

# 12 Mile Road over the Charlotte River



Robert W. Laitinen, PS  
Superintendent / Manager  
Chippewa County Road Comm.  
3949 S. Mackinac Trail  
Sault Ste. Marie, MI  
(906) 440-2244  
[rlaitinen@chippewacountyroads.org](mailto:rlaitinen@chippewacountyroads.org)



Alicia Krouth, PE  
Highway Engineer  
Chippewa County Road Comm.  
3949 S. Mackinac Trail  
Sault Ste. Marie, MI  
(906) 635-5295  
[akrouth@chippewacountyroads.org](mailto:akrouth@chippewacountyroads.org)

Ice is a terrible bridge building material



# 12 Mile Road over the Charlotte River



# Project Facts

- Original Structure – two 8' diameter steel pipes, 30' long, 5' space between pipes
- New Structure – 30' span, 30' length
- Carries two lanes of traffic
- Earth moved – 4,000 cyd
- Three week road closure
- Total construction time – approx 1 month
- Total cost (less failed attempt in 2016), \$350k

- Why is this project unique?

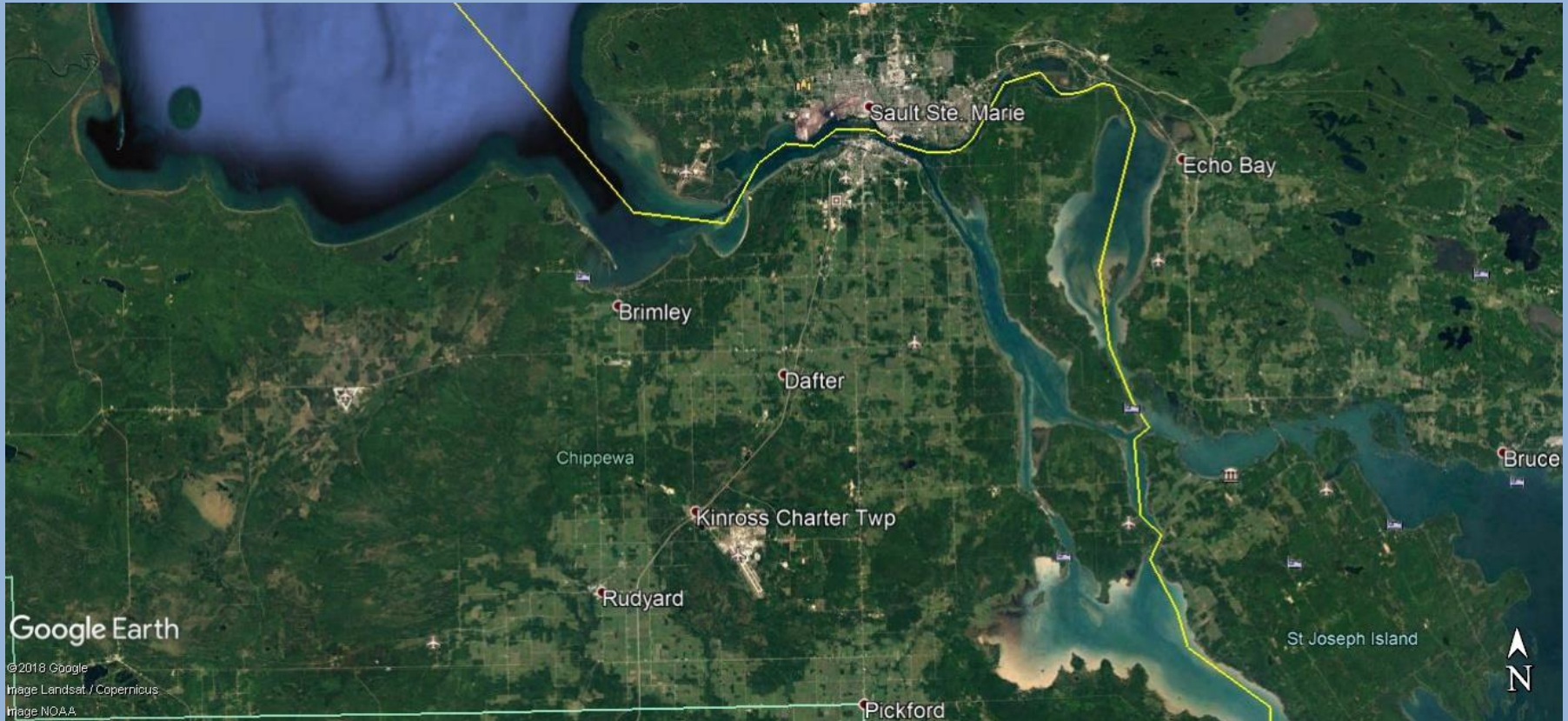
Structure Type – First pre-stressed, post tensioned, “clamshell” type structure in North America

Multiple stakeholders – CCRC, UP Conc. Pipe, Lake Superior Watershed group, Bruce Township

Small Scale “modified” design-build method, use CCRC forces for most site work, assembly directed by UP Pipe

Toothpaste consistency clay soil, site prone to flooding, organic material in bottom of excavation

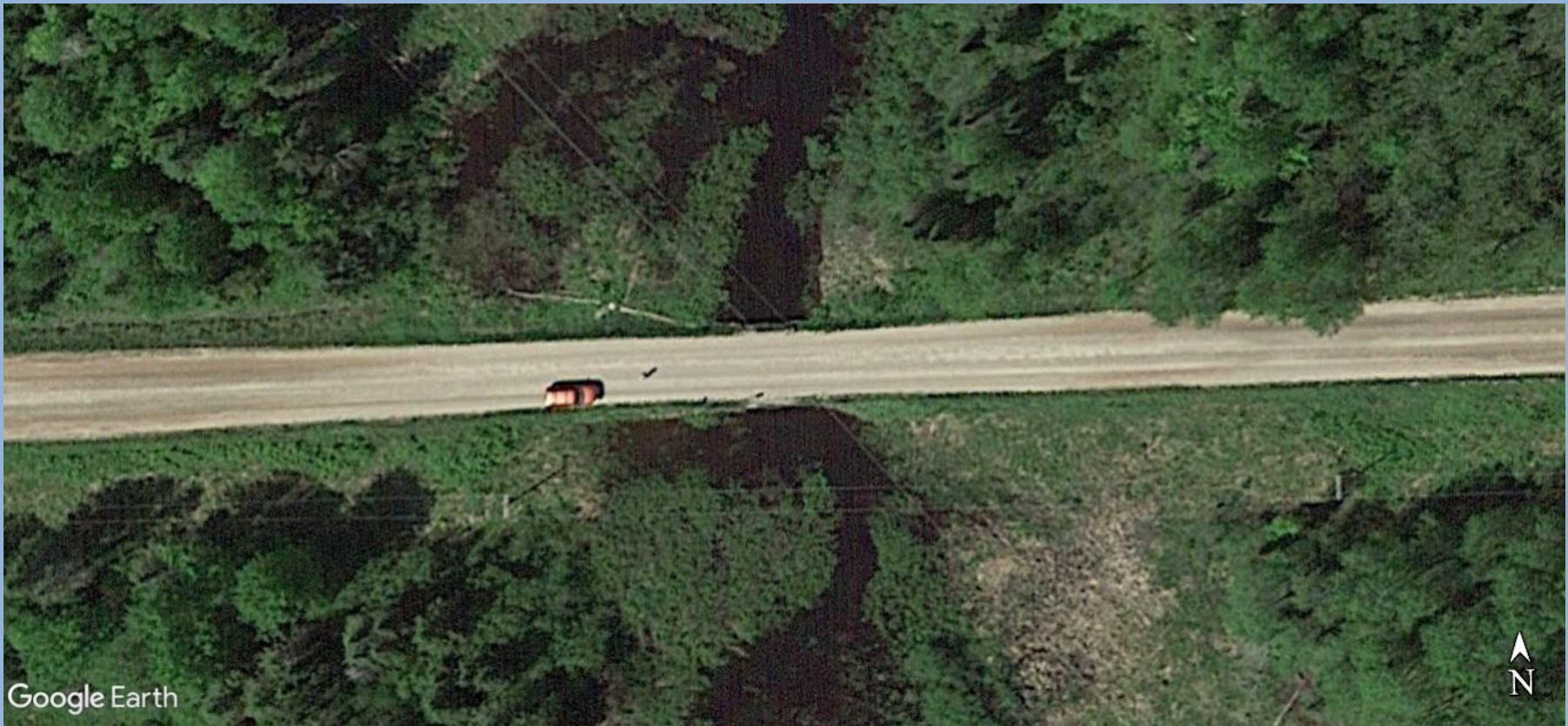
# Overview of Site



# Overview of Site



# Overview of Site





# CCRC's Role

- Survey Data Collection
- Site Design
- Permit acquisition
- Dewatering
- All excavating and provide labor for assembly
- Coordinate shut down of overhead transmission line

# UPCP's Role

- Precast Design (Salmons)
- Foundation Design (Gregg Kingstrom, UPEA)
- Manufacture Precast
- Transport precast to site, guide assembly

# 2016 failed attempt



# 2016 failed attempt



# 2016 failed attempt



# Why not a conventional bridge?



# 2017 Construction



# 2017 Construction



# 2017 Construction





# 2017 Construction



# 2017 Construction



# 2017 Construction



# 2017 Construction



# 2017 Construction



# 2017 Construction



# 2017 Construction



# 2017 Construction





# 2017 Construction



# 2017 Construction



# 2017 Construction



# 2017 Construction



# 2017 Construction

