

Update on NGENC Accessibility Working Group

Presented
To
PRIIA Next Generation Equipment Committee
Annual Meeting
February 23, 2018

Melissa Shurland
Program Manager
USDOT Federal Railroad Administration

Kristine Severson
Volpe National Transportation System Center

Dr. Katharine Hunter-Zaworski
Oregon State university

Overview

- NGEN Accessibility Working Group Progress Update
 - Spatial Study and Results
 - Feedback on Draft Final Report
 - Containment of WhMD Occupant
- RVAAC Update
- Summary
- Questions

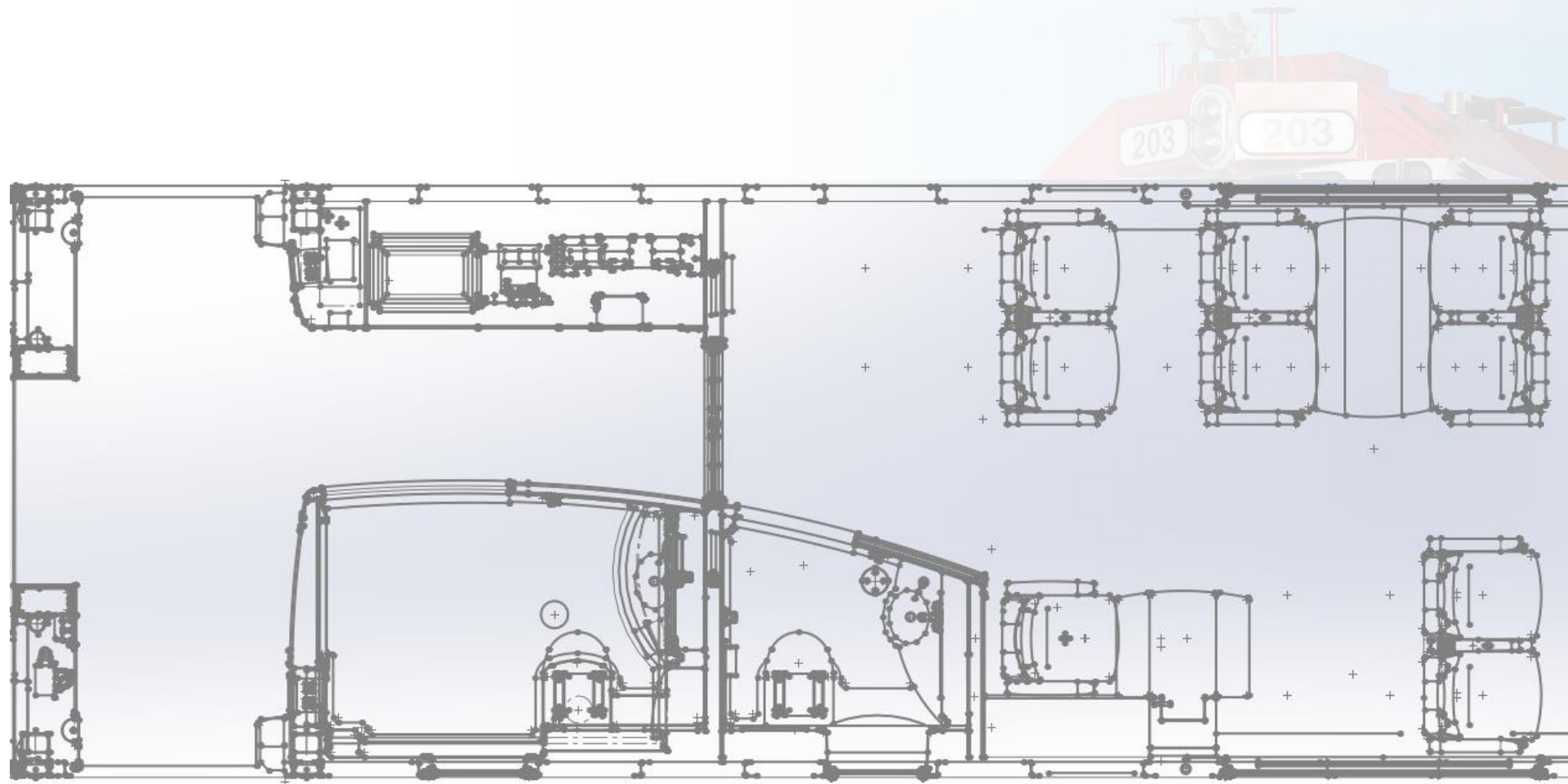


NGEC Accessibility Working Group Update

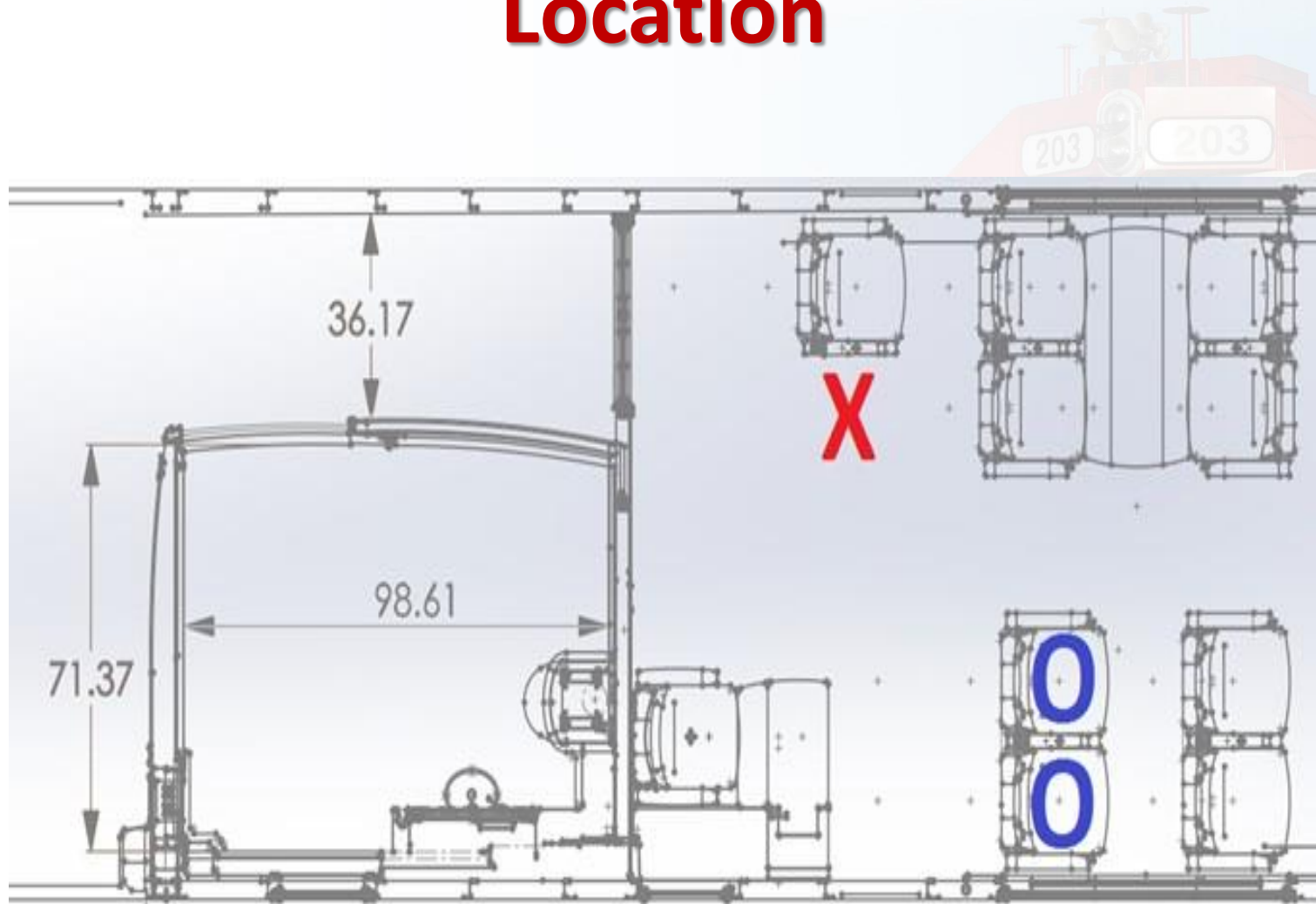
Results from Spatial Accessible Layout Study were presented to Accessibility Working Group (AWG) and Technical Subcommittee (TSC)

- Various seating layouts to accommodate 2 wheeled mobility devices (WhMD) and accessible restroom were developed
 - Issues related to containment of WhMD at accessible locations were identified
 - Manueverability of scooters using mock-up to access seating location was recommended
 - Issues with stowage of scooters were identified

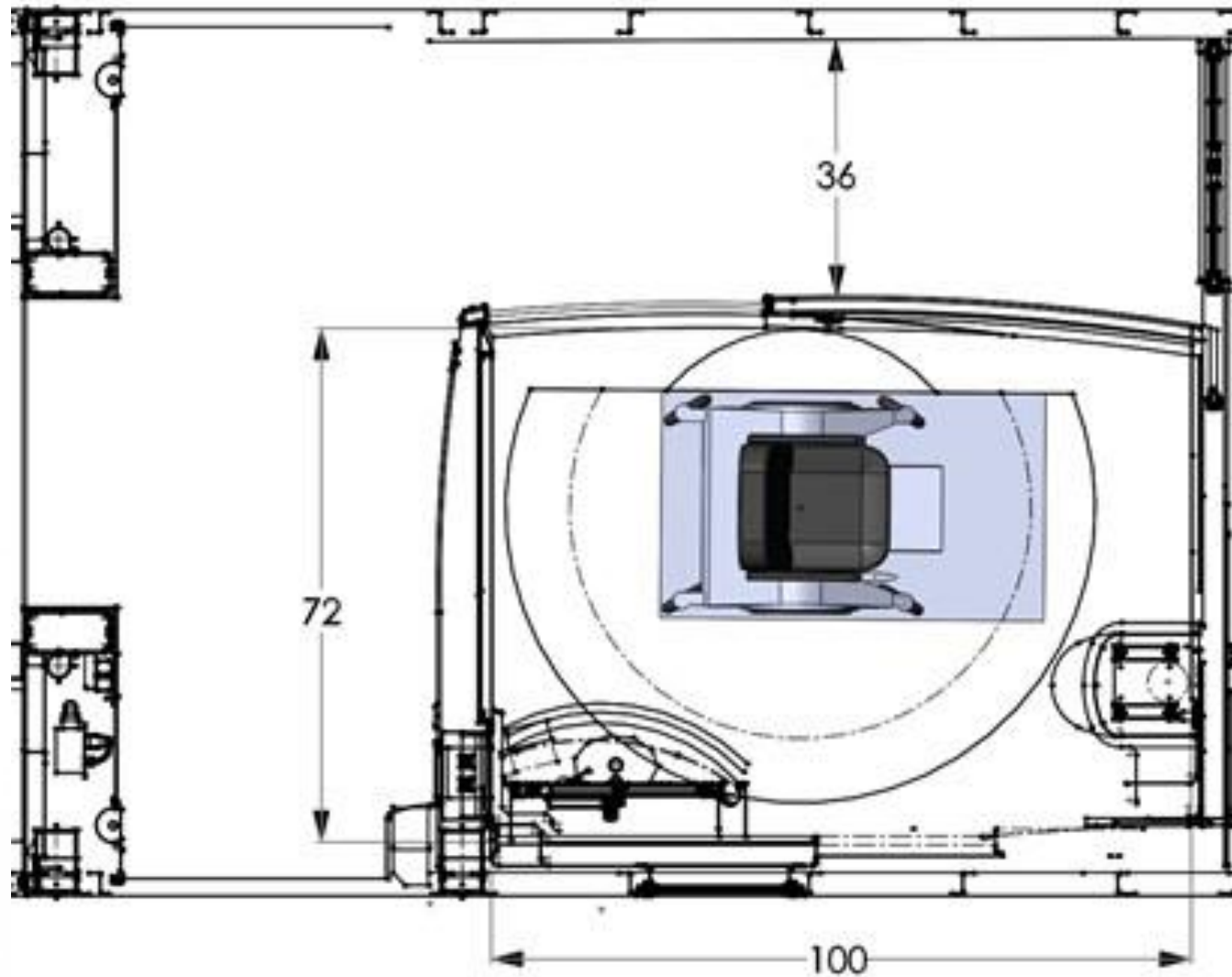
Base Layout – Acela Business Car



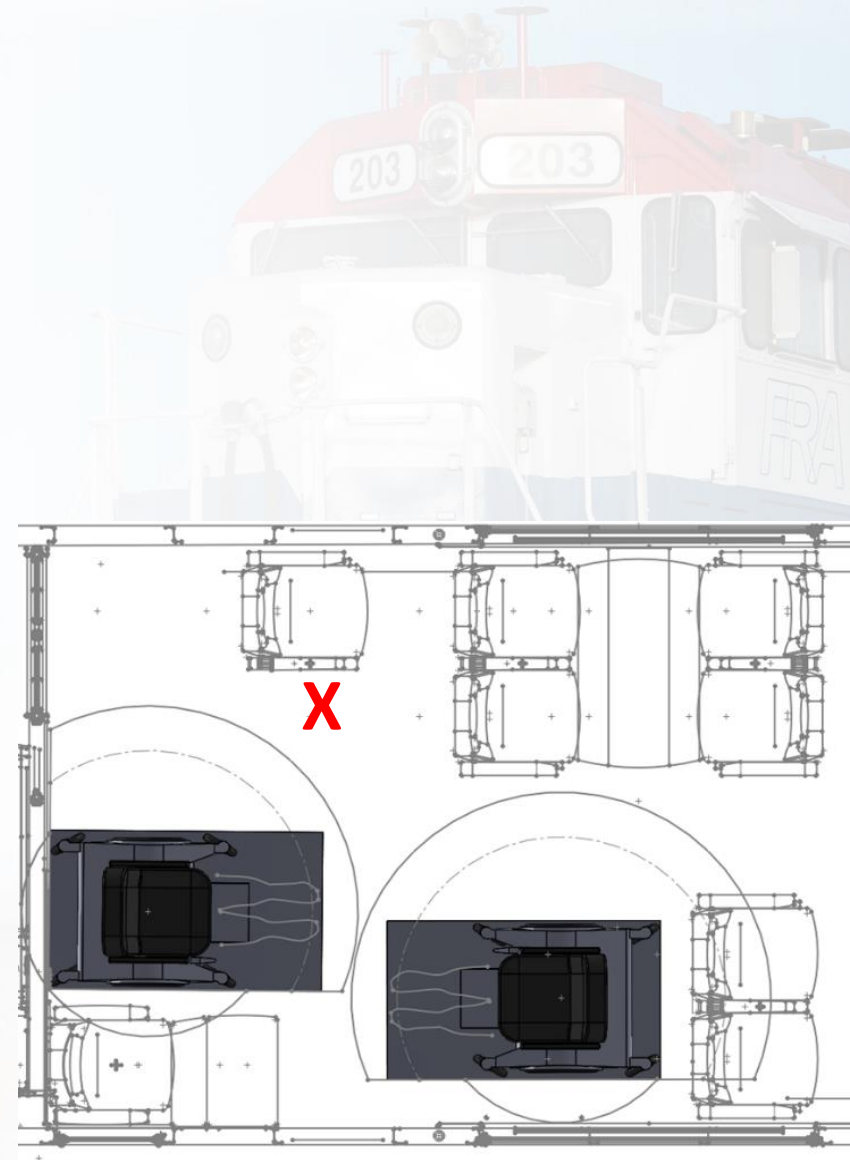
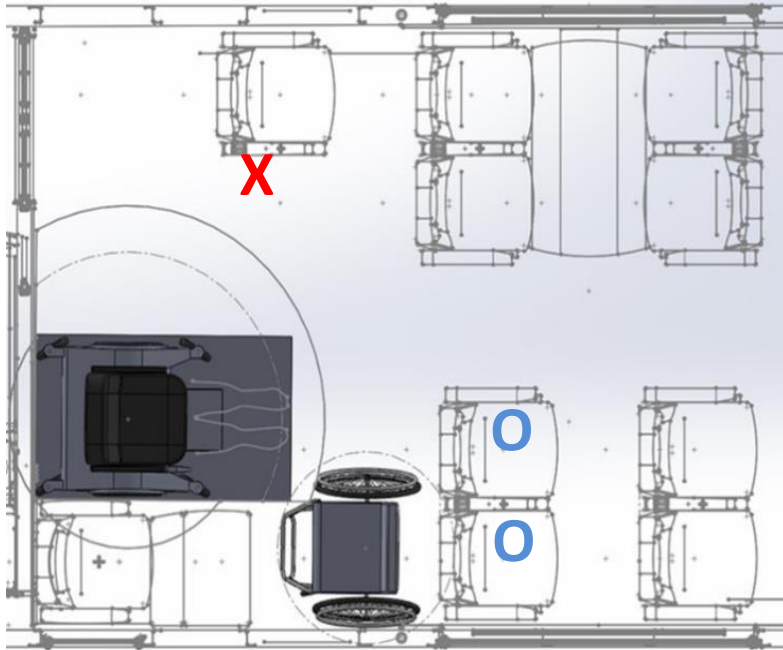
Accessible Restroom and Seating Location



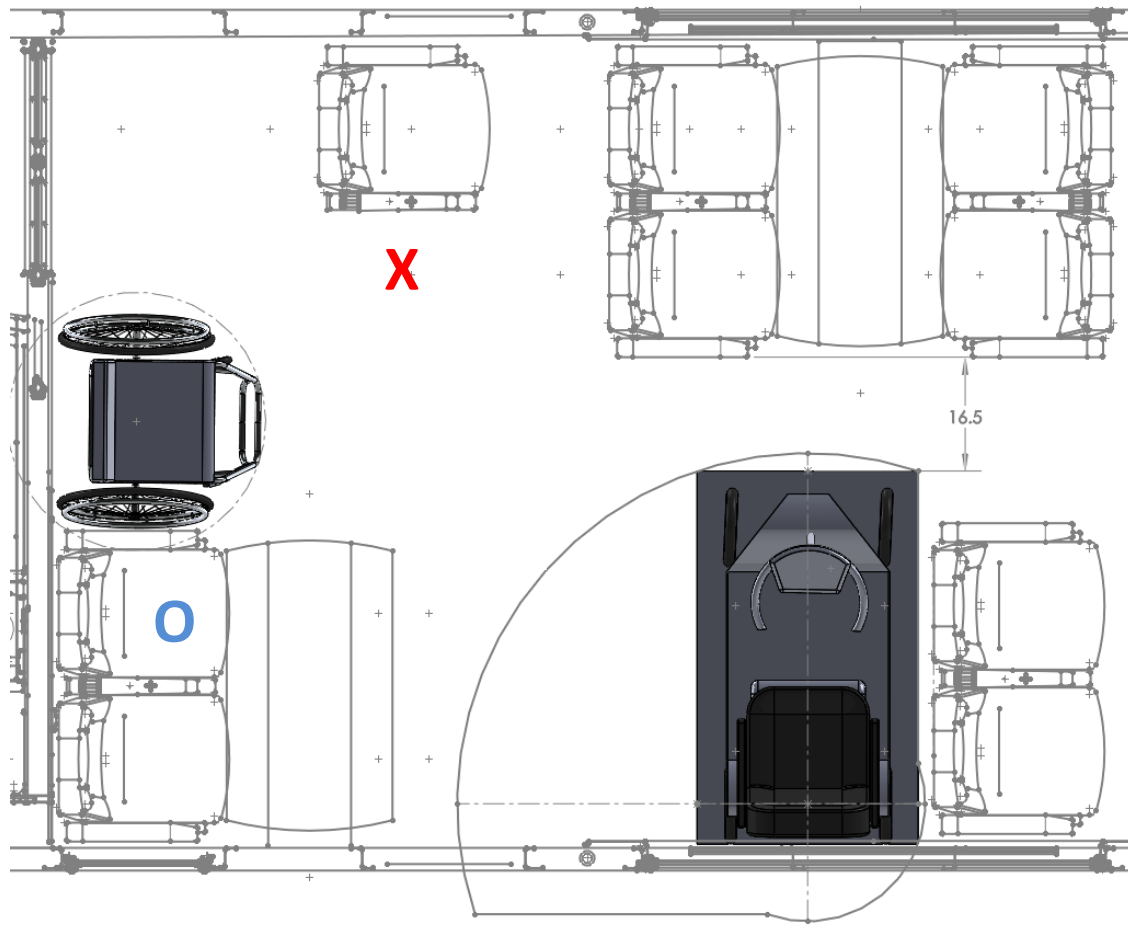
Accessible Restroom Layout



Scenarios showing 2 WhMDs



Storage of Scooter

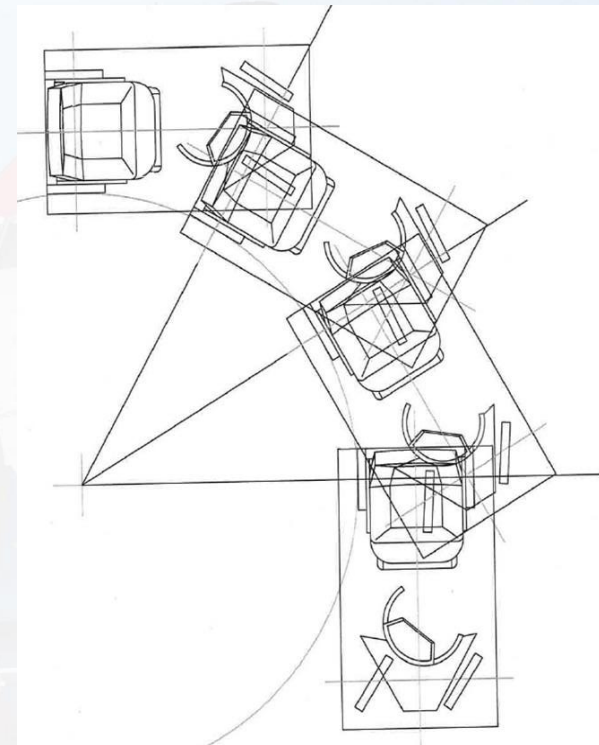


Results from Spatial Study

- Larger accessible restroom with 360° turning radius will accommodate a large WhMD
- Preliminary study indicates that two WhMD can be accommodated BUT
 - Design must take into consideration the containment of passenger in WhMD
- Stowage of larger scooters in the seating area may interfere with aisle

Draft Final Report – TSC Feedback

- Draft Final Report was developed and sent to TSC for review
- Comments received:
 - Suggestion for physical mock-up to truly assess maneuverability of scooters.
 - Clarification was made in the report to state that the actual turning radius of scooters depends on the design of the scooter. All scooters have turning radii that are much larger than power wheelchairs.
 - Schematic provided by industry member was included for illustration purposes with the permission of the commenter.



Turning radius diagram showing scooter rotating on outside wheels

TSC Feedback– Con't

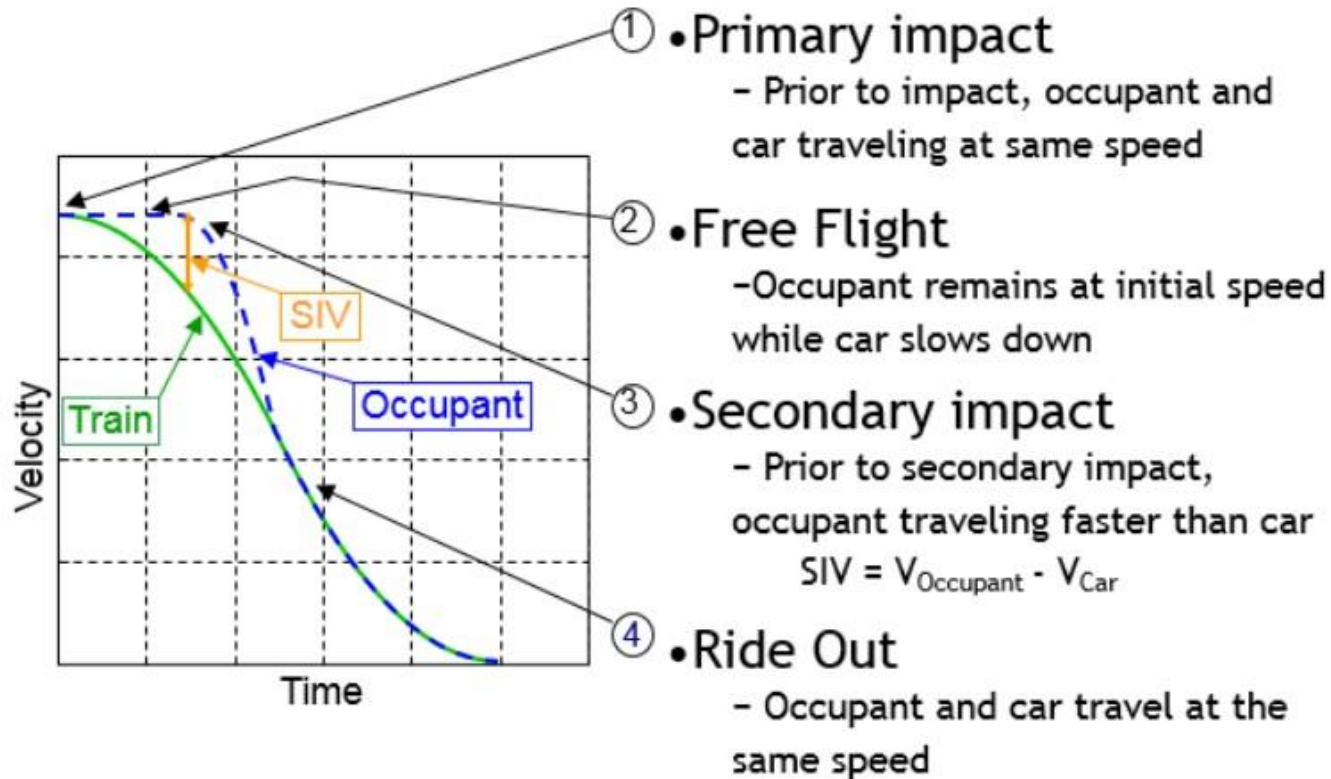
- Concerns over the recommendations of including a sharps container in the accessible restroom
 - May become a target of vandalism by people looking for needles for illicit drug use.
 - Additional maintenance for service providers
- Evacuation chair recommended in report was identified as possibly having maneuverability issues due to aisle width.

Review of Containment of WhMD

- FRA worked with Volpe Center and Oregon State University to evaluate the containment issues identified in some of the seating layout scenarios
 - Passenger rail equipment 8g longitudinal loading for accident scenarios
 - Use result to inform the disability community and US Access Board about containment and possible securement of WhMDs.

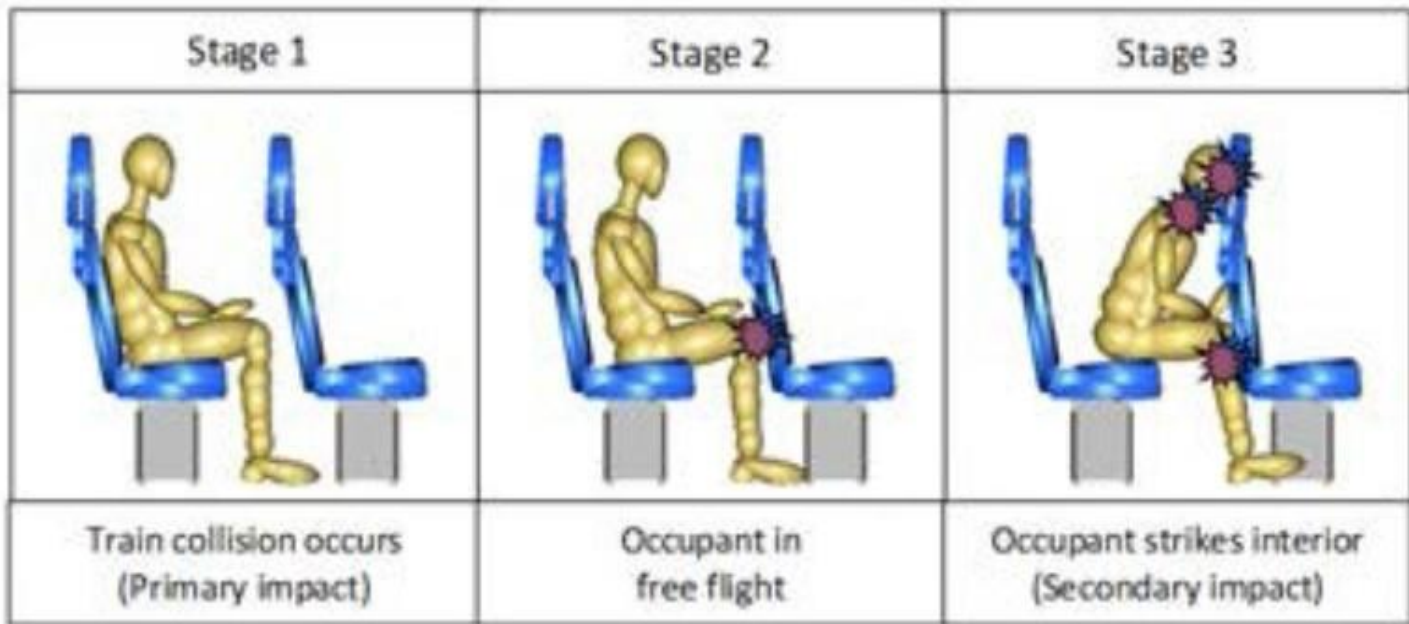
Occupant Protection Research – Foundation for the Study

- Using past research conducted by Volpe and FRA on occupant protection



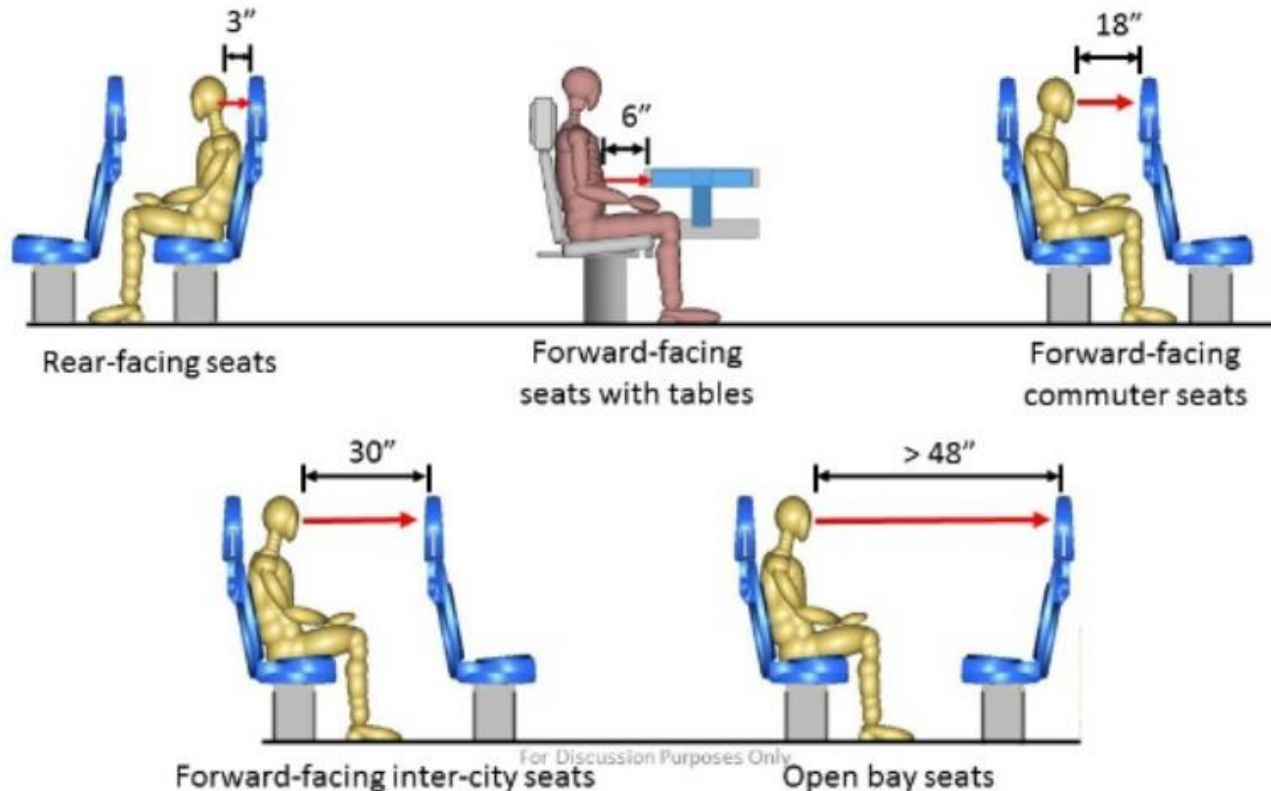
Occupant Protection Research – Foundation for the Study

- Secondary Impact Velocity is of concern for passengers on-board trains



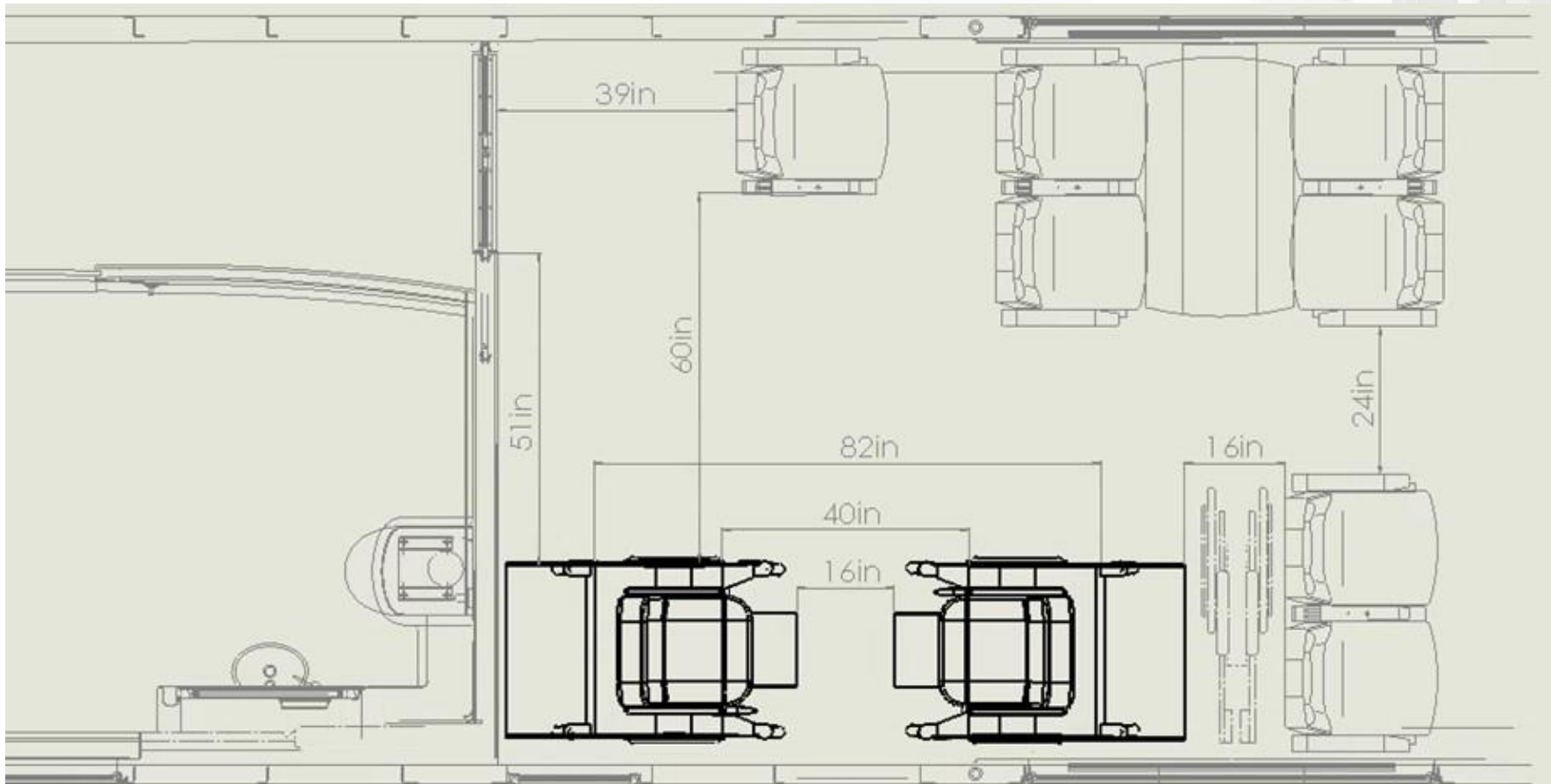
Occupant Protection Research – Foundation for the Study

- Secondary Impact Velocity is of concern for passengers on-board trains



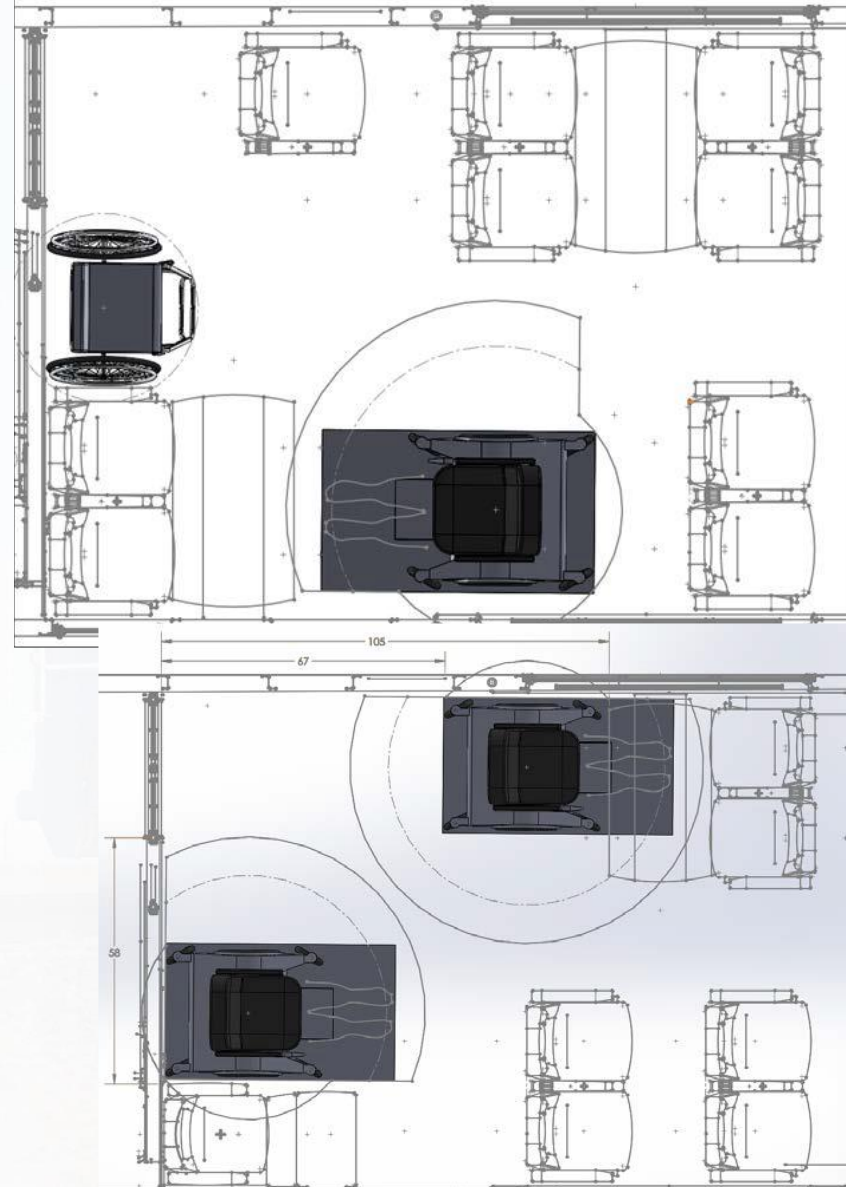
Occupant Protection Research – Foundation for the Study

- Accommodating 2 or more WhMD may result in less than adequate containment for occupant during collisions



Occupant Protection Research – Foundation for the Study

- 49 CFR §238.233 Interior fittings and Surfaces requires the securement of all interior fittings in event of collision for occupant protection.
- Row-to-row seating layout is preferred by industry to compartmentalize passengers during an accident
- Passengers in WhMD are not contained in the same way as able-bodied passengers
- Containment of WhMD needs to be taken into consideration when designing for 2 or more WhMD
- Securement of WhMD needs to be discussed with disability community



Rail Vehicle Access Advisory Committee Update

- US Access Board has moved the agenda on accessibility of rail vehicles to the pre-rule stage
- Advance Notice of Proposed Rulemaking is expected in May 2018
- Link to information page -
<https://www.reginfo.gov/public/do/eAgendaViewRule?pubId=201710&RIN=3014-AA42>
- Final RVAAC report submitted on July 29, 2015 to US Access Board available via link below
<https://www.access-board.gov/guidelines-and-standards/transportation/vehicles/rail-vehicles-access-advisory-committee/final-report>

Summary

- Two or more WhMD can be accommodated on single-level passenger trains without high loss of revenue seats
 - Containment of WhMD and occupant needs to be considered in layout design
- Larger accessible restroom with 360° turning radius is possible
- US Access Board has moved RVAAC recommendations to pre-rule stage
- FRA intends to reach out to US Access Board Staff to give a briefing on research results
- Full report on FRA/AWG research will be made available to TSC and NGEA in 2018

Questions?

Melissa Shurland

FRA Office of Research and Development

202-493-1316

melissa.shurland@dot.gov

