Skyport Design Considerations

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Agenda

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## Design Principles

### Rider Obsessed
Any platform, be it physical or digital, should keep usability as a key aspect in their initial design. There needs to be a level of intuitiveness built in so riders don’t have to think about what they are doing. Incorporating multimodal transit with every location will create a seamless journey. Taking into account the full end to end experience will benefit the rider’s needs and experience; we think about it so they don’t have to.

### Cost Conscious
Operational Skyport networks need to be developed entirely from the ground up. Multiple facilities will need to be developed in any given city/region, this must be a product that investors, operators, building owners, and developers can build a repeatable, affordable, and viable business case around.

### Efficient
Operational efficiency will be key to the success of maximizing the total throughput for any facility. The physical relationship between the FATO/TLOF and parking/charging pads must be taken into consideration and the existing design guidance will inform the locational rules we set for optimal space utilization. The defined ‘ideal’ configurations will need to be flexible enough to adapt.

### Scalable
Reference designs need to lend themselves to some sort of regularity and repeatability in their layouts and implementation. Commonality in design will lead to more repeatable positive, practical, and efficient operational and user experiences. Maximum adaptability will be needed for scale and speed of development.

### Neighbourly
With early Skyport development likely to be reusing existing infrastructure, there must be thoughtful consideration of the community impact. Zoning, Acoustics, Safety, and Visual Pollution are a few of the impacts that will be at the forefront of this effort. Successful integration into existing urban and suburban environments will be achieved through partnered engagements with Federal, State, Local regulators, and the community directly.

### Certifiable
While there is no official Federal guidance on design criteria specifically for facilities planned for EVTOL use, much of the principles laid out in the existing FAA AC-150/5390-2C will remain valid and should be used, as well as incorporating all existing State and local building regulations. Where necessary, coordinated and collaborative efforts to revise, amend, and create new guidance will be key.
Basic Layout Assumptions
Based on AC-150-5390/2C

TLOF Diameter - 50'-0"
Maximal vehicle dimension

FATO Diameter - 75'-0"
1.5x Maximal vehicle dimension

Safety Diameter - 108'-4"
⅓ Maximal vehicle dimension
Basic Layout Assumptions
Based on AC-150-5390/2C

Parking Diameter - 50'-0"
Maximal vehicle dimension (Equal TLOF)

Parking Safety - 60'-0"
Ground Taxi 10'-0" minimum
Ramp & Deck
Simple Structure - Side Ramp

Split Level
Space Efficient Structures

Circular Ramps
High Capacity Facilities

Ramped Floors
Simple Structure - Alternative
Modified Configurations
Based on AC-150-5390/2C
Thermal Management

Battery pack thermal management will need to be provided in order to help manage the charge/discharge rate. This will contribute significantly to battery health and extend the overall lifespan. Cabin climate control to maintain comfortable climate in between operations.

Passenger Access

Safe and easy vehicle access, passenger movement from terminal to vehicle should not be obstructed by other interfaces.

Vehicle Interface

Charging

Early infrastructure should provide up to 400kW DC fast charging at each parking position. In a scenario of (1) FATO (4) Parking, multiple vehicles will be charging at any time during peak operations.

Infrastructure

Total peak load requirements could be up to 8 MW. Installation and use of behind the meter battery storage to reduce peak demand and stabilize utility draw. 3-5 MW system for a (1) FATO (4) Parking configuration.

Infrastructure

Separate chilling system for each vehicle requirement. Liquid or air cooling system for batteries will be defined by vehicle design. Cabin climate controls largely to be forced air HVAC system.

Infrastructure

Clear path of travel, intuitive wayfinding and correct vehicle identification. Access to vehicle varies by design, however path to parking pad remains consistent.