

Walker Project

Redesigned a mobility walker to improve comfort, steering, and off-road performance for a client with specific accessibility needs

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Why does this Outreach Matter?

- First and foremost - provide an improvement in mobility, health, accessibility, and comfort
- Strategizing and allocating resources to deliver a product
- Improving communication skills with customers, making and selling a product according to needs
- Machine individual parts, gain manufacturing experience
- Building connections

Why does this Outreach Matter? (Continued)

- Counts as FIRST outreach
- Helps others in a meaningful way
- Provides a learning experience in the STEM field
- Spreads the word of the Lord through altruism
- Publicizes TKA robotics team in a positive light

Defining Problem

- Front wheels turn around 360 but back wheels are stationary;
Walker folds
- 10" Front Wheels; Material: Aluminum; 22 pounds
- Lack of Height; Poor off road performance
- Brakes not effective, could have better ergonomics
 - Inhibits walking, not good for legs, not comfortable when sitting
- All problems generally associated with specific components

Current Plan

Pros

- Fit to his comfort
- We know that it works
- Easier to adapt to
- Good platform with lots of mounting points

Cons

- All issues require modification (greater challenge/time)
- Expensive
- Not tall enough

Resource Allocation and Scheduling (Strategy)

- Consult customer before
- Testing walker design and proposing localized solutions
- Meet with contact before finalizing testing ideas
- Testing has to involve specific needs of customer
 - Simulate weights, tensions, road surfaces

What do we Need to Buy?

- Wheels - larger, ideally with tires for better compliance
- Beyour Walker Upright Walker - Along what constraints did we decide to buy it and were there alternatives which better suit modifications or just work better by default?
- Foam for more comfort while sitting

The background of the image is a wide-angle photograph of a sky at sunset or sunrise. The colors transition from deep purple and blue at the top to bright yellow and orange near the horizon. The sky is filled with various types of clouds, from wispy cirrus to thicker cumulus. In the foreground, there's a dark silhouette of what appears to be a shoreline or a distant landmass.

Thank you