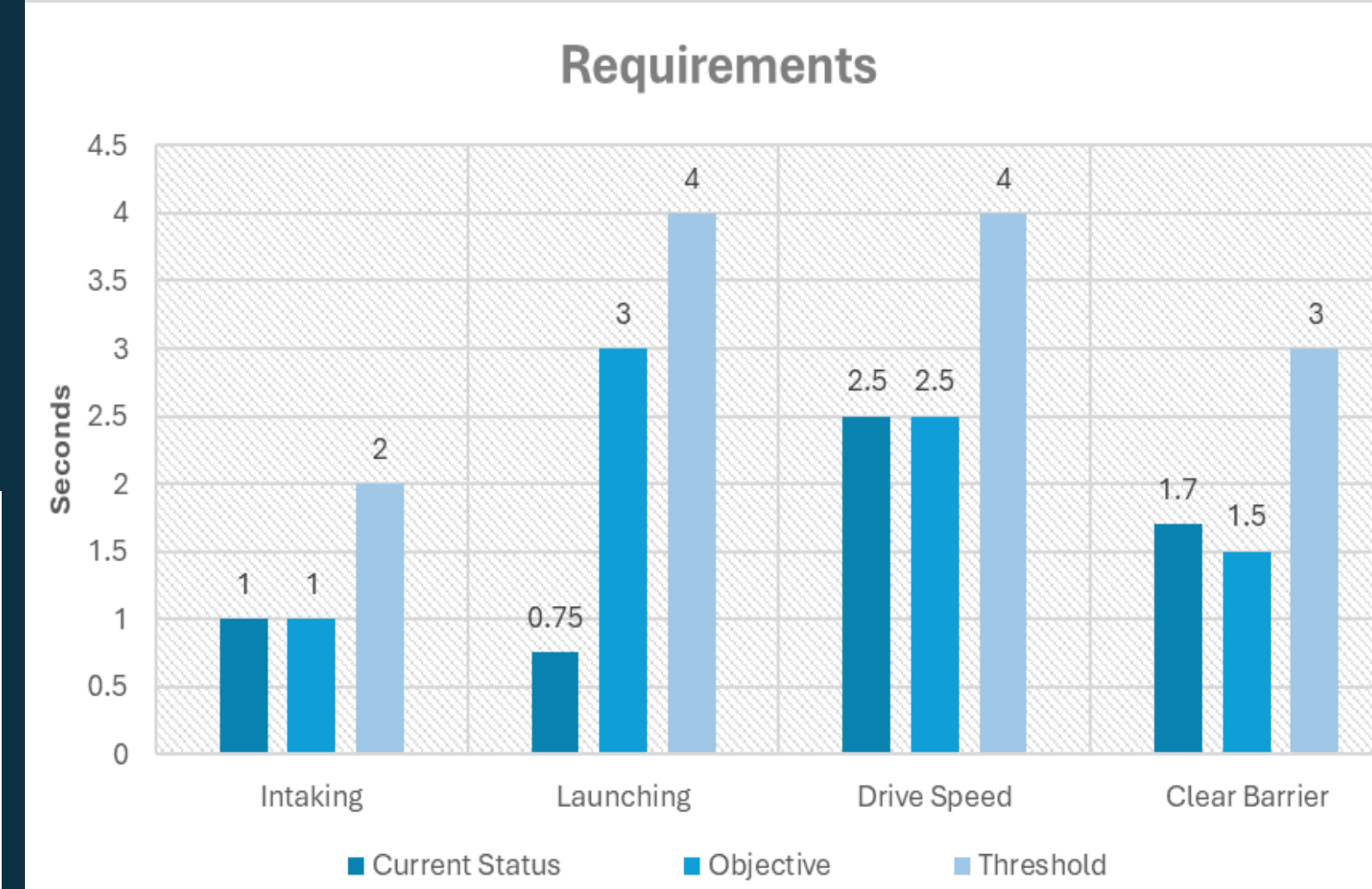


- Objectives:**
- Intake and score triballs into scoring zones
 - Elevate robot off the ground
 - Autonomous and driver-controlled code
 - Qualify for the world competition

Background:

Vex U is a global collegiate robotics competition where the robots compete in a sporting event to score as many points as possible. Together with the VT club team, our goal was to build one of the two robots needed to form a team.

- Design:**
- Onshape – Collaborative CAD
 - SOLIDWORKS
 - Vex Build System
 - Vex Pros Programming



Product Evaluation:

	Estimate	Actual
Drive Speed	2.5 sec	2.5 sec
Elevation	D Tier	C Tier
Expansion Limit	36in	35in
Starting Size	15in ³	<15in ³

Our Robot

Pop Outs:

- Expand Robot Pushing Area

Intake:

- Spinning "noodles"
- Collects game elements

Elevation:

- Lifts Robot off the ground
- Claw and winch

Catapult:

- Launch Triballs
- <1s Reload

Drive Base:

- Field navigation
- Clears barrier
- Odometry
- Fast (257 RPM)

- Other Requirements:**
- ✓ Robot must be safe
 - ✓ Made from legal materials
 - ✓ No concave surfaces to avoid herding rule
 - ✓ Can navigate autonomously

- Improvements:**
- Streamline design with custom parts
 - More time for programming
 - Start with rapid prototyping
 - Spend more time on strategy
 - Have robot building lessons

