a row of nested tie-downs adjacent to the VSR running the entire length of the site with east west orienting taxilanes dividing the row for circulation. The existing hangar that houses the helicopters and their operating pads would be demolished, and a new hangar and helicopter pads would be constructed towards the north. The existing parking lot along East Marginal Way would be decommissioned and converted to six tie-down positions. A new automobile parking lot would be constructed adjacent to the site where the hangar was removed, and nine tie-down positions would be constructed. No support facilities are proposed in this concept. Finally, this concept provides 52 total tie-down positions.

**FIGURE 14**  
**MID-FIELD AIRPARK DEVELOPMENT CONCEPT NO.5**

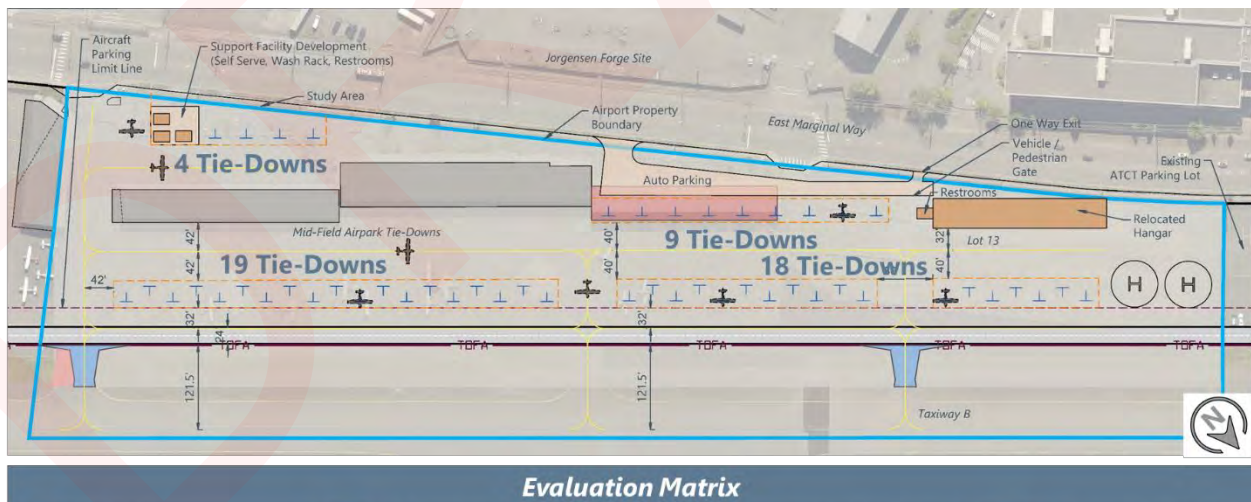


Evaluation Matrix			
<b>Capacity</b> Total Positions: 52 Net Capacity: -12	<b>Support Facilities</b> Proposed Facilities: 0	<b>Operational Efficiency</b> Entrance Taxilanes: 3 Dead End Taxilanes: 2	<b>Constructability</b> Lease Impacts: Helicopters Project Cost: \$\$\$

Source: RS&H Analysis, 2021

Lastly, Concept 6, illustrated in **Figure 15**, is almost identical to Concept 5 except a support facility complex would be constructed to provide a self-service fuel facility, wash rack and restrooms. This support facility complex would be constructed where the existing parking lot is located and would decrease the total available tie-down positions as compared to Concept 5. This concept provides 50 total tie-down positions.

**FIGURE 15**  
**MID-FIELD AIRPARK DEVELOPMENT CONCEPT NO.6**



Evaluation Matrix			
<b>Capacity</b> Total Positions: 50 Net Capacity: -14	<b>Support Facilities</b> Proposed Facilities: 3	<b>Operational Efficiency</b> Entrance Taxilanes: 3 Dead End Taxilanes: 2	<b>Constructability</b> Lease Impacts: Helicopters Project Cost: \$\$\$

Source: RS&H Analysis, 2021

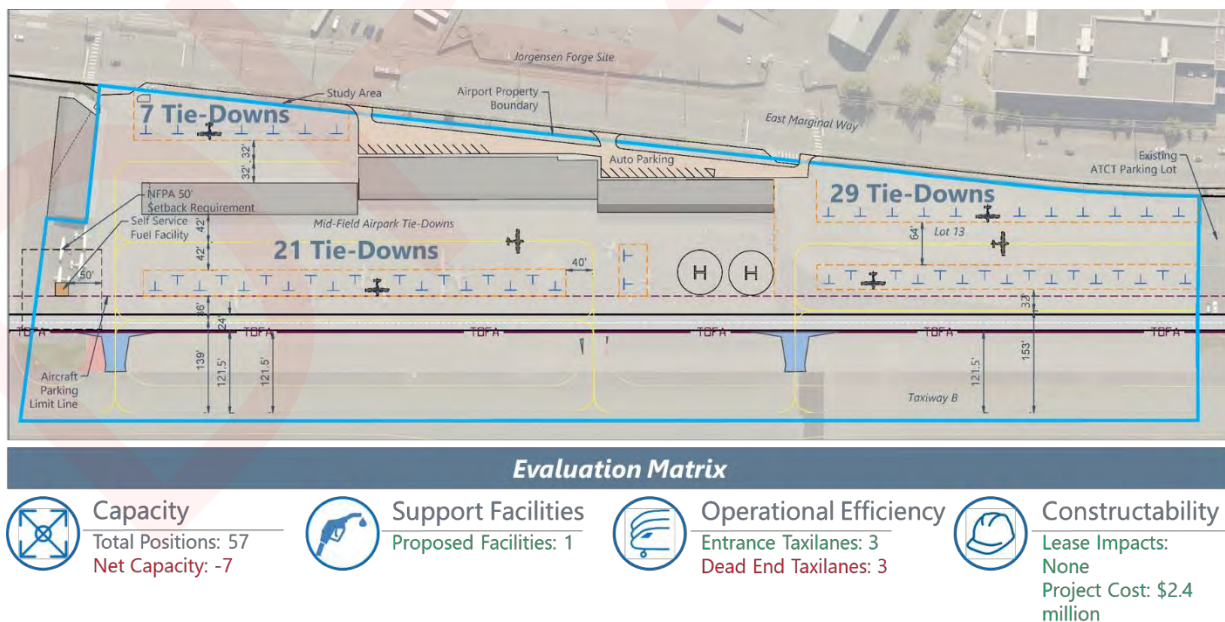
### 6.5. Stakeholder Feedback

On Tuesday, July 6<sup>th</sup>, 2021, two virtual meetings were conducted with the Tenant Working Group to gain input on the six development concepts. Input provided on the development concepts included the location of the self-service fuel facility and bringing it closer to Taxiway B, need for additional tie-down capacity and automobile parking. At the end of the virtual meetings, a poll was taken with the participants and their selected preferred concept was a blend between Concept 3, 4 and 5. Detailed comments from the two meetings can be found in **Appendix A Tenant Working Group Comments**.

Following the virtual meetings, the three concepts were refined and paired down to two options to be presented to the KCIA Leadership Team for selecting a preferred plan. Each concept was refined to include additional automobile parking in the landscaped area between the hangars and East Marginal Way, a new location for a self-service fuel facility closer to Taxiway B and additional capacity for aircraft. A ROM cost estimate was prepared for each refined concept to show the comparison in cost. A summary of the two concepts is provided below.

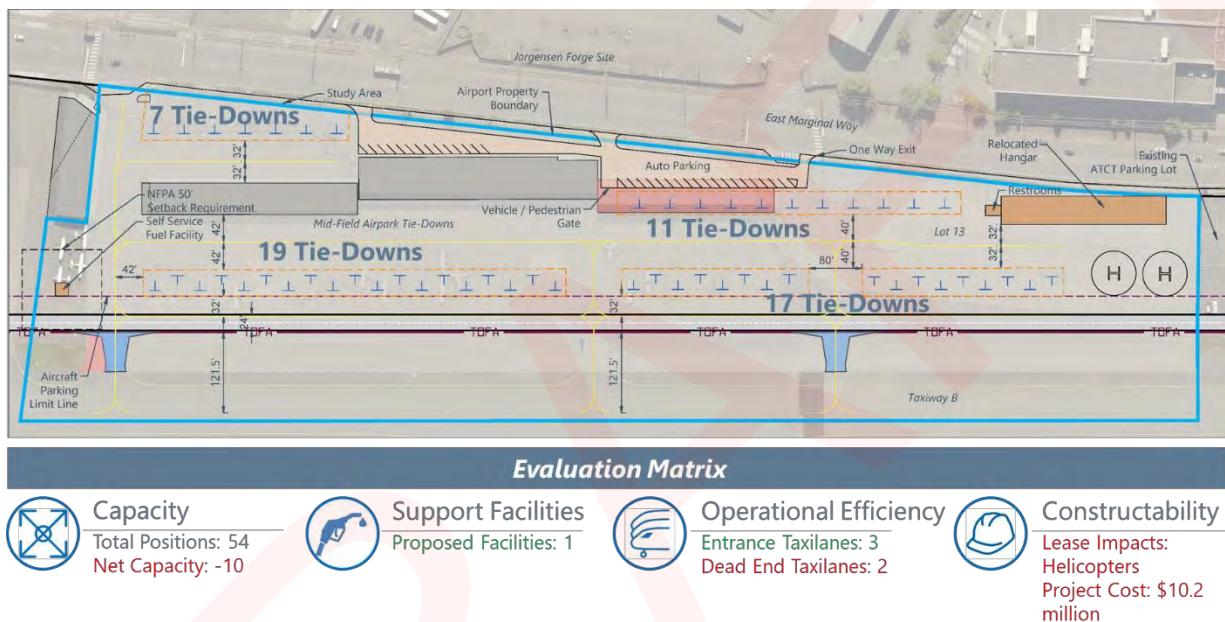
Concept 3, displayed in **Figure 16**, orients the aircraft in the Mid-Field Airpark in a single row of nested tie-downs facing east-west. The existing helicopter operations and two tie-down positions to the south would remain unchanged. The existing parking lot along East Marginal Way would be decommissioned and converted to seven tie-down positions. A new parking lot would be constructed between East Marginal Way and the two singled sided T-Hangars. For Lot 13, there would be two rows of tie-down positions, one nested row near the VSR adjacent to Taxiway B and another single row adjacent to East Marginal Way. A single self-service facility would be constructed in the southeast corner of the development site. The concept proposes no changes to existing hangars or tenants. Finally, this concept provides 57 total tie-down positions with an approximate project cost of roughly \$2.4 million.

**FIGURE 16**  
**REFINED MID-FIELD AIRPARK DEVELOPMENT CONCEPT NO.3**



Concept 5, illustrated in **Figure 17**, shows a row of nest tie-downs adjacent to the VSR the entire length of Mid-Field Airpark with taxilanes dividing the row for circulation. The existing hangar that houses the helicopters and their operating pads would be demolished, and a new hangar and helicopter pads would be constructed towards the north. The existing parking lot along East Marginal Way would be decommissioned and converted to seven tie-down positions. A new parking lot would be constructed between East Marginal Way and the two singled sided T-Hangars. A single self-service facility would be constructed in the southeast corner of the development site. Finally, this concept provides 54 total tie-down positions with an approximate project cost of roughly \$10.2 million.

**FIGURE 17**  
**REFINED MID-FIELD AIRPARK DEVELOPMENT CONCEPT NO.5**



Source: RS&H Analysis, 2021

Concept 5 was ultimately selected as the preferred concept for development as it aligned with the planning goals, objectives and tenant needs.

## 7. PREFERRED DEVELOPMENT CONCEPT

Concept 5 was selected as the preferred development concept. The plan blends the planning objectives, goals, tenant needs, and enhances safety at KCIA by resolving a nonstandard condition with minimal impact to general aviation capacity. The preferred development concept serves as a blueprint reflecting shared community values by all those that participated in this study.

Following the selection of the preferred development concept, the work items associated with implementing the project were further defined for incorporation into the Airport’s Capital Improvement Program (CIP). This project includes removing existing tie-downs within Runway 14R’s Runway Protection Zone and constructing all replacement facilities in the Mid-Field Airpark and Lot 13. The project assumes existing tie-down cabling, concrete grounding anchors and paint markings in the NE Airpark and Mid-Field Airpark will be removed. The existing pavement in the Northeast Airpark will be removed, the area



will be regraded with imported fill, and then hydroseeded. New tie-down cabling, concrete ground anchors and paint markings will be installed at the Mid-Field Airpark and Lot 13. Additionally, existing apron entrance connectors will be reconstructed to meet current FAA design standards along with constructing one new apron connector just north of Taxiway B5. Each apron connector will be designed to Taxiway Design Group (TDG) 2 standards.

The most northern single sided T-Hangar in the Mid-Field Airpark will be demolished, and a replacement hangar will be constructed on Lot 13. Automobile parking adjacent to East Marginal Way near the hangars will be demolished and reconstructed with asphalt pavement for aircraft parking. A new automobile parking lot will be constructed with asphalt pavement in the area between the hangars and East Marginal Way. The project will require reconfiguring the security fence by removing sections of existing security fence and installing new polyvinyl coated security fence.

The project will also design and construct a 500 gallon above-ground self-service fuel facility, and aircraft wash rack. Area lighting will be provided in all newly constructed areas.

The initial ROM cost estimate used to compare concepts was revised to include all the necessary actions to resolve the nonstandard condition in the Northeast Airpark as described above. The total cost for implementing the preferred concept is approximately \$19 million dollars. A project one pager, which describes the project, project justification, anticipated schedule and funding sources, was developed for integration into the Airport CIP. The proposed one-pager can be found in **Appendix B Preferred Concept Project One-Pager**.

KCIA Staff should design this project under the appropriate FAA procurement rules and process to receive reimbursement if an AIP grant is awarded for this project. Additionally, KCIA staff should consider designing this project in advance and having it ready for implementation in the event FAA discretionary funding becomes available in the future.

**Figure 18** shows a computer-generated graphic of the preferred development. The concept embodies all the input provided by stakeholders to ensure it meets the needs of the users it will serve. It also incorporates appropriate design criteria to ensure compliance with FAA design standards.

**FIGURE 18**  
**PREFERRED MID-FIELD AIRPARK DEVELOPMENT CONCEPT NO.5**



Source: RS&H Analysis, 2021

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APPENDIX A

TENANT WORKING GROUP COMMENTS

## Mid-Field Airpark Visioning Session Comment Log

King County International Airport / Boeing Field



### **Introduction:**

The recently completed airport master plan determined that several aircraft parked at the Northeast Airpark are located within the Runway Protection Zone (RPZ) for Runway 14R. Aircraft parked within an RPZ are considered to be non-standard and are therefore incompatible with airport operations. KCIA staff, with the help of our consultant RS&H, is looking at options to resolve these non-standard conditions by relocating parking positions from the Northeast Airpark to the Mid-Field Airpark. Before concepts can be developed a Visioning Session was held to identify project requirements and gain user input. The purpose of the Mid-Field Airpark Visioning Session was to allow participants to share their vision on how the Mid-Field Airpark could look in the future.

### **Meeting Times:**

The Mid-Field Airpark Visioning Session was held on Thursday, May 27<sup>th</sup>, 2021 at 11am PDT and 5pm PDT. Registration information was posted to the King County International Airport homepage, social media platforms and emailed to tenants in advance.

### **Participant Input Comments /Questions /Ideas:**

Input related to the Mid-Field Airpark was provided either in the form of a question, comment or an idea discussed during a visioning session or submitted directly to KCIA staff. Input will be used to develop and evaluate alternative concepts for developing the Mid-Field Airpark plans. The following table documents the comments, ideas, and desires, provided by stakeholders for the Mid-Field Airpark.

<b>Participant</b>	<b>Session (AM/PM) / Email</b>	<b>Comment / Question / Idea</b>	<b>Response to Comment (if applicable)</b>
Tye Allum	AM	Will the existing parking lot and amenities with the air traffic control tower change in the future?	One of the planning objectives is to not eliminate amenities ATCT currently has.
Tye Allum	AM	From an air traffic controller's perspective, relocating aircraft to the west will add workload on the controllers and increase runway crossings. How would helicopter operations be integrated into the plan?	Alternative concepts will be designed to FAA standards. An evaluation will be performed to see how the relocated general aviation traffic can be integrated into the airfield safely. The planning concepts developed will identify locations for helicopter operations and examine the relations between rotor and fixed-wing aircraft.
Warren	AM	One of the desirable features of Northeast Airpark is the wash rack. Would it be possible to include a wash rack in the Mid-Field Airpark or elsewhere on the field?	The planning study will evaluate concepts that include a wash rack facility in the Mid-Field Airpark.
Jeffrey Mirspasy	AM	For over a decade the capacity of general aviation aircraft has gone down. Will this trend be reversed or continued?	One goal of this planning study is to have no reduction in general aviation capacity by meeting FAA standards and maximizing space in the Mid-Field Airpark and Lot 13 to be used for aeronautical purposes.

<b>Participant</b>	<b>Session (AM/PM) / Email</b>	<b>Comment / Question / Idea</b>	<b>Response to Comment (if applicable)</b>
Anthonee:	AM	Ideas to consider incorporating into the Mid-Field Airpark planning study, wash rack, vehicle access to other parking locations to drain oil, electrical outlets, and ramp lighting.	Thank you for the input. The planning team will examine the ideas as they relate to this planning study.
Stephen Ratzlaff	AM	Capacity to accommodate future electric powered aircraft	Thank you for the input. The planning team will examine the idea as it relates to this planning study.
Stephen Ratzlaff	AM	What is the purpose of the aircraft parking limit line?	The aircraft parking limit line is a defined FAA separation standard. Runway 14R-32L is designed to accommodate large aircraft which requires aircraft to be parked at least 500 feet from the runway centerline. This is to increase the reliability with navigational equipment and the safety of aircraft operations.
John La Porta	AM	Any thoughts about a public viewing lot moving forward?	Thank you for the input. The planning team will examine the idea as it relates to this planning study.
Stephen Ratzlaff	AM	Would like to have a self-serve fuel site made available. Maybe this could fit within the Aircraft Parking Limit area.	Thank you for the input. The planning team will examine the idea as it relates to this planning study.
Anthonee	AM	The self-service fuel facility should be included in the Mid-Field Airpark.	Thank you for the input. The planning team will examine the idea as it relates to this planning study.
Stephen Ratzlaff	AM	How heavily used is the parking lot and space around the air traffic control tower?	The parking lot needs to accommodate 10 to 15 cars for controllers, KCIA maintenance vehicles, and aircraft rescue and firefighting. When the site was designed, it was reduced to the lowest setback distances the FAA would allow for an air traffic control facility. The planning team will review FAA ATC site development limitations as it relates to increasing allowable area for aeronautical development.
Stephen Ratzlaff	AM	Are there plans to remove the Boeing 727 currently parked in the Mid-Field Airpark?	Yes, coordination is underway with the owner to have the aircraft removed.
Stephen Ratzlaff	AM	Alternative fuel storage and dispensing.	Thank you for the input. The planning team will examine the idea as it relates to this planning study.
Evan Nelson	PM	Aircraft currently parked inside the aircraft parking limit line in the Mid-Field Airpark will they need to be moved?	Yes, planning concepts will be developed and will examine resolving current FAA non-standard design conditions identified in the recently completed Airport Master Plan for the Mid-Field Airpark.

<b>Participant</b>	<b>Session (AM/PM) / Email</b>	<b>Comment / Question / Idea</b>	<b>Response to Comment (if applicable)</b>
Byran Nairn	PM	Will this planning study look at accommodating displaced aircraft only from the Northeast Airpark or from other portions of the airfield affected by development?	This planning study will examine accommodating the displaced aircraft from the Northeast Airpark to resolve an FAA design deficiency. One of the goals is to optimize the available land to park general aviation aircraft in the Mid-Field Airpark.
Miron	PM	How many parking positions do we anticipate gaining from developing the Mid-Field Airpark?	The planning study is broken out into three phases of project work. Currently, the planning team is completing the Investigation Phase. This phase focuses on understanding existing site constraints and user needs. Following the Visioning Session, alternative concepts will be developed based on needs and desires identified by the users. Each concept will identify the number of parking positions possible in the Mid-Field Airpark and will be shared with stakeholders for input and consideration.
Alex	PM	Keep the wash rack facility and bathrooms. Examine different size tie-down positions	Thank you for the input. The planning team will examine the idea as it relates to this planning study.
Dan	PM	If facilities do not need airfield access, could they be moved in the future to accommodate additional aeronautical functions?	Thank you for the input. The planning team will examine the idea as it relates to this planning study.
Bryran Nairn	PM	Wash rack, restrooms, oil disposal, waster/garbage container and FOD bins should be included.	Thank you for the input. The planning team will examine the idea as it relates to this planning study.
Evan Nelson	PM	Can the ATCT be moved to the Jorgenson Forge Property	Thank you for the input. The planning team will examine the idea as it relates to this planning study.
Alex Fefer:	PM	The planning effort should consider accommodating the potential displacement of aircraft from the planned cargo ramp.	One of the goals of this planning exercise is to maximize the available space in the Mid-Field Airpark and Lot 13 for parking general aviation aircraft. The study is first looking to ensure the displaced aircraft from the Northeast Airpark can be accommodated adequately to resolve non-compatibility with the runway protection zone.
Miron	PM	Aircraft parking is the most important item. Anything that can be used for aircraft parking should be explored.	Thank you for the input. The planning team will examine the idea as it relates to this planning study.

<b>Participant</b>	<b>Session (AM/PM) / Email</b>	<b>Comment / Question / Idea</b>	<b>Response to Comment (if applicable)</b>
Bradley McNamara	PM	The goal of the study should be to maximize aircraft parking. Do not need self-service fuel facility or a wash rack.	Thank you for the input. The planning team will examine the idea as it relates to this planning study.
Alex Fefer	PM	Maximizing parking is critical.	Thank you for the input. The planning team will examine the idea as it relates to this planning study.
Evan Nelson	PM	Can the wash rack be moved closer within the aircraft parking limit line?	Yes, planning concepts will examine siting a wash rack facility in the Mid-Field Airpark and optimizing the available land in the area.
Patrick Gulifory	PM	Only one wash rack may be need on the airfield	Thank you for the input. The planning team will examine the idea as it relates to this planning study.
Patrick Gulifory	PM	The existing bathroom facility has worked for me.	Thank you for the input. The planning team will examine the idea as it relates to this planning study.

# Mid-Field Airpark Alternatives Presentation Comment Log

King County International Airport / Boeing Field



## **Introduction:**

The recently completed airport master plan determined that several aircraft parked at the Northeast Airpark are located within the Runway Protection Zone (RPZ) for Runway 14R. Aircraft parked within an RPZ are incompatible with airport operations and are therefore considered to be non-standard. KCIA staff, with the help of our consultant RS&H, is looking at options to resolve these non-standard conditions by relocating 45 aircraft parking positions from the Northeast Airpark to the Mid-Field Airpark. Development concepts have been generated to accommodate the displaced aircraft. The development concepts address the needs and desires discussed from the visioning session. The purpose of the Mid-Field Airpark Alternatives Presentation was to allow participants to share their thoughts and consideration on the six preliminary development concepts.

## **Meeting Times:**

The Mid-Field Airpark Alternatives Presentation was held on Tuesday, July 6<sup>th</sup>, 2021 at 11am PDT and 5pm PDT. Registration information was posted to the King County International Airport homepage and sent to the individuals who participated in the initial visioning session held on Thursday, May 27<sup>th</sup>, 2021.

## **Participant Input Comments /Questions /Ideas:**

Input related to the Mid-Field Airpark was provided either in the form of a question, comment or an idea discussed during the alternatives presentation or submitted directly to KCIA staff. Input will be used to refine alternative concepts and help KCIA staff identify a preferred. A poll was taken during both presentations and a hybrid of Concept No.3, 4 and 5 were selected as the preferred by the participants that attended the presentations. The following table documents the comments, feedback and questions from stakeholders for the Mid-Field Airpark development concepts.

Participant	Session (AM/PM) / Email	Comment / Question / Feedback	Response to Comment
Ian Marks	AM	Can aircraft of larger size be accommodated in the proposed concepts.	The tie-down positions were designed to accommodate aircraft such as the Cessna 172 which has a wingspan of 32 feet. Larger aircraft could be relocated to another area on the airport or in some concepts where extra room is available larger tie-down could be provided. Providing for larger aircraft may reduce the total number of positions available in each concept as additional spacing from taxilanes and facilities would be needed.
Ali Lee	AM	Do the concepts consider reserving land for electric aircraft charging stations?	No, not necessarily; however, the land is preserved in a select number of concepts for support facilities. If during the design for the future Mid-Field Airpark, it became necessary to include an electric charging station one could be added. In addition, the need and location of an electric charging station will also be dependent upon where the users and aircraft manufacturers are located.



Participant	Session (AM/PM) / Email	Comment / Question / Feedback	Response to Comment
Evan Nelson	AM	Is there room to move automobile parking to the west side of the middle and north hangars rather than creating a new space [as shown in Concept 5 and 6], assuming the existing lot is converted to tiedowns?	Thank you for the feedback, we will look at the possibility of extending and/or relocating vehicle parking as described.
Ali Lee	AM	Is there a higher impact on sound for the community depending on where the helicopters are located?	The helicopter noise in each development concept would remain the same. As the helicopters users would be in the same general location and no changes are being proposed to existing helicopter flight procedures.
Evan Nelson	AM	<i>Comment on Concept 4.</i> Appears to be an operational challenge with where the self-service fuel facility is located. The existing design only allows one aircraft to use the facility, if another user needs to re-fuel there is no place for the aircraft to wait.	The concept will be further examined and refined to identify a potential holding box or an area where a second aircraft could wait to fuel that does not impact others operating in the area.
Ian Marks	AM	Concept 3 has a long dead-end taxiway that would create some challenges especially during peak times. Concept 4 addresses the dead end taxiway and provides fuel services which are much needed.	Thank you for providing thoughts and input on the development concepts.
Stephen Ratzlaff	PM	Did the planning study examine how helicopter operations would impact smaller general aviation aircraft?	The planning study did examine how additional aircraft would be integrated with existing helicopter operations. The spacing between existing helicopter parking pads and aircraft tie-downs were not reduced compared to current separations. During the visioning session no issues were brought up to the planning team on existing helicopter to aircraft spacing. Additionally, the design of the helicopter pads are in accordance with FAA standards based on the rotor dimensions of the largest helicopter.
Glen Simecek	PM	Dead end taxiways are not a big concern. We have several dead end taxiways in other areas on the Airport and do not have to wait long if at all to get our aircraft in and out.	Thank you for providing thoughts and input on the evaluation criteria and development concepts.
Alex Barclay	PM	Southwest Airpark has long dead end taxiways and users work with one another to quickly get their aircraft pushed back if another is waiting. Dead end taxiways are not a concern.	Thank you for providing thoughts and input on the evaluation criteria and development concepts.

Participant	Session (AM/PM) / Email	Comment / Question / Feedback	Response to Comment
Stephen Ratzlaff	PM	The development should include a self-service fuel facility. A self-serve can save users roughly 70 cents to a dollar in fuel costs versus fueling their aircraft at the FBO.	Thank you for providing thoughts and input on the evaluation criteria and development concepts.
Patrick Guilfory	PM	Need to provide a restroom and a wash rack. The wash rack does not have to be in the Mid-Field Airpark, but somewhere on the airfield.	Thank you for providing thoughts and input on the development concepts.
Patrick Guilifory	PM	Some development concepts show extra space behind aircraft tie-downs, could this space be used by larger aircraft. In addition, did the study examine spacing requirements for low and high winged aircraft?	Development concepts that show extra space behind the tie-down positions could be used for larger aircraft; however, if larger aircraft are parked in the tie-downs, separation from the taxiway centerline to the aircraft tie-downs would increase. Additionally, aircraft tie-down positions are spaced in accordance with FAA standards. This accounts for ensuring proper separation in the event a high wing and low wing aircraft are parked side by side.
Mark Lawless	PM	For Concept 3, look at replacing the two parking positions south of the helicopter pads with a self-service fuel facility.	Thank you for your input and considerations. The planning team will further examine the idea.
Glen Simecek	PM	Prop wash from helicopter operations can pose a hazard to aircraft operations, even small maintenance items may arise for aircraft in the area.	Prop wash can pose hazards to persons and property on the ground as foreign object debris (FOD) can become projectiles. Only trained personnel should be within the 35mph prop wash radius when operations are occurring. The location of helicopter pads will be designed to meet FAA standards and account for rotor wash up to 35 mph per FAA guidance.
Stephen Ratzlaff	PM	Prefer to see helicopter operations separated from the general aviation aircraft as shown in Concepts 5 and 6. Self service fuel facility may be better suited towards the front of development versus in the back.	Thank you for providing thoughts and input on the development concepts.
Alex Barclay	PM	What is the timeline to implement this project?	Currently, we are in the planning phase, next we will begin developing a project one-pager that will define the plan and begin to program the project in the Airport's Capital Improvement Program. Based on other project priorities and available funding the project will move forward. The Airport's fiscal year consists of two calendar years, the soonest it could be programmed for design would be 2023.

Participant	Session (AM/PM) / Email	Comment / Question / Feedback	Response to Comment
Jerry Spring	Email	I would like to thank Matthew Sykora and the design team for their presentation on July 6. I am encouraged by the proposals that are providing for maximum number of spaces for small general aviation aircraft. I favor Mid-Field Airpark Concept No.4. A question I have is would it be possible to take the idea for the gas [self-service fuel facility] and wash rack in Concept No.6 and put it in No.4 where we currently drive into the area.	Thank you for providing thoughts and input on the development concept. The planning team will explore the possibility of moving support facilities to fit user and tenant needs.
Stephen Ratzlaff / behalf of Friends of Boeing Field and The Tenant Association	Email	Our preferred alternative is Design [Concept] No.4, or No.6. The reasons for this are that they provide necessary services of self-serve fuel and wash rack, while providing the number of necessary spaces. However, we think some reconfiguration is necessary. In particular, the self-serve fuel needs to have: 1) space for at least one aircraft to wait if the fueling station is occupied, and 2) space for the fueling aircraft to exit. One idea is to place the tank next to the helicopter pads so that it can block the debris from the rotor wash. Another idea is to place the wash pad near the fuel tank so it can serve as a waiting area for fuel when not used for washdown.	Thank you for providing thoughts and input on the development concept. The planning team will explore the possibility of moving the self-service fuel to a location as described.
Jeff Harrang	Email	We are a current tenant in the northeast lot. The concept options look good. We would strongly favor a concept that retains or expands the current lot capacity after the loss of the northeast area. A time saving self-serve fuel facility would be highly desirable as would some basic indoor waiting area with washrooms and WiFi for passengers and pilots, e.g. to minimize passengers standing around on the tarmac while pilots complete pre or post flight aircraft operations.	Thank you for providing thoughts and input on the development concepts. The planning team will evaluate a self-service fuel facility along with the amenities as described.

Participant	Session (AM/PM) / Email	Comment / Question / Feedback	Response to Comment
John Pavel	Email	I have been in the NE tie downs for over six years. I don't want to not be able to tie down in the future so I favor any of the designs that will provide enough space for me to continue as an airport tenant. I definitely would like to see a self-serve fuel option in the new design. I usually get my fuel when traveling to other locations as the on-site fuel is always way higher than other airports. I currently fly a Beech Bonanza 563DB	Thank you for providing thoughts and input on the development concepts. The planning team will evaluate a self-service fuel facility.
James McCrum	Email	I would very much like to have self-service fuel available at BFI and I think the Midfield Airpark would be a great location for its location.	Thank you for providing feedback on what types of facilities you would like to see developed in the Mid-Field Airpark.
Bruce Williams	Email	I support the effort, and I'm especially happy to see self-service fuel in at least some of the plans. My major concern is with Concept 6, which places four tiedowns, a self-serve facility, etc. in the southwest corner of the midfield area. Only one narrow taxiway, with limited views, provides access to this area from taxiway B. The area could easily become congested, and traffic taxiing to and from the self-serve area could conflict with no way to separate incoming and outgoing aircraft as they thread between the hangars. There is not a lot of maneuvering room in this entire area, and I worry about the potential for taxiing accidents involving aircraft, autos, and pedestrians if the self-serve fuel pumps generate traffic, as we hope they will.	Thank you for expressing your concerns with Concept 6. The planning team will evaluate other potential locations for a self-service fuel facility that enhances access and preserves space for aircraft to wait for the self-service fuel facility without impacting others.
Richard Kellum	Email	I am in favor of self-serve fuel and wash rack if possible. Option 6 get both of those. Less impact and expense is Option 4. Those are my votes.	Thank you for sharing your thoughts on your preferred concepts and the facilities you would like incorporated in the development.
John Nordstrom	Email	Strongly encourage fuel (self-service) as shown on two or three proposals.	Thank you for providing feedback on what support facilities you would like incorporated into the development plan.

Participant	Session (AM/PM) / Email	Comment / Question / Feedback	Response to Comment
Anthonee Gibbs	Email	<p>My first choice is design 4 with three additional aircraft (53 spots) and self-serve fuel. Bringing more bandwidth to the airport for GA is a priority since the waitlist is so long around here. Additionally, self-serve fuel would be a great money/time saver for those of us who do park at BFI (assuming competitive pricing). My second choice design is number 6 with the additional facilities in place. It is not my first choice due to the additional construction and hanger tear down required. Would be best to keep costs down since parking at BFI is high as it is (hangers were astronomical when I inquired in 2017). In my opinion, dead end taxiways should have little to no bearing on the design choices. It is a minor inconvenience if you go down the wrong one to turn around or if you are a junior pilot and concerned about clearance you shut down and tow it by hand to turn around.</p>	<p>Thank you for providing thoughts on your preferred development plan and the evaluation criteria used.</p>
Brad McNamara	Email	<p>Option No.1 does not support enough replacement tiedowns. Neither option with self-serve fuel is viable because neither has adequate ingress/egress space for aircraft. It's a one-at-a-time proposal and will not work when busy. There will be "traffic jams" when more than one aircraft wants to use the facility. Also, the County should not be competing with FBO's at BFI. A better solution would be to allow the return of a fourth fueler on BFI that is dedicated to small GA and on the West side of BFI. Options #2,3,5 are the best. I prefer #5 because it provides the best potential access to the Jorgenson Forge facility If that area could/would be used by small GA in the future. It also provides one of the best solutions for tiedowns. For a low-cost solution, I pick #3. For the best solution, I pick #5 because of the potential to get access to the Jorgenson Forge property, but I recognize it would be the more expensive solution.</p>	<p>Thank you for sharing your thoughts on your preferred concepts.</p>

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APPENDIX B

*PREFERRED CONCEPT PROJECT ONE-PAGER*

King County International Airport/Boeing Field - CIP Project Definition

<b>Project Title:</b>	<b>Project Manager:</b>	<b>Project No:</b>	<b>CIP/Operating Budget</b>
Construct GA Facilities for Mid-Field Airpark and Lot 13	Sykora	New	CIP

**Stakeholders:**

Matt Sykora, Tenant Relations; Peter Dumaliang, Asset Management; Morlene Mitchell, Finance; Davey Pilley, Operations; Tenant Working Group

**Project Description:**

The project will remove existing tie-downs within Runway 14R's Runway Protection Zone and construct replacement facilities in the Mid-Field Airpark and Lot 13. Existing tie-down cabling, concrete grounding anchors and paint markings in the NE Airpark and Mid-Field Airpark will be removed. Existing pavement in the Northeast airpark will be excavated and replaced with imported fill, and then hydroseeded. New tie-down cabling, concrete ground anchors and paint markings will be installed at the Mid-Field Airpark and Lot 13. The project cost assumes the existing asphalt apron does not need to be rehabilitated or reconstructed. Additionally, existing apron entrance connectors will be reconstructed to meet current FAA design standards along with constructing one new apron connector just north of Taxiway B5. Each apron connector will be designed to Taxiway Design Group (TDG) 2 standards. The most northern single sided T-Hangar in the Mid-Field Airpark will be demolished, and a replacement hangar will be constructed on Lot 13. Automobile parking adjacent to East Marginal Way near the hangars will be demolished and reconstructed with asphalt pavement for aircraft parking. A new automobile parking lot will be constructed with asphalt pavement in the area between the hangars and East Marginal Way. The project will require reconfiguring the security fence by removing sections of existing security fence and installing new polyvinyl coated security fence. The new security fence will include an 18-inch buried skirt and be topped with one additional foot of three strands of barbed wire. One 30-foot-wide rolling gate and a pedestrian gate will be installed and integrated with the airport's access control system. The project will also design and construct a 500 gallon above ground self-service fuel facility, and aircraft wash rack. Area lighting will be provided in all newly constructed areas. Finally, the project cost assumes modification to existing electrical and stormwater utility systems.

**Project Justification:**

The recently completed airport master plan determined that several aircraft parked at the Northeast Airpark are located within the Runway 14R Runway Protection Zone (RPZ). Aircraft parked within an RPZ are incompatible with airport operations and therefore considered to be a nonstandard condition by the FAA. As KCIA operates under a 14 CFR Part 139 certificate and receives federal funding for capital projects, the Airport needs to comply with grant assurances by operating the airport within FAA standards and mitigating nonstandard conditions. The project is needed to accommodate the displaced aircraft that are currently parked within the RPZ. Removing aircraft parking positions in the RPZ will enhance safety by removing a nonstandard condition, achieve compliance with FAA design standards and ensure continued federal funding for large capital projects.

**Project Schedule:**

Procurement Start Date	Design Start Date	Design End Date	Construction Start Date	Construction End Date	<b>Project End Date</b>
November 2022	March 2023	November 2023	April 2024	October 2024	<b>October 2024</b>

**Budgeted Costs:**

Preliminary Planning	Design Services	Construction Services	KCIA Staff Support	NEPA Process:	Contingency / Escalation	Construction / Equipment
				CATEX		
\$ 0	\$ 1,298,000	\$ 1,298,000	\$ 320,000	\$ 50,000	\$ 4,524,000	\$ 11,052,400

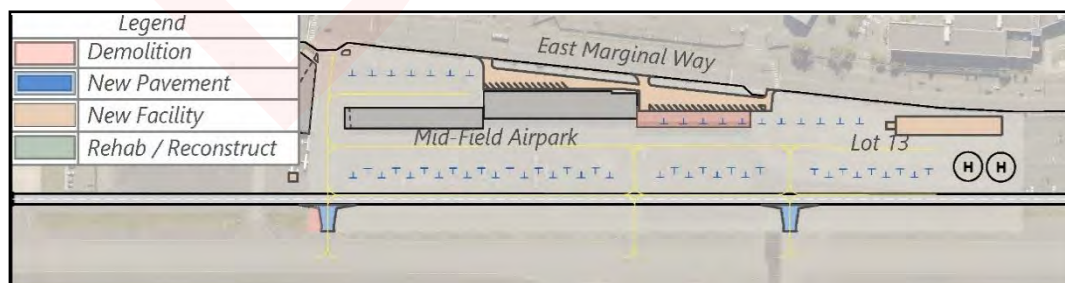
**Airport Master Project Funding Source: N/A** **No. N/A**

**Project Funding Sources:**

Airport Funds	Programmed AIP	Requested AIP	State/Local Grant	Other Funding	<b>Total Funding / Project Cost</b>
CIP	N/A	Entitlement / Discr.	N/A	N/A	
\$ 1,875,000	\$ 0	\$ 16,876,800	\$ 0	\$ 0	<b>\$18,542,000</b>

**Project Location:**

**Comments/Notes:**



Leadership Approval:  Yes  No Professional Cost Estimate Needed:  Yes  No

Updated: 8.27.2021

Approved Funding Authority:  Yes  No

Date of Estimate: August 23, 2021