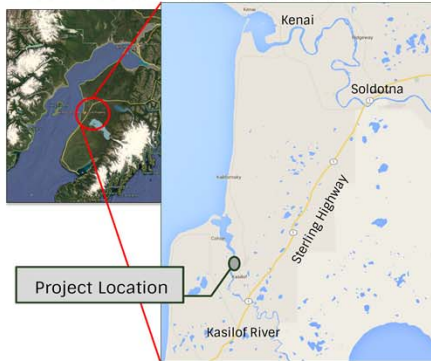


PROJECT LOCATION

Four miles from mouth of the Kasilof River



SCOPE OF WORK

- Project Specifications & Permits
- Roads, Parking & Trail Drawings
- Boat Retrieval System Drawings

CHALLENGES

- Corrosive saltwater
- Abrasive glacial runoff
- Waterline elevation changes with tides
- No-boat-launching requirement
- No on-site staff to oversee operations
- Avoid using boat bow eye for retrieval
- Removable during the winter

DESIGN BOAT CRITERIA

- Drift boat
- 16 feet long by 55 inches wide
- 400 pounds

PROJECT TEAM

Zach Baker, Seth Wise, Jean Cumlat, Ciara Teilborg



EXISTING BOAT TAKEOUT



DISADVANTAGES

- Dangerous-tow line susceptible to failure
- Allows boat launching

FUNCTION

Boats are secured to the owner's vehicle with a tow strap and towed over the top of PVC pipes until the boat reaches to the top of the river bank. The boat is then lifted onto the boat trailer by hand.

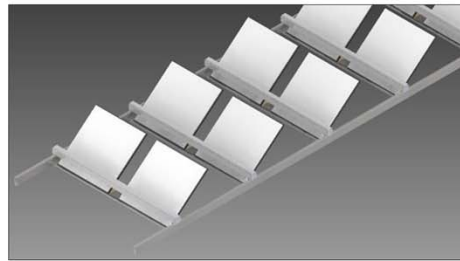
ADVANTAGES

- Easily removable during winter
- Low cost
- Simple

SHARKSKIN TAKEOUT SYSTEM

FUNCTION

An electric winch is used to pull boats from the water to their trailers by sliding them over the top of the Sharkskin concept. Boats traveling uphill push the rubber paddles out of the way by rotating them down below the slide rails. Travel in the opposite direction forces the paddles upwards where they stop at approximately 90 degrees due to the location of the rubber hinge relative to the steel frame.



ADVANTAGES

- No rotating parts
- Corrosion resistant
- Durable
- Simple
- Modular
- Low maintenance
- Low cost



DISADVANTAGES

- Forces are applied to boat's bow eye
- Learning curve for first time users

CART TAKEOUT SYSTEM

FUNCTION

Flexural axles rotate when loaded with the weight of a boat. Rotation of the axle causes a pawl mechanism on the cart frame to engage with a ratchet mounted on the hub flange. The engaged system only allows one-way travel. The cart is pulled up the river bank by an electric winch.

ADVANTAGES

- Doesn't rely on connection to boats bow eye
- Can be used with traditional boat ramp



DISADVANTAGES

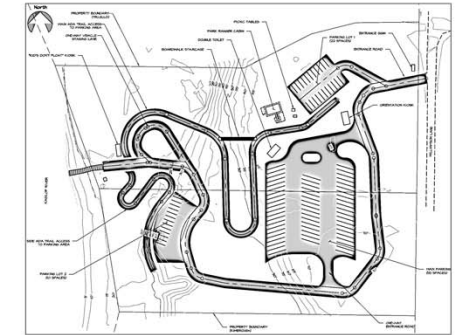
- Raised deck height requires a winch to load boat onto cart
- Wheel bearings susceptible to corrosion

ENVIRONMENTAL WORK

- List of required permits
- Complete list of objects to be removed from property
- River flowrate analysis

ROADS, PARKING, & TRAILS

- Designed to AASHTO and ADA specifications
- Twelve-foot wide lanes
- Total of 86 parking spaces
- Eight-foot wide trails



CONCLUSION

Seawolf Engineering submitted a Design Study Report to the Alaska State Parks. The DSR contained preliminary drawings for the roads, parking, trails and boat takeout concepts seen here. Project specifications and required permits were also included in the report. Preliminary Cost estimates for the takeout concepts and road design work were attached.

ACKNOWLEDGEMENTS

- Alaska State Parks
- UAA School of Engineering
- Dr. Osama Abaza, PE, PhD

