

## Senior ID Capstone Intent Summary (September 6, 2016)

Project: Wheelchair Accessible Restroom Facility (P17011)

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Client: Doug Jaehn, (Job Title Unknown)  
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### Problems Statement:

The ADA defines a wheelchair-accessible bathroom as being 60"x56" with approximately 840 in<sup>2</sup> being consumed by the actual toilet fixture. Most facilities are required to have two grab bars, placed 33-36 inches above the floor and next to the toilet. Due to the nature of some disabilities, many people lack the strength and or mobility use these grab bars and clean themselves after utilizing such a facility. Some people need to rely on the assistance of an aide or home healthcare worker to allow them to use the restroom.

A wheelchair-accessible bathroom allows someone in a wheelchair to use the provided facilities (i.e. toilet, paper, sink, and hand dryer) with minimal difficulty compared to that of someone who is not in a wheelchair. The envisioned device improves the accessible bathroom experience for differently abled persons. The prototype will assist users with getting from the chair to the toilet, using the toilet, cleaning themselves afterwards, and returning to the chair.

The expected result is a functional prototype for our client and stakeholders, along with a set of suggested revisions to ADA requirements and standards around the device (including engineering specifications) such that this device or similar devices can be widely implemented without prohibitive costs. In addition, the team expects to deliver a semi-functional demonstration bathroom at imagine RIT. This implementation must be minimal in cost, fit the existing ADA handicap stall footprint, and be compatible with existing toilet fixtures.

### Projected milestones (use the ID syllabus as a guideline, but indicate what's feasible to achieve in the timeframe we have i.e. prototype built and tested, engineering + ID models only, etc.)

- Phase 1 – Research, Benchmarking & Design Brief Contacts made and called  
Tuesday, August 23 - Project start (joint meeting ID + Eng.)  
Tuesday, September 13 - Phase 1 review & deliverables
- Phase 2 – Creating A Product Concept Sketch + 3d Sketch Models  
Thursday, October 13 - Phase 2 review & deliverables
- Phase 3, Part A – Drawings, Human factors & Model Building Limited CAD of Projected Changes  
Tuesday, November 8 - Phase 3, Part A progress review  
Thursday, December 8 - Phase 3, Part B REFINEMENT / FINAL PRESENTATION FOR THE SEMESTER Pictures of intended changes + Scale Model  
Tuesday, December 13 - Capstone Gate review (finals week)
- Phase 3, Part B – Final fall semester presentation
- Gate review

**Who is the intended target market for your product development?**

Anyone with a disability that uses a wheelchair. Ages can vary from a young teen to an elderly person. Product or redesign can then aid any persons with moderately lowered physical function, whether in wheelchair or not.

**What is the intended environment for this product?**

Any standard ADA handicap stall in any public facility.