Appendix B: Project Definition

Project Name: SafeSplash: an Empowering Shower Solution

Client: Misericordia Home is represented by Trina Semelroth
Team members: Felix Jacobs, Gautham Anne, Rachel Soares, Zora Hinrichs
Date: May 4th
Version: Three

Mission Statement: Design a device tailored to adults with various disabilities that aids them in safely and comfortably entering/exiting the shower area, while ensuring ease for caretakers.

Project Deliverables
- Final report
  - Printed
  - PDF sent via email to Trina Semelroth
- Slides presentation to Trina Semelroth and other clients
- A device that aids adults in safely and comfortably accessing and exiting the shower area

Constraints
- Built at the minimum cost possible (150 dollars maximum)
- Meets Americans with Disabilities Act
  - Non-slip materials
  - Mold Prevention/Remediation
  - 1:12 inch slope

Users
Primary users
- Adults with intellectual disabilities residing in Misericordia Home
- Caretakers of the adults with intellectual disabilities at Misericordia Home who are responsible for assisting in the showering process of the residents

Secondary users
- The staff at Misericordia Home: who is responsible for maintaining cleanliness in the bathroom area will need to relocate the device accordingly

Tertiary users
- The entire staff at Misericordia Home could include caregivers, nurses, administrative personnel, therapists, maintenance workers, kitchen staff, and volunteers

Illustrative User Scenario

In Misericordia Home, Emily, a 30-year-old woman with Down syndrome faces a daily challenge with her shower routine. The traditional shower setup in the facility presents a significant challenge for Emily, as the high shower ledge poses a constant risk of tripping and falling.

SafeSplash emerged as a solution for Emily's issue, offering a shower solution designed with her safety and accessibility in mind. Featuring a comfortable entrance and a seamless transition from floor to shower space, SafeSplash eliminates the hazardous ledge that has been a source of anxiety for Emily.

With SafeSplash, Emily can finally enjoy her shower experience without fear or hesitation, reclaiming her independence and dignity in the bathroom.

Table of Requirements & Specifications

Requirements	Specifications
Access ● Assistance overcoming 2-3 inch ledge when entering and exiting the shower ○ An easy and effective solution that requires minimal effort for caretakers and resident	● Not have more than 5 pieces that need to be assembled ● Allow one caretaker to easily push/assist the resident over the ledge and into the shower without overexerting themself ○ Should not have to lift more than 50 lbs of weight or push much to get resident into the shower
Safety ● Must be designed to support at least 450 lbs ● Must not exceed 2 feet so that other residents can get to the restroom ● Less than 30 lbs so that caretakers can move/assemble SafeSplash easily ● Has to be compliant with American Disability Act rules and regulations ● Slip-resistant materials so that residents can enter without worrying about falling	● Must be extremely non-slip and water-resistant because some residents may not understand the severity of drying off and getting on the device ● Must leave at least 20 inches of space from edge of ramp to wall to not crowd the bathroom and constrict other residents from access ● Add non-slip decals or grip tape so that residents can easily enter the shower without worrying about slipping
Structure ● Waterproof materials to last in the shower setting ● Utilize cost-effective materials in the design	● Add supports beneath the ramp so that it can easily allow for a resident in the chair and at least one caretaker (min 450 lbs) to easily enter / exit the shower ● Whatever chosen material must have a

● Lightweight materials for easy transport ● Should not be unnecessarily long ● The stable structure that holds strong against 450+ lbs without bending or breaking	thickness that does not bend or crack under stress ● The item must be easily transported either because of lightweight materials or handles / moving mechanism
Maintenance/Durability ● Last at least 6 months (approximately 400 uses when showering assuming residents shower twice a day) ● Be simple enough to make so it can be replicated quickly and from instructions for construction ● Must not require parts to be maintained/serviced professionally	● Materials must not decay or corrode so that the nonslip aspect remains ● The item must be crafted from washable materials, such as durable plastics ○ Be an item easy to clean once a day with disinfectant and at least once a week with bleach
Universality ● Will serve as a versatile solution applicable to all types of outer shower ledges ○ should accommodate and address the shower ledge so that users can enter comfortably in any environment	● The item must accommodate 2-3" shower ledge heights externally and 1-1.75" inch internal ledge ● The item must be able to attach securely around ledge width of 4"