Viable and sustainable solutions for waste scrap cable reuse or recycling

Overview
During production “runs” or transfer of one type of cable to another, “waste” cable is generated. The current options for recycling fiber optic are limited to landfilling. This process is costly, inefficient and not environmentally friendly. Corning is seeking viable sustainable solutions for waste scrap cable reuse or recycling. Options need to consider overall cost, proximity (for transportation pricing), technology availability, and energy. The main challenge in recycling fiber optic cables is the variety of materials used in each cable and how difficult they are to separate.

Objectives
Our Objective was to reduce the amount of waste cables going to Landfill by finding alternative uses

Approach
• Conducted customer assessment and concluded that the most important outcomes for Corning were decreasing the use of landfills and having the alternative be cheaper than the landfill.
• After deliberating on possible solutions we settled on using the cables as concrete reinforcement
• Cables would be either shredded and used as aggregate or, for the armored cables, be used instead of steel rebar
• Used
• Reasons for choosing this path are the difficulty of unwrapping the cable and the volume that needs to be reused
• Created a CAD model of the mold used to create the cement blocks
• Concrete fiber reinforcement is already a well-established method but we were unable to test our bricks due to not having access to ASTM standard equipment

Outcomes
• Explored multiple approaches to reusing waste optical cable
• Save 8500 tons of waste cable per year from the landfill by turning it into concrete reinforcement
• Other optimistic/futuristic ideas that could potentially be born from this one is an electricity - and/or- light conductive concrete.