4.3 Apron Area Alternatives

Aircraft parking space is currently very limited and additional parking apron is a critical need. With apron space at capacity, the airport must resort to less desirable options such as parking in turf areas and using space designated for transient parking. More importantly, the east corner of the apron lies within the Runway Visual Zone (RVZ) which, according to FAA design standards, must remain clear of objects in order to provide a clear line of sight for aircraft traversing the runways.

The analysis considered the locations of the current based aircraft and transient aircraft aprons and how those locations meet future parking and operational needs. The space needs outlined in Chapter 3, Facility Requirements were used to size alternative apron expansions proposed to fulfill the anticipated aircraft parking deficiencies over the study period.

Alternatives considered include:

- A1: No Build (Status Quo)
- A2: Based Aircraft Apron Expansion
- A3: Transient Aircraft Apron Expansion

These alternatives are shown in Figure 4.3

4.3.1 A1: No Build (Status Quo)

- It continues to the undesirable situation where the request for paved parking space is exceeded during high peak activity periods and turf areas must be utilized.
- It continues to use of transient parking space to meet based aircraft parking demand.
- It continues to have aircraft parked in the RVZ.
- It does not meet the original master planning objective to improve aircraft parking.

4.3.2 A2: Based Aircraft Apron Expansion

The existing based aircraft apron area is approximately 8,888 square yards (SY). The Facility Requirements chapter determined the based aircraft apron requirements were:

- Phase 1 - 15,720 SY for year 2011 (Deficiency 6,832 SY)
- Phase 2 - 19,080 SY for year 2016 (Deficiency 10,192 SY)
- Phase 3 - 26,340 SY for year 2026. (Deficiency 17,452 SY)

The apron dimensions needed to satisfy demand throughout the 20-year planning period is shown on Figure 4.3. The factors relevant to providing additional based aircraft apron space are:

- Potential areas for aircraft apron expansion exist to the northwest and southwest of the present apron.
- Expansion to the northwest is limited due to existing wetland areas.
- The grade in these areas fall off away from the existing pavement and fill will be required.
- Expansion to the northwest or southwest is impacted by the proposed parallel taxiway and/or taxilane.
- Parking aircraft closer to a taxiing area will result in quicker access to the airfield.
- If T-hangar development occurs the need for additional based aircraft parking space is reduced.
- Modifications to the UUU SWPPP would be required to expand aircraft apron areas.

4.3.3 A3: Transient Aircraft Apron Expansion

The existing transient aircraft parking area is approximately 4,000 SY. It is located to the east of the existing terminal/hangar area. The Facility Requirements chapter determined the transient aircraft apron requirements were:

- Phase 1 - 4,320 SY for year 2011 (Deficiency 320 SY); (added to Phase 2).
- Phase 2 - 5,400 SY for year 2016 (Deficiency 1,400 SY)
- Phase 3 - 7,200 SY for year 2026. (Deficiency 6,800 SY)

The apron dimensions needed to satisfy demands throughout the 20-year planning period to expand is shown on Figure 4.3. The factors relevant to providing that aircraft apron space are:

- Space is available to expand this apron to the southwest adjacent to Taxiway A.
- The operational effectiveness of this apron is impacted by
  - Activity to and from the hangar accessing the apron
  - The need to maintain a clear line of sight for the RVZ.
- The current deficiency (320 SY) is minimal therefore the current transient space is considered adequate until 2011. An IMPORTANT NOTE: The current transient parking space is used for based aircraft tenants therefore; based aircraft expansion is a priority and that would relieve the transient apron space.
- For 2016, the proposed expansion area is increased to provide what is considered a minimum area for expansion of approximately 3,200 SY.
Table 4.3
Apron Area Alternatives Analysis

<table>
<thead>
<tr>
<th>Analysis Factor</th>
<th>Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>A1: No-Build (Status Quo)</td>
<td></td>
</tr>
<tr>
<td>Engineering</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>Operational</td>
<td>Significant – provides no relief to the existing need for aircraft parking.</td>
</tr>
<tr>
<td>Environmental</td>
<td>None – no change.</td>
</tr>
<tr>
<td>Land Use</td>
<td>None – no change.</td>
</tr>
<tr>
<td>A2: Based Aircraft Apron Expansion</td>
<td></td>
</tr>
<tr>
<td>Engineering</td>
<td>Limited – issues pertaining to for fill and grading requirements.</td>
</tr>
<tr>
<td>Operational</td>
<td>Significant – relieves congested parking issues and clears RVZ.</td>
</tr>
<tr>
<td>Environmental</td>
<td>Limited – increases impervious surface.</td>
</tr>
<tr>
<td>Land Use</td>
<td>None – no change.</td>
</tr>
<tr>
<td>A3: Transient Aircraft Apron Expansion</td>
<td></td>
</tr>
<tr>
<td>Engineering</td>
<td>Limited – minor grading and drainage issues because it is constructed in close proximity to wetlands.</td>
</tr>
<tr>
<td>Operational</td>
<td>Significant – relieve congestion on transient apron and near terminal facility.</td>
</tr>
<tr>
<td>Environmental</td>
<td>Limited – increases impervious surface and is in close proximity to wetlands.</td>
</tr>
<tr>
<td>Land Use</td>
<td>None – no change.</td>
</tr>
</tbody>
</table>

4.3.4 Conclusion

- The locations of the existing based aircraft and transient aircraft parking aprons are effective and efficient.
- To meet the current and future aircraft parking needs, phased expansion of the based aircraft apron is needed during the planning period. Need will be coordinated with any T-hangar development.
- The initial expansion should be to the northwest of the current based aircraft apron.
- Subsequent phases should be constructed to the southwest of the existing apron to avoid conflicts with wetlands.
- Phased expansion of the transient apron is needed in the 10 year planning period.
- The proposed expansion should be to the southwest of the current transient apron.
- **The rehabilitation and expansion of the based aircraft apron is the recommended based apron alternative.**
- **The expansion of the transient aircraft apron is the recommended transient apron alternative.**
4.4 Airport Terminal, Hangar and Support Facilities

Chapter 3, Facility Requirements, reviewed the hangar space needs and concluded that alternatives for siting both T-hangars and Terminal Facilities/Conventional Hangars should be evaluated. T-hangars are single-unit aircraft hangars, while conventional hangars are generally large multi-aircraft structures.

According to Chapter 1, Baseline Conditions, hangar space is currently limited to a building that functions as a Terminal/Hangar. The hangar is used by Chris Aircraft for maintenance purposes. There is also a temporary hangar adjacent to the main building which accommodates a single helicopter.

Alternatives considered include:

S1: No-Build (Status Quo)
S2: Construct New Conventional Hangar/GA Terminal South of Existing Facility
S3: Construct New Conventional Hangar Adjacent to SRE Facility

These alternatives are developed in detail below. These alternatives are shown in Figure 4.4

4.4.1 S1: No-Build (Status Quo)
- The existing conventional hangar and GA terminal are maintained
- They will continue to provide for all anticipated needs during the planning period.
- No development will take place and no changes will occur to existing facilities and the facilities will be constrained.

4.4.2 S2: Construct New Conventional Hangar/GA Terminal South of Existing Facility
- The location has direct access to the expanded terminal/transient aircraft parking apron, but it requires:
  - Expansion of the transient apron if it is not completed in a previous project.
  - Relocation of the electrical vault or incorporated into the new facility.
  - Relocation of the rotating beacon and the temporary hangar.
- The existing automobile parking area would serve this facility but would need to be evaluated for possible expansion.
- Project includes improvements to terminal area utilities and area security lighting.

4.4.3 S3: Construct New Conventional Hangar Adjacent to SRE Facility
- The location requires an apron expansion if not expanded prior to the hangar being constructed. In this instance, the affected apron is the based aircraft parking apron.
- The existing automobile parking area would serve this facility, but would need to be evaluated/expanded based on the size of the improvements.
- Project includes improvements to terminal area utilities and area security lighting.
Table 4.4
Conventional Hangar and General Aviation Terminal Alternatives Analysis

<table>
<thead>
<tr>
<th>Analysis Factor</th>
<th>Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>S1: No-Build (Status Quo)</strong></td>
<td></td>
</tr>
<tr>
<td>Engineering</td>
<td>Not Applicable.</td>
</tr>
<tr>
<td>Operational</td>
<td>Limited – There may be space constraints in the long-term.</td>
</tr>
<tr>
<td>Environmental</td>
<td>None – no change.</td>
</tr>
<tr>
<td>Land Use</td>
<td>None – no change.</td>
</tr>
<tr>
<td><strong>S2: Construct New Conventional Hangar/GA Terminal South of Existing Facility</strong></td>
<td></td>
</tr>
<tr>
<td>Engineering</td>
<td>Limited – issues pertain primarily to fill and grading requirements.</td>
</tr>
<tr>
<td>Operational</td>
<td>Significant – increases transient parking, provides updated facilities.</td>
</tr>
<tr>
<td>Environmental</td>
<td>Limited – increases impervious surface.</td>
</tr>
<tr>
<td>Land Use</td>
<td>None – no change.</td>
</tr>
<tr>
<td><strong>S3: Construct New Conventional Hangar Adjacent to SRE Facility</strong></td>
<td></td>
</tr>
<tr>
<td>Engineering</td>
<td>Limited – Must design into grade change.</td>
</tr>
<tr>
<td>Operational</td>
<td>Significant – Provides facility in front of larger apron area.</td>
</tr>
<tr>
<td>Environmental</td>
<td>Limited – increases impervious surface.</td>
</tr>
<tr>
<td>Land Use</td>
<td>None – no change.</td>
</tr>
</tbody>
</table>

### 4.4.4 Conclusion

- Development to the sites proposed in Alternatives 2 and 3 would require evaluation at the time a proposal is received and the developer’s objectives are known.
- These two areas are both preferred areas for the development of terminal and/or conventional hangar facilities.
- There is adequate area to expand the automobile parking to the south of the SRE.
- Alternative 2 is more suitable of the two locations for a new or expanded terminal facility as a result of its close proximity to the transient aircraft apron.
- The preferred alternative will identify these two areas as the preferred locations for terminal and conventional hangar facilities.
- As a result of there being existing capacity in the terminal building and a stronger request for t-hangar facilities, the No-Build (Status Quo) Alternative is recommended for the planning period or until such time as hangar/terminal development proposal is received and evaluated. Alternative 2 and 3 building areas will be identified on the ALP as a potential long-term, phase 3 project.
4.5 T-Hangar Alternatives

The availability of T-Hangars at a general aviation airport is important to users who want to protect their aircraft from the weather elements and preserve the investment. This development is a revenue generator for the airport and attracts owners of high-end aircraft. The Facility Requirements chapter looked at the impacts of developing one or two 10-unit T-Hangar facilities at the airport. It noted that T-Hangar development would reduce the need for based aircraft apron tie down space. Leases to private investors to develop T-Hangars should include a provision that results in the hangar ultimately becoming airport property.

In siting T-Hangars, attention must be given to the level of site preparation required, availability of automobile access and parking, utilities and access to the taxiway system.

The alternatives investigated include:

- **H1 – No-Build (Status Quo)**
  - The No-Build scenario provides no space for hangars at the airport.
  - Based aircraft will continue to use apron tie down spaces.
  - An opportunity to increase airport revenue will be lost.

- **H2 – Construct T-Hangar units west of Runway 22 with access from Oliphant Lane**
  - T-Hangar units and associated paved taxi areas would be constructed to the west of the Runway 22 end (between Taxiway C and the Industrial Park).
  - Because of the space limitations both units would be aligned along the same axis.
  - This area is level and is ready for development with limited site preparation.
    - Development includes:
      - A stub taxiway to access Taxiway C,
      - Automobile parking area, an access road from Oliphant Lane,
      - Extension of utilities and security improvements.
  - Modifications to the UUU SWPPP would be required prior to constructing T-Hangars.
  - Based on demand, consideration should be given to build one 10-unit set at a time, with the southern unit to come first.
  - This area is compatible with current zoning/land use, located adjacent to the industrial park that is just west.
  - Limited environmental impacts, mostly an increase in impervious surfaces, and is outside of airport delineated wetlands.

- **H3 – Construct T-Hangar units southwest of the existing based aircraft parking apron with access from the airport’s main access road.**

- **H4 – Construct T-Hangar units east of Runway 22 with access from Oliphant Lane**

These alternatives are shown in Figure 4.5
4.5.3 H3: Construct 2 -10 Unit T-Hangars at a location behind based aircraft Apron B

- T-Hangar units and associated paved taxi areas would be constructed behind, or southwest of based aircraft Apron “B”.
- The units would be placed one behind the other as shown on Figure 4.5.
- Taxiway access will be via the based aircraft apron and Taxiway “B”.
- The existing auto parking area must be expanded to accommodate the additional vehicles.
- Access is proposed via the existing airport access road.
- Development includes extension of utilities and security improvements.
- Modifications to the UUU SWPPP would be required prior to constructing T-Hangars.
- Development of t-hangars in any other areas in this location would impact wetlands or require significant fill making them cost prohibitive.

4.5.4 H4: Construct 2 -10 Unit T-Hangars at a location to the east of Runway 22

- T-Hangar units and associated paved taxi areas would be constructed to the east of the Runway 22 end.
- Because of the space limitations both units would be aligned along the same axis.
- Development includes
  - An extended taxiway to access Runway 22,
  - An automobile parking area and access road from Oliphant Lane,
  - Extension of utility lines and security improvements.
- Modifications to the UUU SWPPP would be required prior to constructing T-Hangars.
- Based on demand, consideration should be given to build one 10-unit set at a time, with the northern unit to come first.
- There would be significant impact to delineated wetlands, requiring mitigation measures ultimately making this area cost prohibitive.
### Table 4.5
T-Hangar Alternative Analysis

<table>
<thead>
<tr>
<th>Analysis Factor</th>
<th>Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>H1: No-Build (Status Quo)</strong></td>
<td></td>
</tr>
<tr>
<td>Engineering</td>
<td>Not Applicable.</td>
</tr>
<tr>
<td>Operational</td>
<td>Significant – will not provide any covered aircraft parking.</td>
</tr>
<tr>
<td>Environmental</td>
<td>None – no change.</td>
</tr>
<tr>
<td>Land Use</td>
<td>None – no change.</td>
</tr>
<tr>
<td><strong>H2: Construct 2 -10 Unit T-Hangars at a location to the west of Runway 22</strong></td>
<td></td>
</tr>
<tr>
<td>Engineering</td>
<td>Limited – area is clear and generally flat with exception of small dirt mound</td>
</tr>
<tr>
<td>Operational</td>
<td>Significant – would provide covered aircraft parking.</td>
</tr>
<tr>
<td>Environmental</td>
<td>Limited – increases impervious surface.</td>
</tr>
<tr>
<td>Land Use</td>
<td>None – compatible.</td>
</tr>
<tr>
<td><strong>H3: Construct 2 -10 Unit T-Hangars at a location behind based aircraft Apron B</strong></td>
<td></td>
</tr>
<tr>
<td>Engineering</td>
<td>Significant – requires significant fill and grading to meet FAA standards for site and taxi lane access. Costly option.</td>
</tr>
<tr>
<td>Operational</td>
<td>Significant – would provide covered aircraft parking, but limit future based apron and hangar expansion.</td>
</tr>
<tr>
<td>Environmental</td>
<td>Limited – increase of impervious surface.</td>
</tr>
<tr>
<td>Land Use</td>
<td>None – compatible.</td>
</tr>
<tr>
<td><strong>H4: Construct 2 -10 Unit T-Hangars at a location to the east of Runway 22</strong></td>
<td></td>
</tr>
<tr>
<td>Engineering</td>
<td>Area is clear and generally flat, but would require design in wetlands.</td>
</tr>
<tr>
<td>Operational</td>
<td>Significant – would provide covered aircraft parking but requires runway crossing to access taxiway system.</td>
</tr>
<tr>
<td>Environmental</td>
<td>Significant – wetlands impacts and increase of impervious surface.</td>
</tr>
<tr>
<td>Land Use</td>
<td>None – compatible.</td>
</tr>
</tbody>
</table>

#### 4.5.4 Conclusion

**Alternative H2**

- This area of the airport is essentially ready for development.
- It is readily accessible from Oliphant Lane.
- The airfield is accessed by constructing a short stub taxiway to parallel Taxiway C.
- Site preparation includes extension of utility lines, security lighting and security improvements.
- Unlike Alternative H3 it does not limit potential expansion of the aircraft parking apron.
- It splits airfield operations. It requires aircraft to taxi from this area and cross Runway 16-34 to access fuel facilities and the terminal area.

**Alternative H3**

- It would consolidate all airfield operations in the same area.
- It would limit based aircraft apron expansion.
- It would displace the current landing site of skydivers using the airport to an area to be determined during the design phase.