

Update on NGENC Accessibility Working Group and US Access Board Rail Vehicle Access Accessibility Committee Activities

Presented
To
PRIIA Next Generation Equipment Committee
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Overview

- RVAAC Background
- RVAAC Report Recommendations to US Access Board on Rail Vehicle Access
- AWG Progress Update
- Summary
- Open Discussion/Questions



RVAAC Background

- US Access Board established the Rail Vehicle Access Advisory Committee in 2013
 - Develop consensus recommendations for the Board’s use in updating sections of the ADA guidelines that cover vehicles of fixed guide-way systems, including rapid, light, commuter, intercity, and high speed rail.
 - Four Subcommittees
 - Communications
 - Boarding and Alighting
 - On-Board Circulation and Seating
 - Rooms and Spaces

RVAAC Background Cont'd

- RVAAC Final Report was presented to the US Access Board – July 29, 2015

<https://www.access-board.gov/guidelines-and-standards/transportation/vehicles/rail-vehicles-access-advisory-committee/final-report>

- 21 of 27 committee members approved the report
- (2 abstained, 4 against)
- 3 Minority Reports Submitted

Communications

- Public Announcements - audible and visible communications for live or pre-recorded announcements disseminated via PA and variable message signage systems
 - Pre-recorded announcements are preferred over live human announcements
 - ALS is required in every car if possible
- Variable Message Signs (VMS) - at least 2 VMS per car
 - Every seat must have visibility of one least one sign
- Route Map – if provided, 2 are required

Communications

- Lighting – recommends the Access Board research lighting in circulation areas, restroom, sleeping compartment, etc. for better accessibility
- Call Buttons – give audible and visual feedback upon activation
 - Tactile sign to identify purpose of button
- Tactile signs for designating rooms and spaces, exit signs, doorways

Boarding and Alighting

- Full-length or near-level boarding is preferred method as defined by DOT regulations
- Gaps – If one or both conditions below are not met, a car-borne ramp, lift or bridgeplate shall be used
 - **1.** the horizontal gap between the boarding platform and the vehicle floor entry exceeds 2 inches
 - **2.** the vertical difference between the boarding platform height and the vehicle floor exceeds plus or minus 5/8 inch.

Boarding and Alighting

	Recommendations
Carborne Lift Design Load	800 pounds minimum -lifts and for ramps and bridgeplate over 30" 400 pounds - for ramps and bridgeplate under 30"
Carborne Lift Platform	32 inches x 54 inches <ul style="list-style-type: none">• Clear width of 32 inches measured up to 40 inches above platform surface
Handrails	<ul style="list-style-type: none">• Required for ramps and bridgeplates where horizontal gap between the platform and car floor exceeds 12 inches

On-Board Circulation and Seating

	Recommendations
Doorway Width Exterior	32 inches (min)
Doorway Width Between Cars	32 inches (min)
Route to Mobility Aid Seating Location, Clear Width	32 inches (min)
Vestibule Width	44 inches (min)
Accessible Space <ul style="list-style-type: none">• Space confined on no more than 2 sides• Space confined on 3 sides	<ul style="list-style-type: none">• 32 inches x 54 inches/• 32 inches x 59 inches
Overlap of Clear Space	Allowed by a maximum of 6 inches at a minimum height of 12 inches above the floor
# Accessible Space	2

On-Board Circulation and Seating

	Recommendations
<p>Additional Seating (HST and Inter-city) Railroad must have a quantity of coaches available (10% of car type) that has seats that are removable</p>	<ul style="list-style-type: none">• Coaches > 70 feet long- at least 6 pairs of seats or a quantity that will allow up to 6 wheelchair users to remain in their wheelchairs• Coaches < 70 feet long - 3 removable seat pairs or a quantity that will allow up to a total of 3 wheelchair users to remain in their wheelchairs.• Fixed consist trains > 70 feet long - at least one coach with removable seats• Fixed consist trains < 70 feet long - at least two coaches with removable seats.

On-Board Circulation and Seating

	Recommendations
<p>Vertical Access – Movement of passengers with disabilities between levels of new intercity passenger cars</p> <ul style="list-style-type: none">• Bi-level intercity lounge cars• Dome cars• Does not include cars with kitchen on lower level• Dining cars	<ul style="list-style-type: none">• Include some means of getting passengers who cannot navigate stairs access to upper level• Same size of car-borne lift• Accessible path to/from entrance of device (both levels)• No backing in or backing out of lift• Function with or without HEP• Operable at maximum track super-elevation with train stopped• Emergency stop device provided• Obstruction detection• Operable while train is at rest or in motion• Gates, doors, guards, hand rails, etc. design to meet FRA 8g longitudinal, 4g vertical and 4 g transverse loading• Accessible restroom not required if one available on lower level

Rooms and Spaces - Restroom

	Recommendations
Turning Circle w/in restroom	60 inches or demonstrated equivalent that provides for side transfer and enter/exit in forward position
Clear Floor Space	32 inches x 54 inches
Door	Powered
Grab Bars	Sides, behind water closet, foldable grab bars permitted
Controls	Proximity sensor for faucet controls and soap dispenser

Rooms and Spaces – Dining Car

	Recommendations
Table Space	Space for 2 wheelchairs, 2 transfers and 2 stowage spaces <ul style="list-style-type: none">• Spaces can be convertible
Table Top	34 inches (max)
Clearance under table	29 inches (min)
Clearance back seating position to table edge	17 inches (min)
Width	32 inches

Rooms and Spaces– Café/Lounge Car

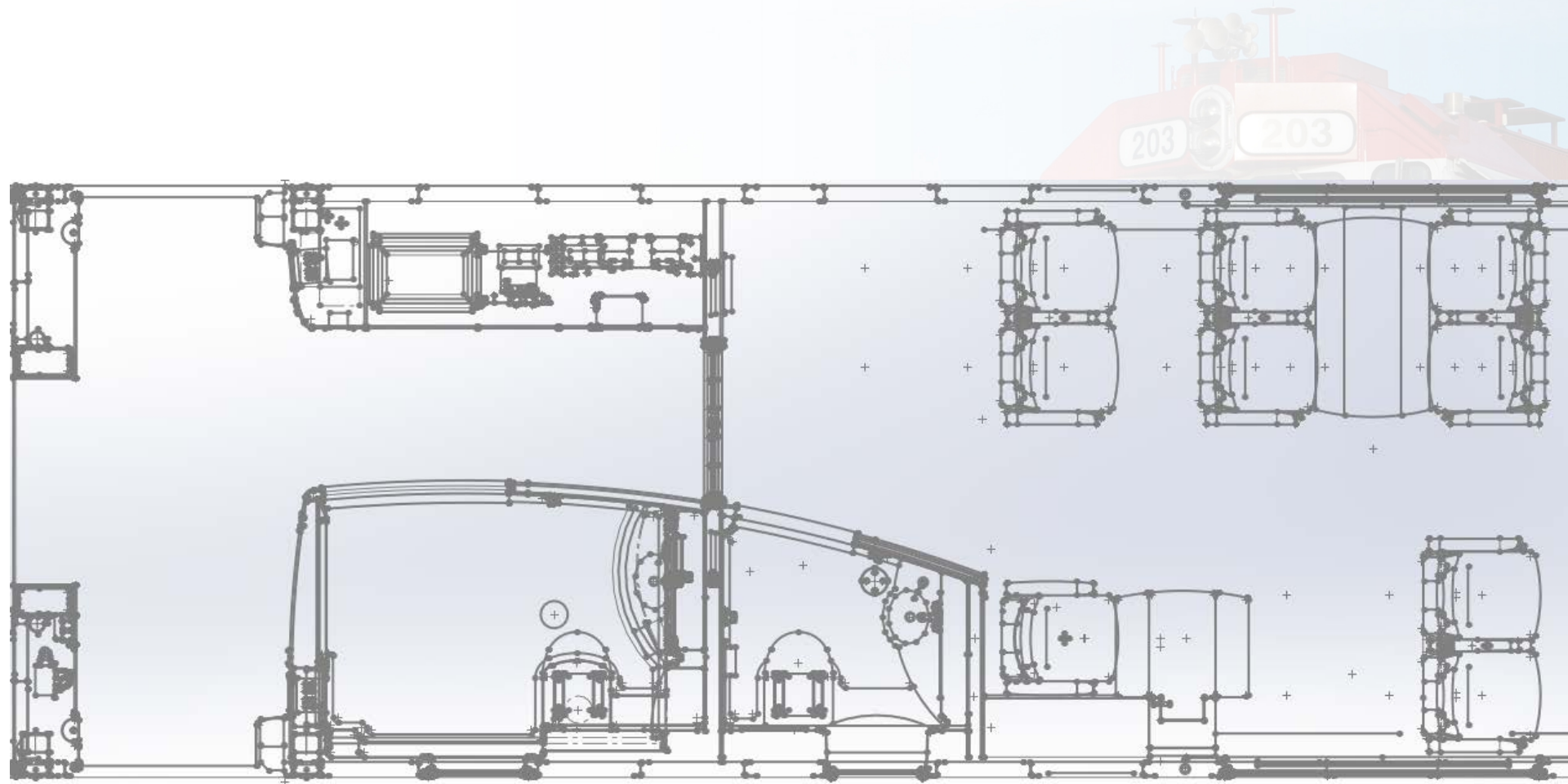
	RVAAC
Table Space, Top, Clearance	Same as dining cars
Self-serve Vending Machines	<ul style="list-style-type: none">• Meet ADA/ABA Guidelines for cafeteria• Meet ADA/ABA Guidelines
Accessible Restrooms	Same requirements recommended for accessible restroom in seating area

NGEC Accessibility Working Group

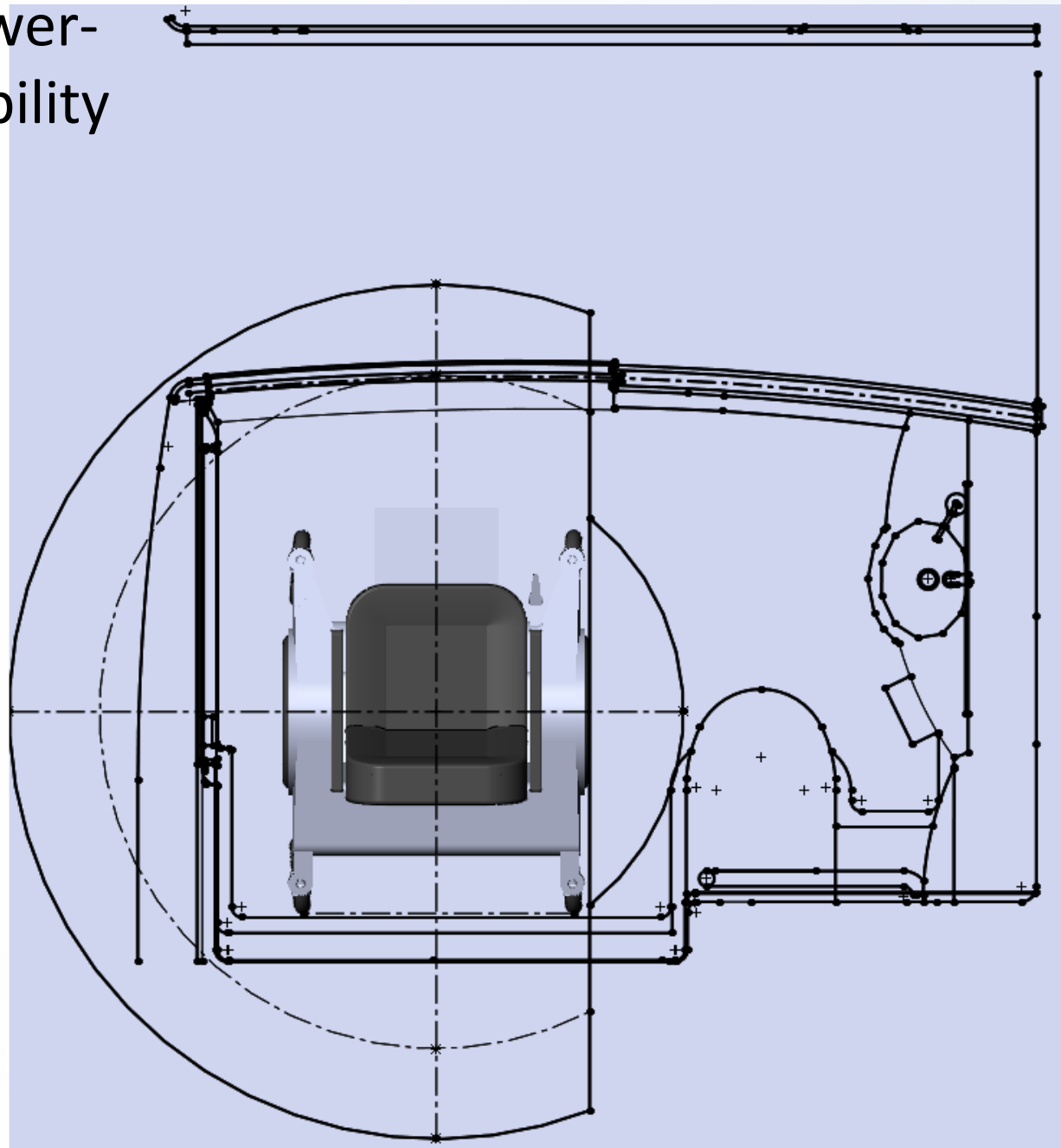
Update

- Developed preliminary accessible restroom and seating location layouts
 - Worked with the support and cooperation of Amtrak
- Accessibility Working Group Review
 - Provided feedback on restroom layout.
 - Will present seating info to AWG within next month
- Acela business class cars used in analysis
- Large power-based wheeled mobility device used in analysis

Base Layout – Acela Business Car

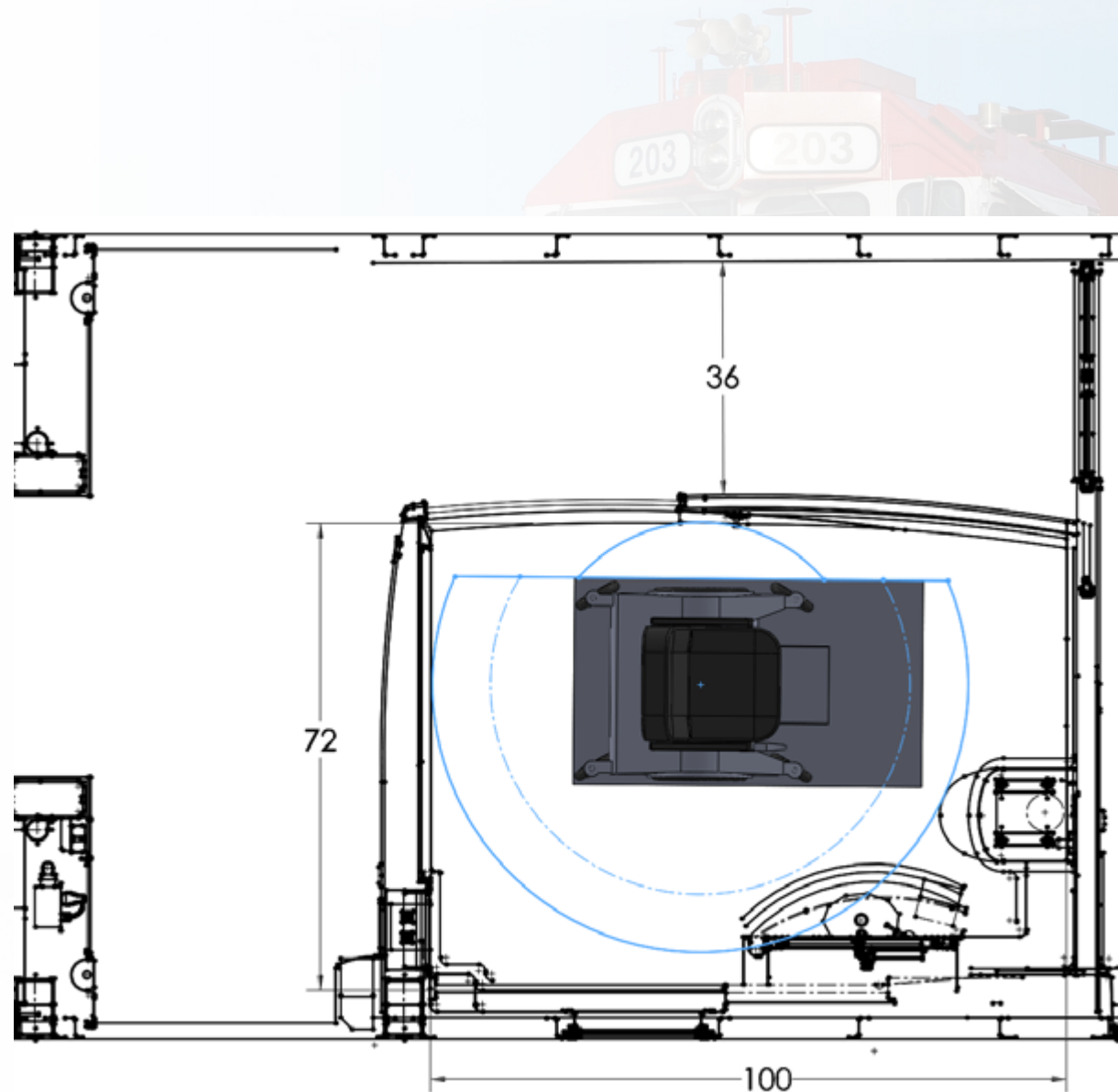


Overlay of large power-based wheeled mobility device with 9" toe clearance in acela accessible restroom



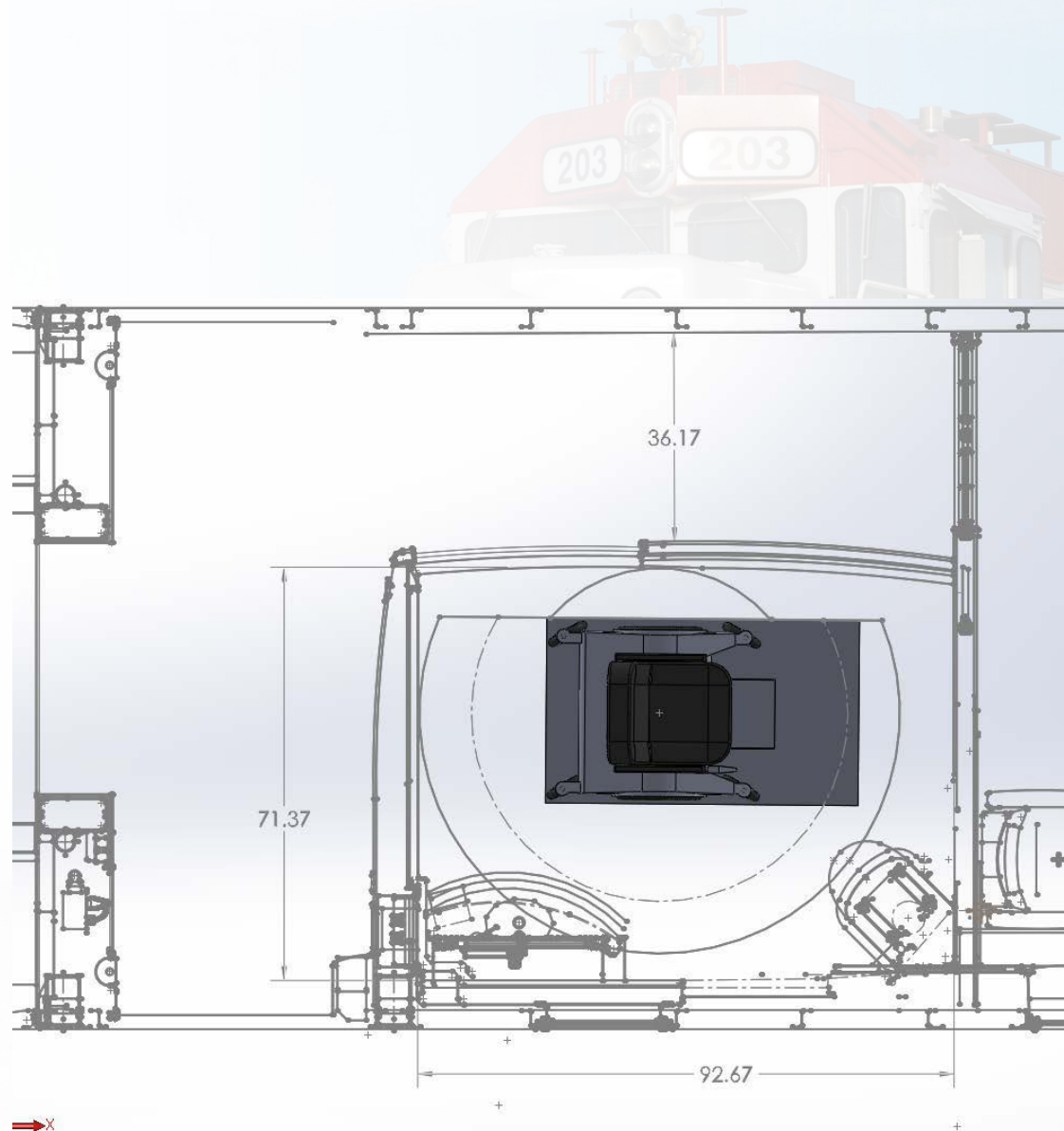
Accessible Restroom Study

- Removed the non-accessible restroom and enlarged the interior space of accessible restroom
Aisle and restroom is accessible
- Consideration is taken to reduce the size while maintaining accessibility

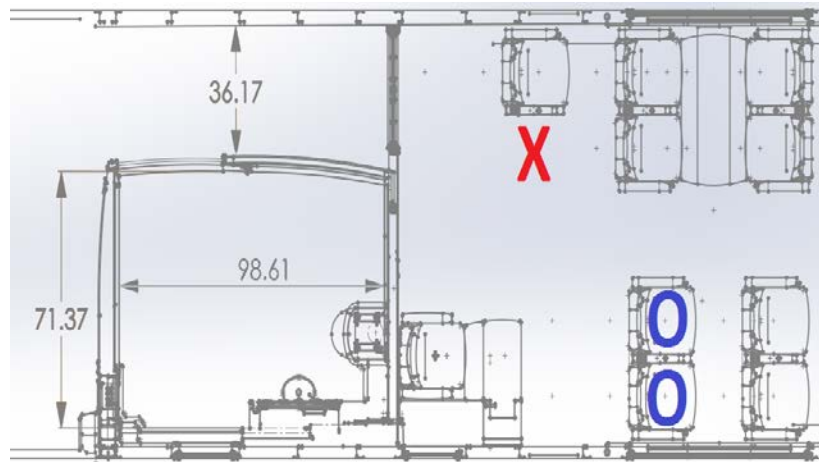


Accessible Restroom Study Cont'd

- Reduced size of accessible toilet
 - Uncoupled the sink and toilet shroud
 - Placed toilet on angle with outboard wall
- AWG Input
 - Passengers may need access to sink while sitting on toilet
 - Include a small sink next to toilet
 - Place toilet square with wall



Base Layout for Accessible Seating Study

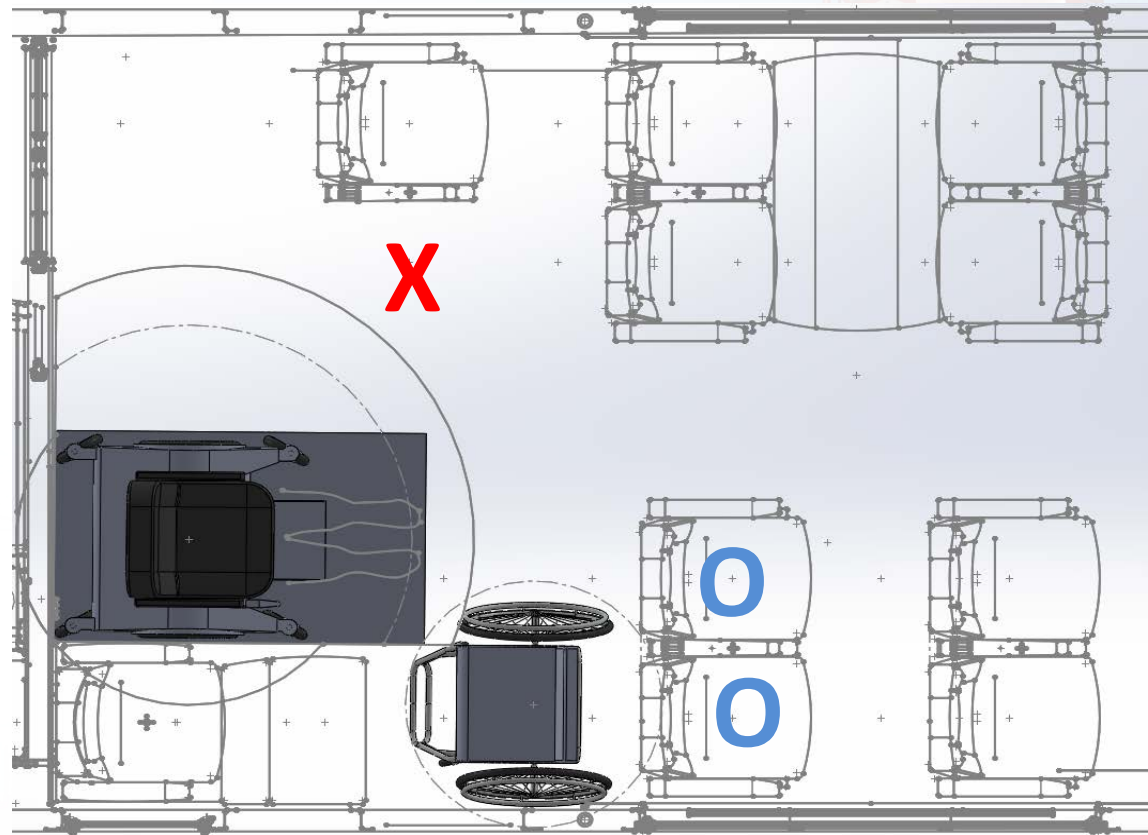


- Base layout
- X Seat removed
- OO Seat(s) added
- Net Gain is 1 seat

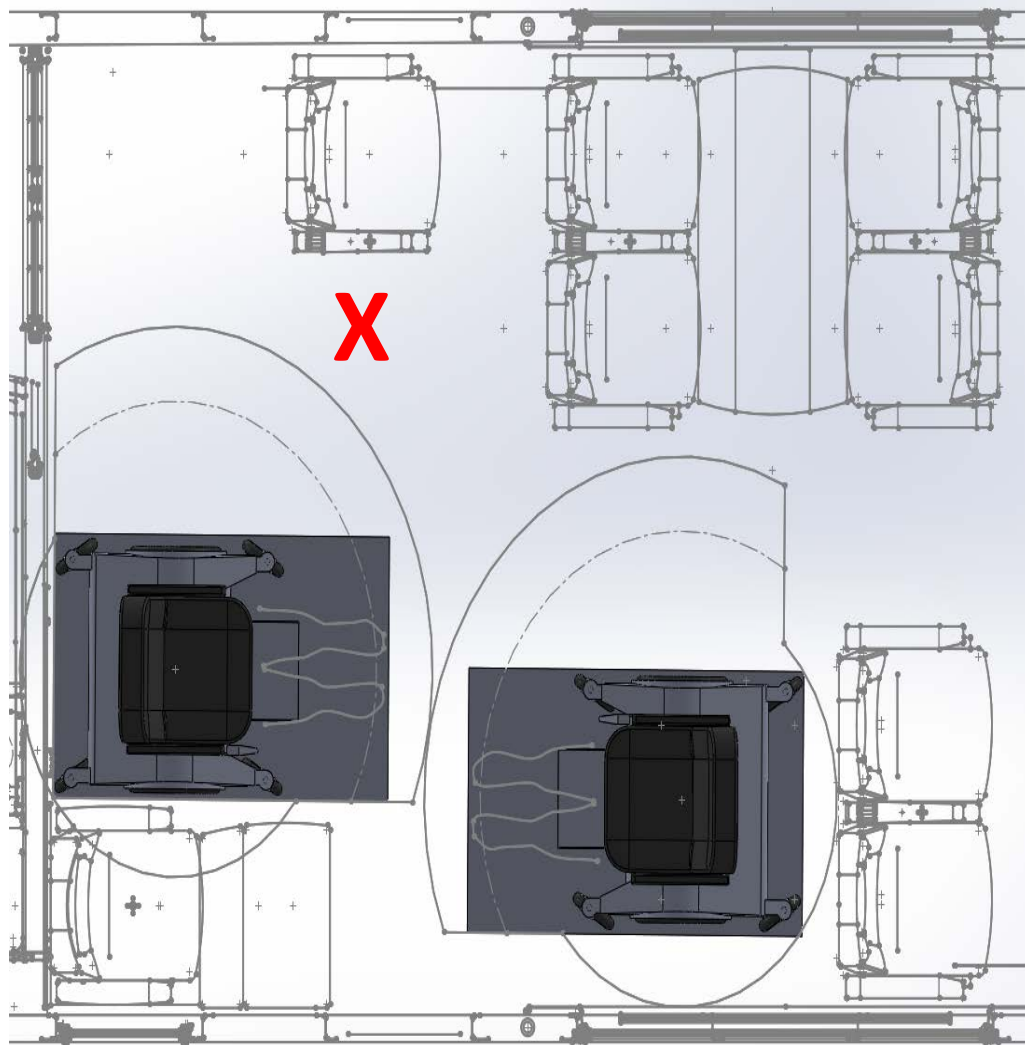
- Accessible restroom interior space is now 98.61 inches by 71.37 inches.
- Accessible aisle outside is 36.17 inches.
- Toilet and sink are recoupled
- Turning radius inside is optimized
- Accessible seating location was analyzed for spatial consumption

Modified Base Layout with 2 Wheeled Mobility Device

- **Net Seat gain is 1**
- Seat moved closer to window by removing equipment box
- Wider aisle
- Storage space: service animal, small wheelchair or small scooter
- Shows manual wheelchair and power base



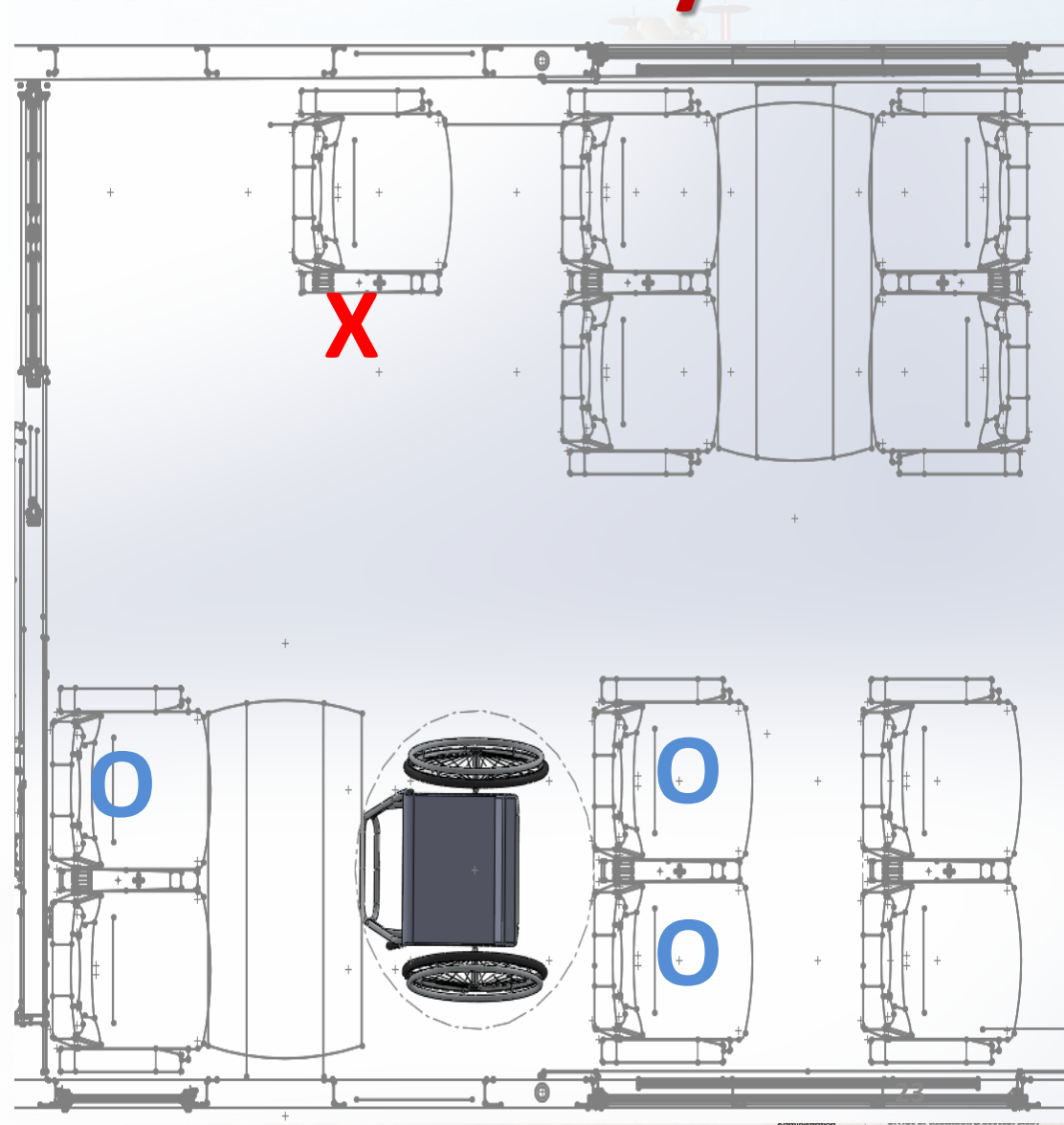
Modified Layout with 2 Powered Wheeled Mobility Device



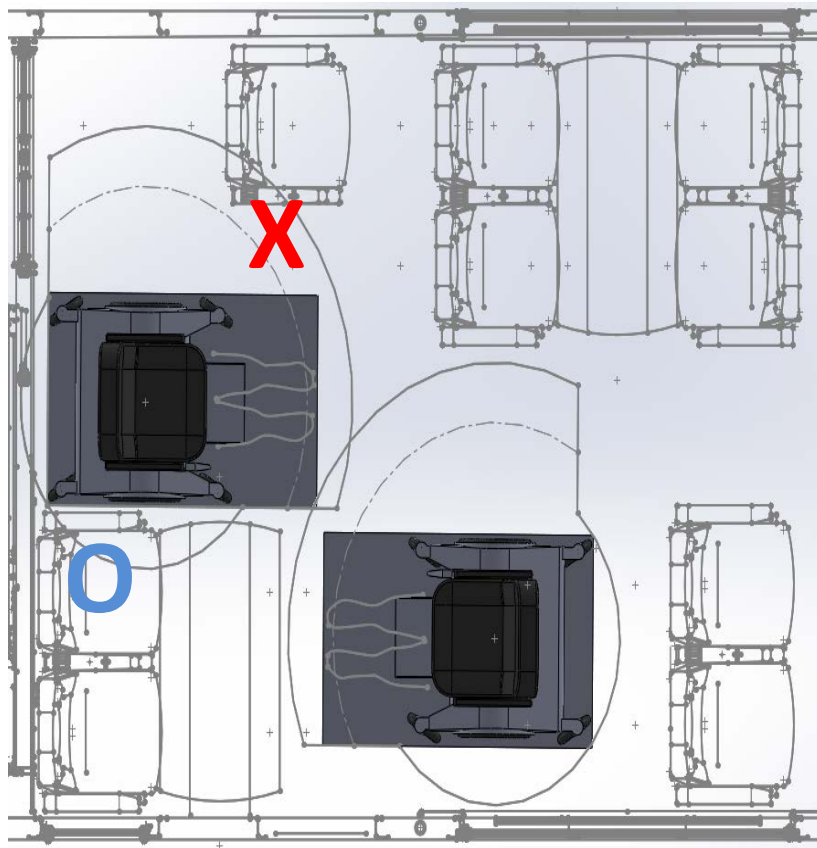
- **Net seat loss = 1**
- Seats moved closer to wall
- Wider aisle width
- Shows two power base WhMDs with 90 degree turning radius

Modified Base Layout with Manual Wheeled Mobility Device

- **Net Seat gain is 2**
- Added second seat at table
- Added row of double seat
- Shows manual wheelchair



Two Powered Wheeled Mobility Devices



- **No seat loss or gain**
- Number of Wheeled Mobility Devices = 1 to 2
- Conflicted aisle space
- Power bases shown with 90° turning radius

Summary

- RVAAC Final Report was submitted to the US Access Board on July 29, 2015
 - Board has the option to accept the recommendations fully or partially
 - Several items ahead of the RVAAC recommendations on the Board's agenda
 - Several years before action is taken
- Accessible Working Group
 - FRA will continue to work with Oregon State University to review the spatial impact of the on-board circulation and seating recommendations
 - Engage the AWG in the discussion as work progress
 - Results from the seat layout study will be presented to the AWG within the next month.

Questions?

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