

### **ALL WHEELS UP**

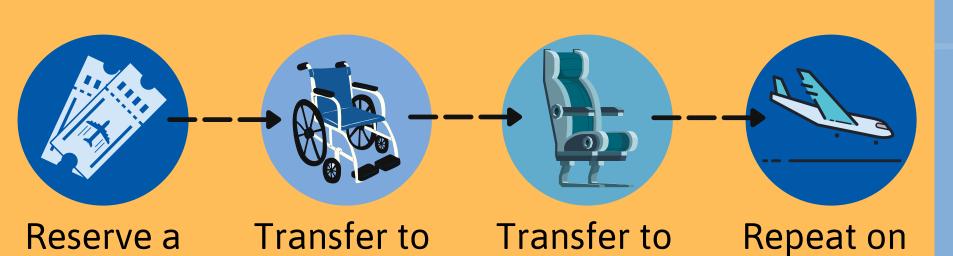
All Wheels Up is a nonprofit dedicated to accessible air travel as the only organization crash testing wheelchair tie downs and wheelchairs for commercial flight.

### PROBLEM STATEMENT

According to the DOT, airlines reported 32,445 disability-related complaints in 2019, a 7.5% increase from the previous year.

There is no clear path to design and certify WTORS for implementation.

### CURRENT BOARDING PROCESS



plane seat

landing

## **DESIGN COMPONENTS**

airport chair

seat



# MISSION REACH

ROADMAP TO ACCESSIBLE AIR TRAVEL

Anna Shah, Dawsyn Martinez, Joel Angkico, Elizabeth Mellor

SCOPE: Design a high-level roadmap to lay out the series of tasks and decisions required to implement a wheelchair tiedown and occupant restraint system (WTORS) on aircrafts.

\*Time and financial constraints are out of the scope.

# STEP 1. I Review literature & determine assumptions

### **ASSUMPTIONS**

- 1. Feasibility
- 2. Funding
- 3.Inolvement
- 4. Adaptability



Identify steps

- **DESIGN**
- 1.Start
- 2. Connect
- 3. Contact
- 4. Assess

### **CERTIFICATION**

- 1. Iterate
  - 2.Test
  - 3. Certify

### **IMPLEMENTATION**

- 1. Methodology
- 2. Training &
- 3. Application

Wheelchair Securement Concept for Airline Travel

The National Academies of

**CONSENSUS STUDY REPORT** 

**Technical Feasibility of a** 

SCIENCES · ENGINEERING · MEDICINE

### STEP 2.

Identify & meet stakeholders















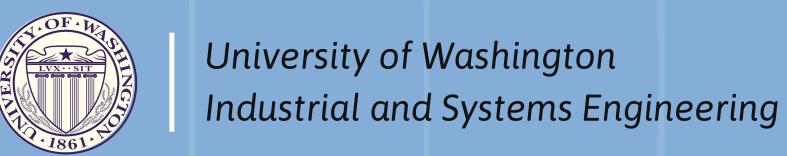




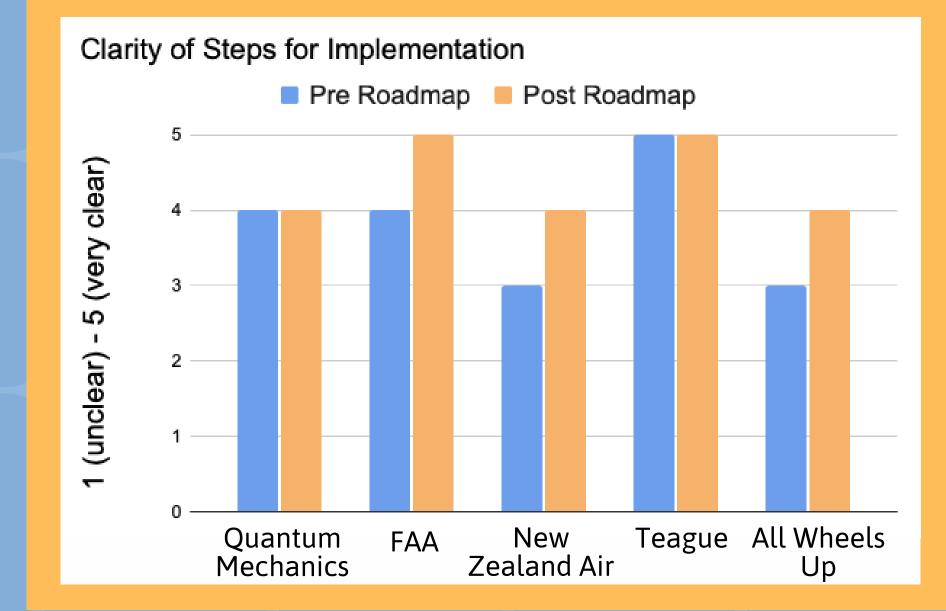
**- STEP 4.** 

Organize steps

STEP 5. Finalize roadmap



# **SUCCESS OF ROADMAP**



### **IMPACT**



Reserve a seat accessible

seating options

Board personal chair limits chance

of injury

Deboard plane personal chair not damaged

### LOOKING FORWARD



Advocate for Federal Funding



Begin Crash **Testing Efforts** 



**Evacuation Procedures**; A Disabled Passenger Transfer Sling (ADAPTS)



Fly Your Wheels Suite; Crystal Cabin Design Challenge Finalist



- Manufacturing

Special thanks to our project sponsor, Michele Erwin, and the All Wheels Up Board members.