Saginaw Trail Pipeline

James Sunday
October 9, 2019

Consumers Energy
Count on Us®

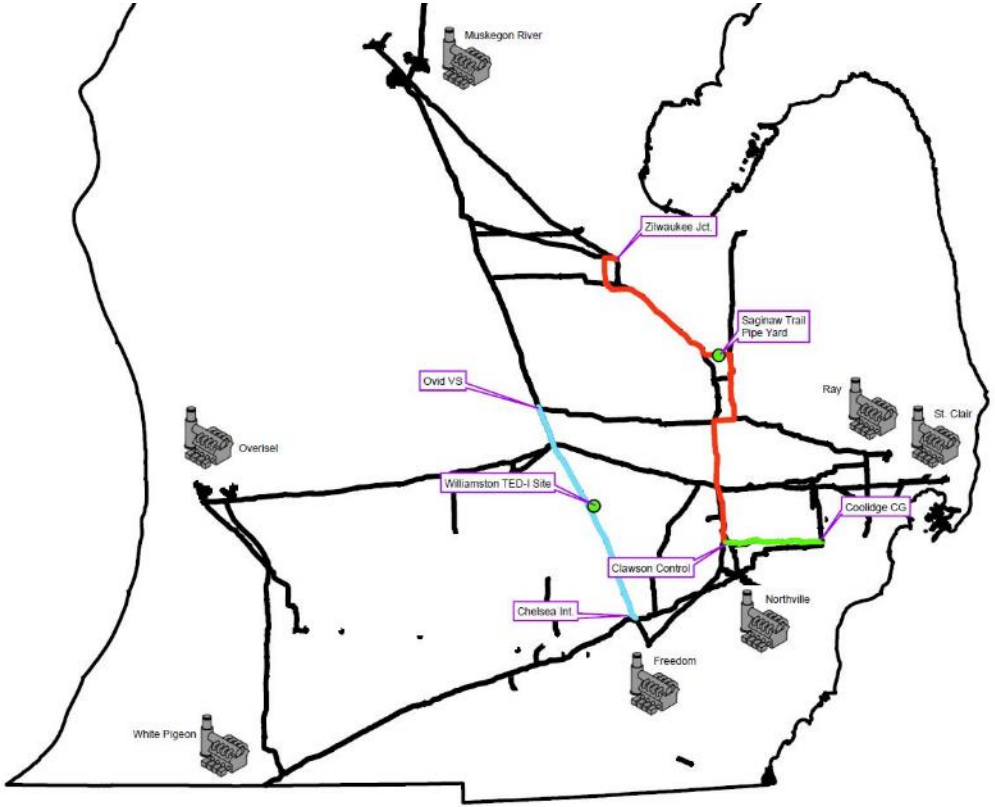
TED-I

Transmission Enhancements for Deliverability and Integrity

Saginaw Trail
South Oakland
Mid Michigan

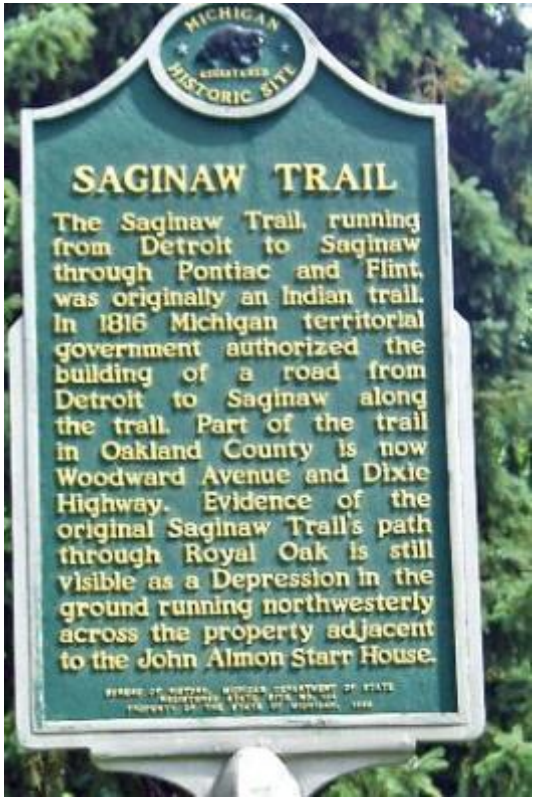
Legend

- Line 2800
- Line 3100
- Line 100A
- Transmission Pipeline

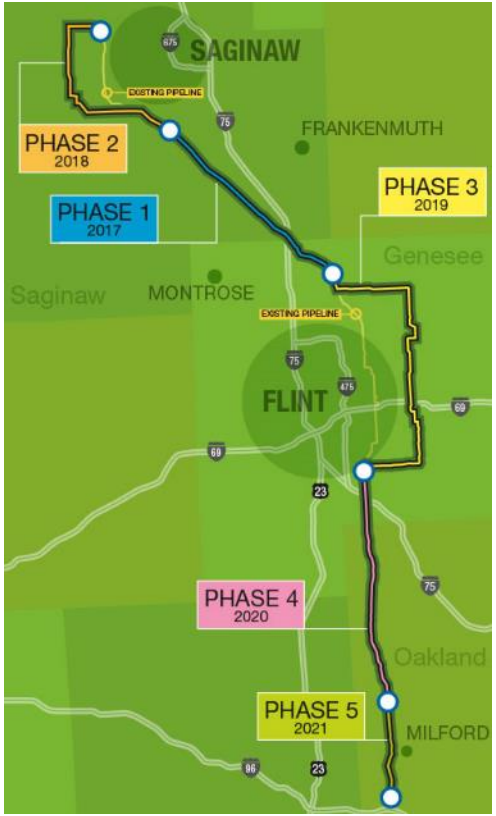


Naming Line 2800

- Projects are named to alleviate line number confusion
- Line 2800 continues south to Freedom Compressor Station
- Settled on “Saginaw Trail Pipeline” that general follows the original Saginaw Trail
- Engineer Art Donnelly suggested the name used.



Routing Issues



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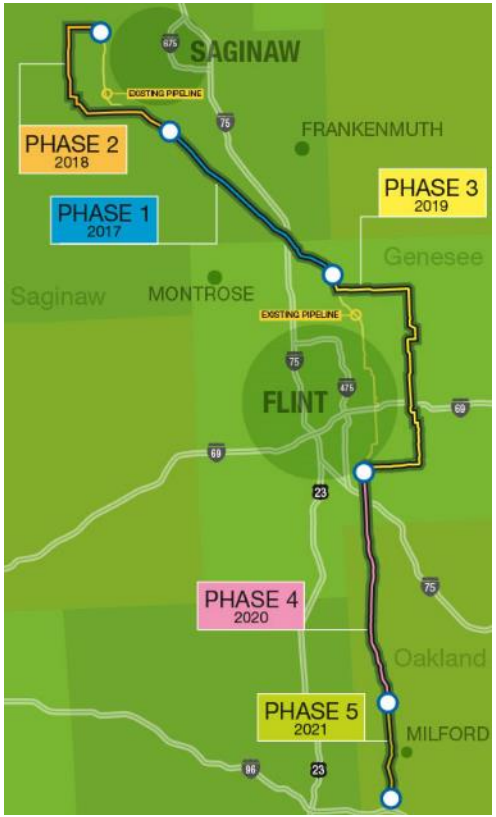

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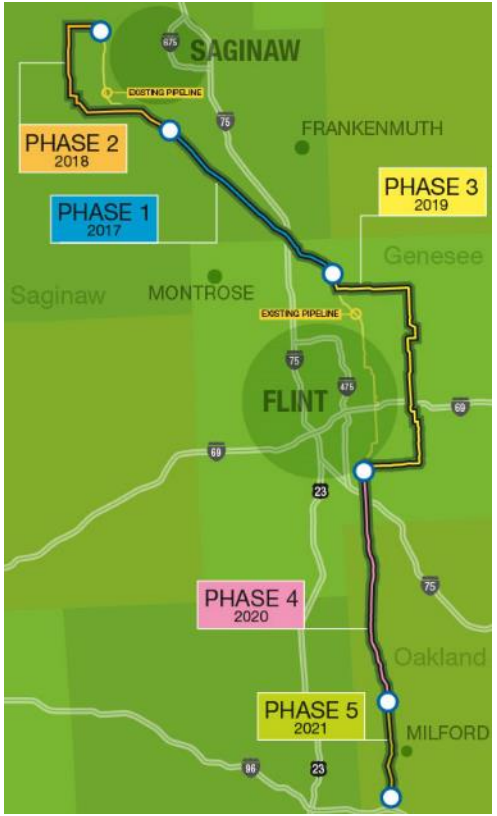
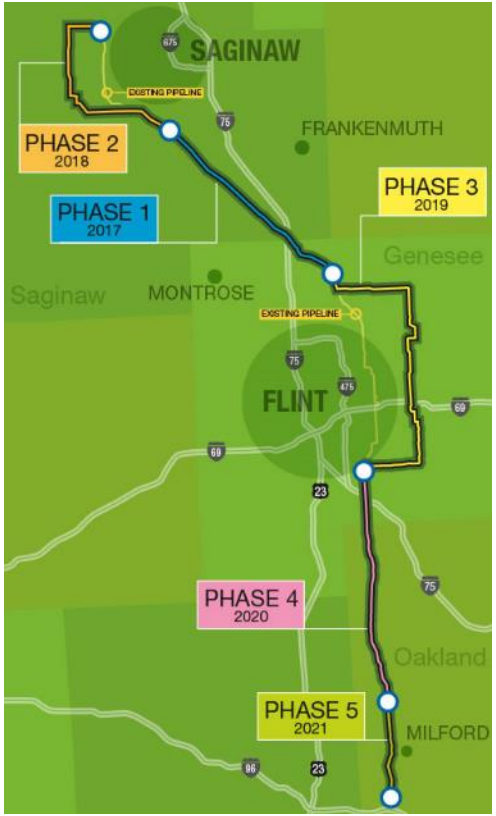


Delivering natural gas value

- Replacing 78 miles of transmission pipeline
  - Genesee, Saginaw and Oakland counties
- Five-year, $610 million project
- Construction is started in June 2017 and expected to finish in December 2020.



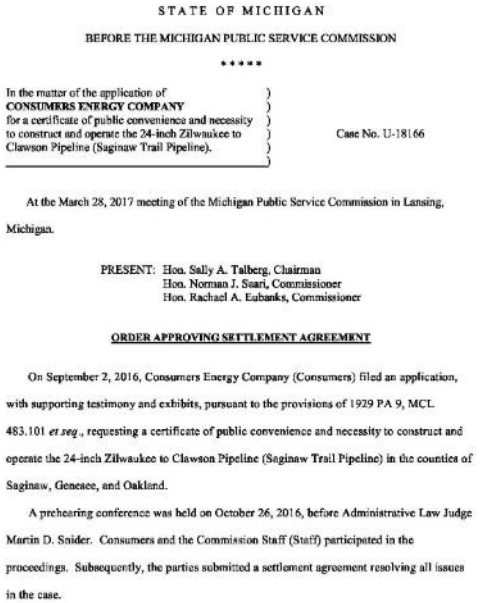
Act 9 Filing

Filed September 2016

Hearings – No intervenors

Settlement Agreement

Certificate March 2017



STATE OF MICHIGAN

BEFORE THE MICHIGAN PUBLIC SERVICE COMMISSION

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In the matter of the application of)
CONSUMERS ENERGY COMPANY)
for a certificate of public convenience and necessity)
to construct and operate the 24-inch Zilwaukee to) Case No. U-18166
Clawson Pipeline (Saginaw Trail Pipeline).)

At the March 28, 2017 meeting of the Michigan Public Service Commission in Lansing, Michigan.

PRESENT: Hon. Sally A. Talberg, Chairman
Hon. Norman J. Saari, Commissioner
Hon. Rachael A. Eubanks, Commissioner

ORDER APPROVING SETTLEMENT AGREEMENT

On September 2, 2016, Consumers Energy Company (Consumers) filed an application, with supporting testimony and exhibits, pursuant to the provisions of 1929 PA 9, MCL 483.101 *et seq.*, requesting a certificate of public convenience and necessity to construct and operate the 24-inch Zilwaukee to Clawson Pipeline (Saginaw Trail Pipeline) in the counties of Saginaw, Genesee, and Oakland.

A prehearing conference was held on October 26, 2016, before Administrative Law Judge Martin D. Snider. Consumers and the Commission Staff (Staff) participated in the proceedings. Subsequently, the parties submitted a settlement agreement resolving all issues in the case.

Communication Plan

Consumers Energy
Count on Us®

Saginaw Trail Pipeline
Landowner Open House

We're modernizing the natural gas infrastructure in your community.

Public Awareness

- Landowner informational Dinners
- Formal legislative visits
- Local communities coordination
- Media

Public Notification

SAGINAW TRAIL PIPELINE PROJECT

AT CONSUMERS ENERGY, the safety and reliability of our natural gas pipelines is a top priority. To enhance our system and benefit our customers, we are replacing about 80 miles of pipeline beginning in 2017.

- The 24-inch new steel pipeline will extend from western Oakland County through parts of Genesee, Shiawassee and Saginaw Counties.
- The first phase of construction will begin at a Consumers Energy site in Saginaw County near Evon Road and continue south to a natural gas facility near Vienna Road in Genesee County. Construction is expected to begin in the summer of 2017 and be completed for the winter heating season.
- Approximately 20 miles of pipeline will be replaced during this phase of construction. Three city gates, which reduce natural gas pressure so it can be safely delivered to homes and businesses, will also be rebuilt. The existing pipeline will be removed over the next several years.
- No customers will experience natural gas interruptions as a result of this project.
- Consumers Energy will contact affected landowners in advance of construction.
- The 2017 project will cost about $134 million. Local and Michigan contractors, goods and services will be used whenever possible during construction.

We appreciate your patience as we work to safely and efficiently complete this project.

Questions? Call **844-502-9014.**

Report any natural gas emergencies 24/7 at 800-477-5050

Pipe Yard and offices – Thetford MI

- Utilized 100 acres of existing power plant property
- Removed topsoil and installed concrete base
- Installed water, sewer and 6 mobile offices
- 50 miles of pipe storage ability

Field Office and Pipe Yard

- Separate entrances for construction and office
- 10 MPH speed limit for all vehicles
- Pipe, equipment and mat storage
- Fabrication yard
- Material staging

Pipe Mill Pre Roll Meeting

- Engineering visits pipe mill before roll date
- Specifications, material, schedule and mill inspection are reviewed
- Pipe is 100% inspected by a 3rd party contractor with Consumers Energy quality representative onsite

Pipe Inspection

- Pipe Manufacturing
- Seam Welding
- Ultrasonic Weld Testing
- Pipe Hydrotesting
- API 5L Bench Inspection
- Coating
- Rail Car Loading

Loaded on rail cars headed to Michigan

Pipe Receipt Inspection and Storage

- Pipe shipped to rail yard in Zilwaukee, MI
- Trucked to pipe yard and unloaded by pipe manufacturer
- CE inspects for receipt as unloaded off of truck

Contractor Equipment Staging

Local Business Impacts

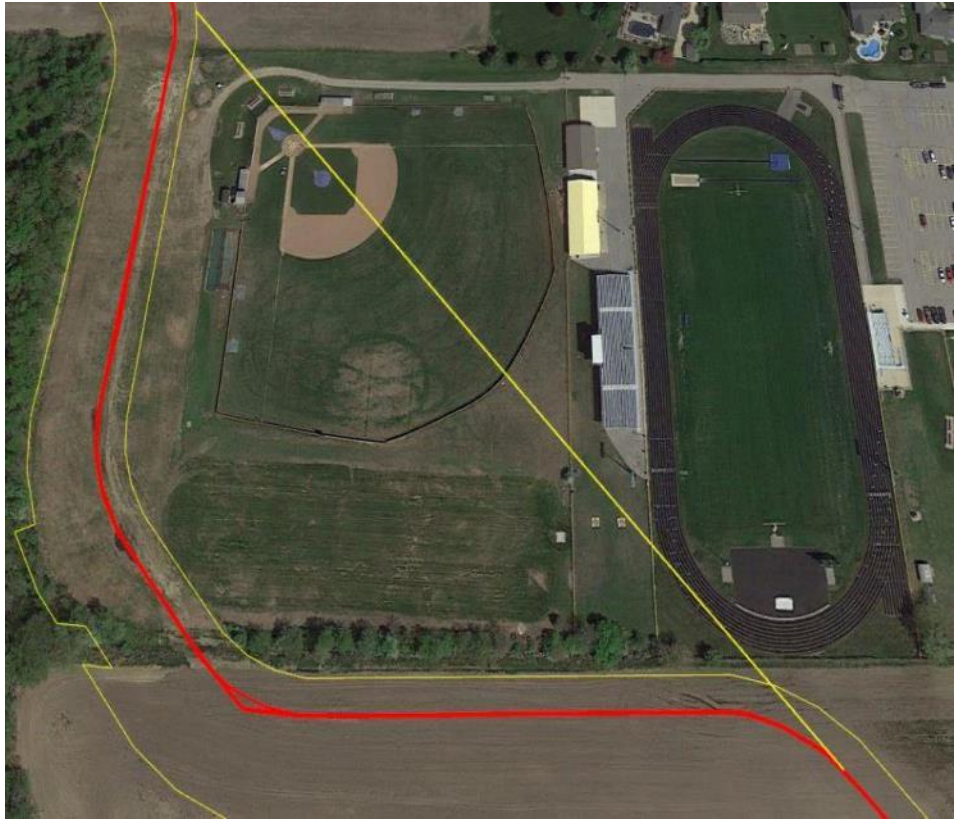
- The project creates approximately 450 jobs each construction year.
- Local and Michigan contractors, goods and services used whenever practical.

Phase I 2017 Construction

- Mostly lift and lay
- Agricultural
- Relocated around Birch Run ball field

Birch Run High School Ball Field

- Ball Diamond installed over pipeline running from home plate to center field.
- Negotiated re-route with Birch Run School to reroute to south and west.
- Completed during 2017 construction, old pipe abandoned in place



Pipe Stringing

- Pipe joints in 80ft length minimizing field welding
- Trucks utilize articulating rear axil to maneuver around local road corners easily
- Pipe was hauled from Thetford yard

Horizontal Directional Drilling

- HDD utilized at sensitive sites and limited right of way sights.
- Southeast Directional Drilling company completed all bores
- Abrasive Resistant Overcoat utilized to protect the pipe epoxy coating during installation

Mainline Tie in Crew

Sheetpiled drain crossing tie in

Elms Rd mainline final completion

- Residents at Elms Rd crossing lost the use of their front yard during construction.
- Residents set up lemonade stand in their garage and served cold beverages to crews.
- Over 450 workers took advantage of the cool refreshments.

Elms Rd yard Clean up

- Residents at Elms Rd crossing yard after restoration
- They were very appreciative of the attention they got to detail by our contractor
- They also said they were going to miss the construction as it’s really quiet at their location.

Agricultural Considerations

- Compensation for loss of crop production.
- Top soil stripped and separated from excavations in agricultural fields.
- Drain tiles repaired by local farmers.
- Soil decompaction

Pipeline Hydrotest

- Pipe tested to 1440 PSI for 8 hours
- Project tested in 2 sections
- Water pumped from a farm pond
- Biocide injected after drying to protect from corrosion

Hydrotest de-water structure

- Constructed with fencing, hay bales and erosion control fabric
- Water is pumped from pipeline after test and filters through structure.
- Structure built in a woods so water can soak into ground after exiting the structure

Final tie-in celebration for Phase I

Pollinator Planting

- Pollinators were seeded in appropriate locations along the route
- This was a test to see if they would adequately grow under restoration conditions
- Sites were very successful

Phase II
2018 Construction

- Shaiwassee River National refuse
- Re-route west of Saginaw
- Paralleling ITC transmission line

Shiawassee National Wildlife Refuge

Refuge Staff Education

- Started working with Refuge staff a full year in advance
- Added many items to assure protection of the wildlife
- Almost entirely HDD installation

Invasive Species Protection

- All vehicles and equipment were pressure washed before entering the site
- Swamp mats were either newly purchased or thoroughly steam cleaned

Shiawassee HDD

- 2,500 ft directional drill completed with 2 rigs
- Drilled from opposite ends of the site meeting in the middle 100 ft below the ground
- Minimized mud releases in the wetland by utilizing this method
- Sound barriers installed to protect the wildlife

Local Fire Department site training

Blanding Turtles

Blanding Turtle nests were discovered during environmental protection barrier installation

Herpetologist Dave Munsford took eggs found and hatched them in an incubator at his lab

Turtles were released back in the same spot they were discovered.

Turtle Release

- Project Manager and Environmental Engineers release turtles back into original habitat

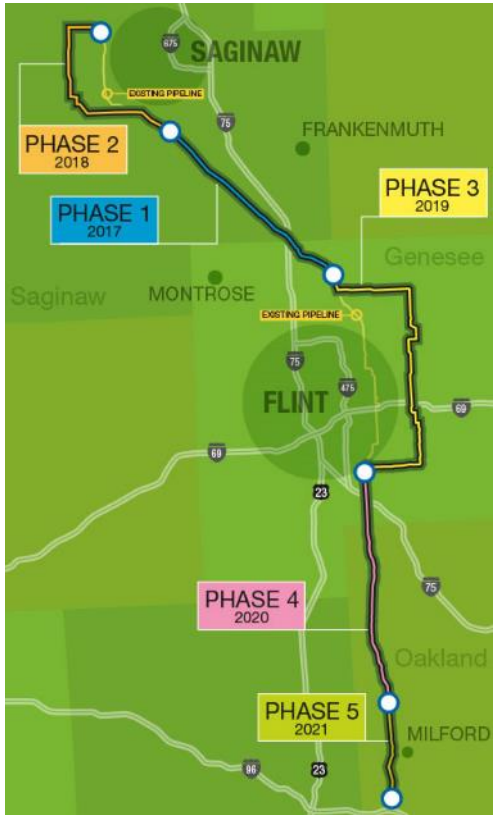
De-Watering Filtration

- Landowner of pond utilized for water source concerned about rust and sediment
- Environmental wanted to try new process for filtering water through a flocculant and burlap wrap

De-Watering Filtration

- Water rust and sediment was dramatically eliminated in water returning to pond
- Size of dewatering structure was reduced
- Rust clean up was minor

Phase III 2019 Construction



- Follows existing electric an pipeline corridors
- Rain delay 6 weeks
- Very congested right of way for last 7 miles of project

Road Bores

- For shorter inaccessible surface distances, like under roads and rail roads, road bores are used. A 24” casing is bored under the road, then a pipeline section is welded to the casing and pulled through.

Stringing

- Transporting pipe from yard to site. Laid in a line along the right of way in preparation for bending and welding.

Bending

- A bending machine is used to bend the pipe to follow topographical changes.

Welding

- Each pipe joint is welded together above ground.

X-Ray

- All welds are inspected and x-rayed by technicians to ensure they meet standards.

Coating

- The sections of the pipe that were left bare to allow room for welding are coated to prevent future corrosion.

Dewatering Structure

- More detailed flocculant structure with injection cannons
- Added 2 sediment ponds and more dense burlap filtering
- Larger capacity to adequately handle volume of water

Structure Complete

Structure Managing Water

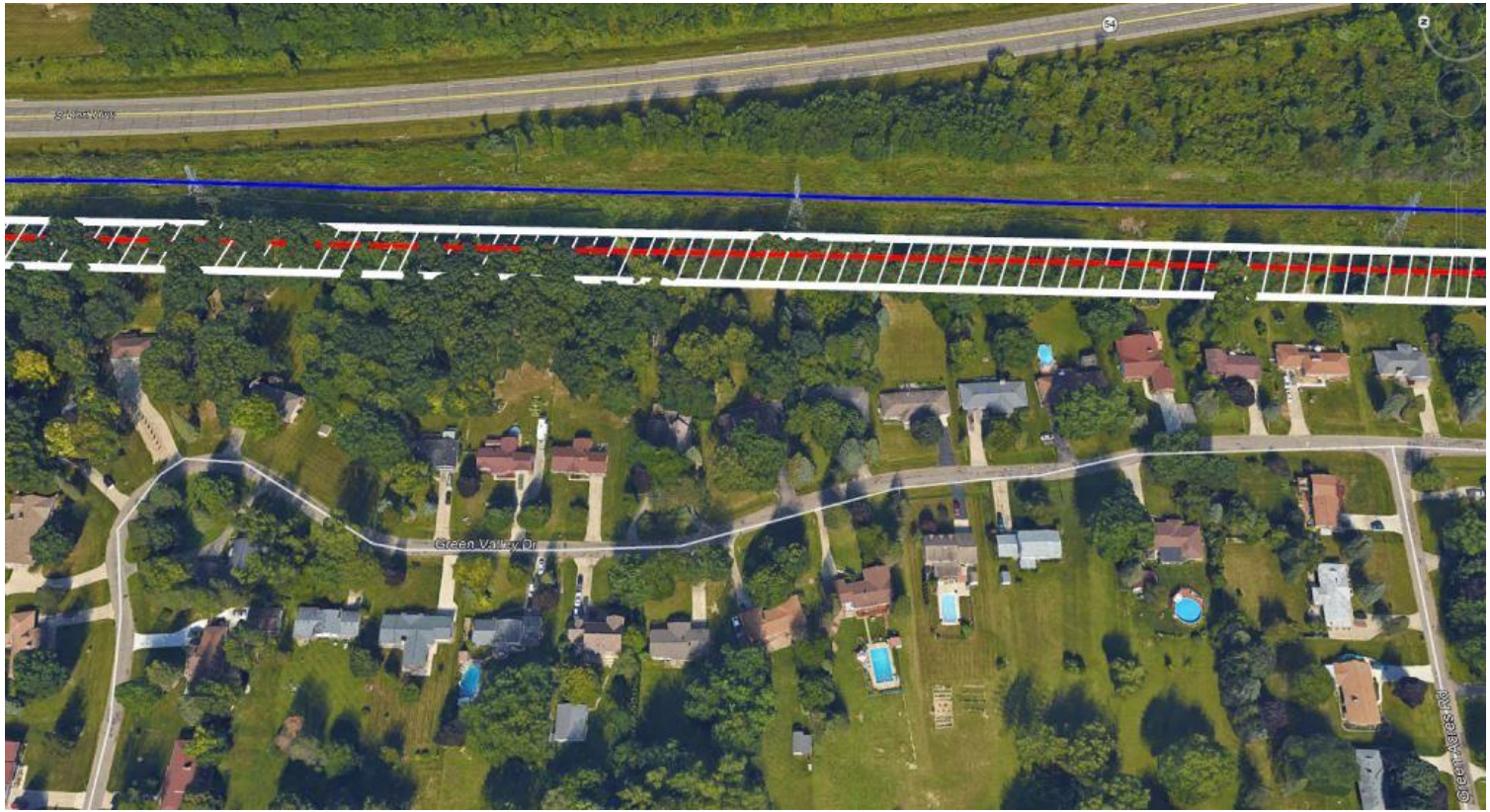
Hydrotest water returning to the Flint River

- Water returning to the Flint river tested and cleaner than the river itself
- Dewater structure was built large enough to handle the large volume of water
- Structure was utilized 2 times as the pipeline was split in 2 tests.

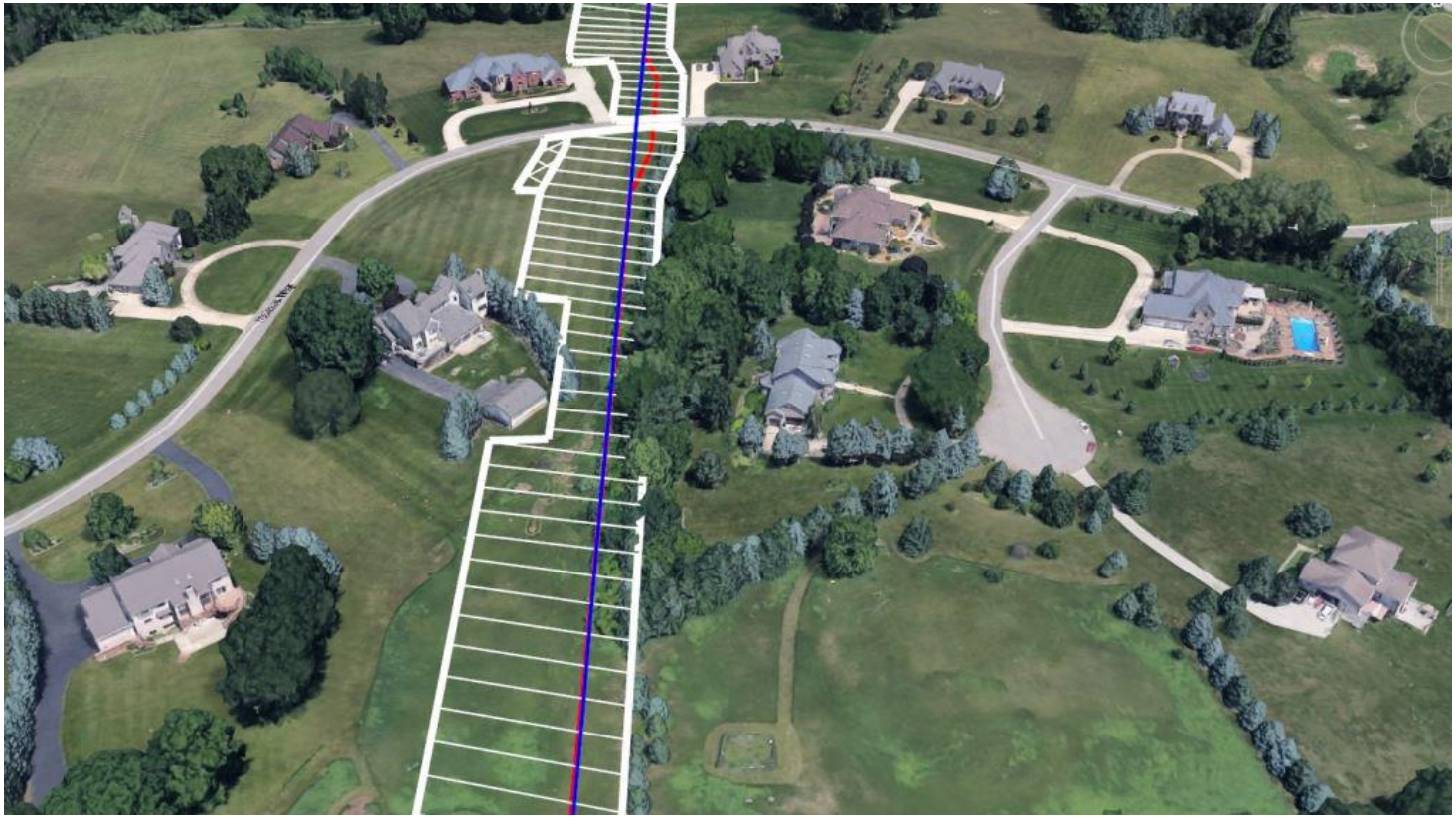
Phase IV
2020 Construction

- Phase IV and V were combined
- Huron Clinton Metro Park
- Highland School
- Gravel pit mining

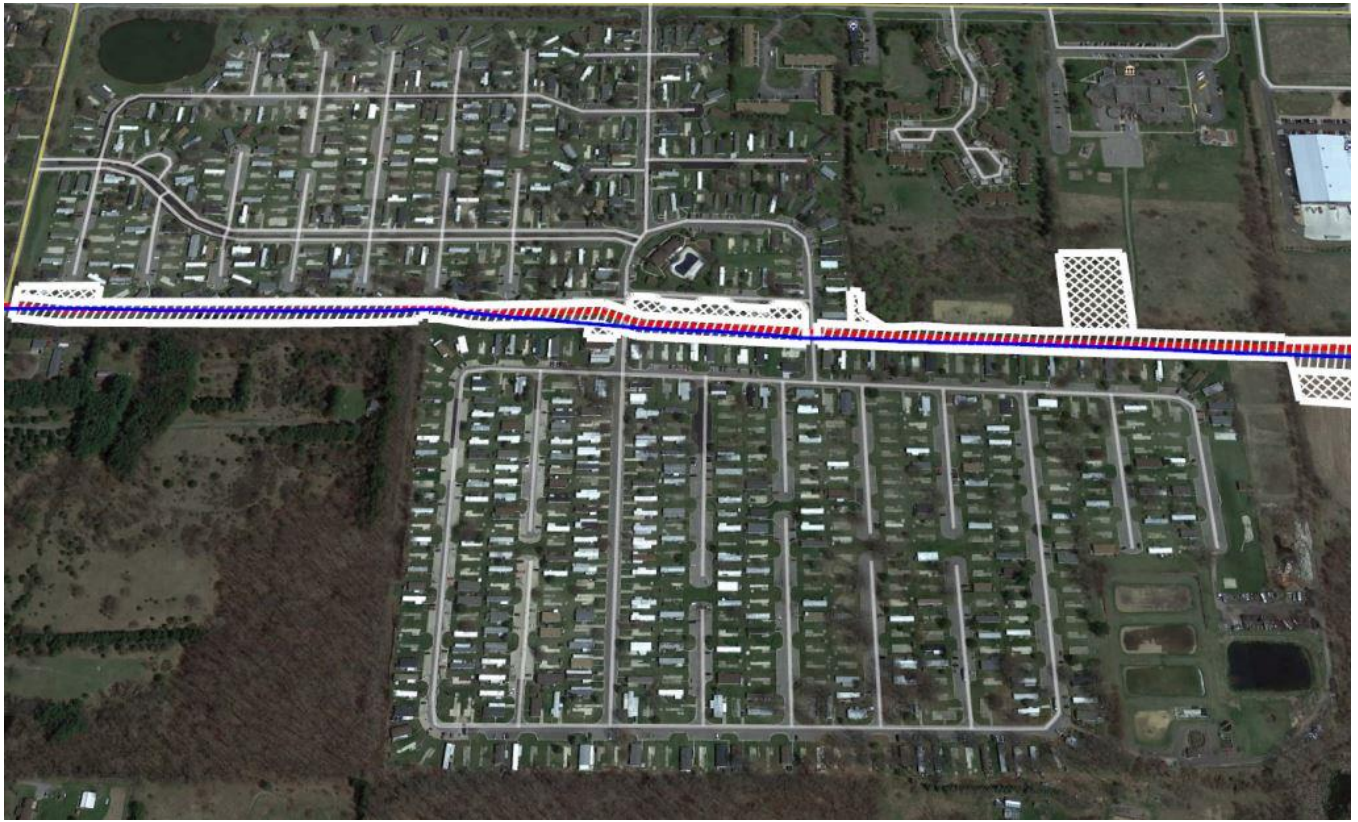
Huron Clinton Metro Park



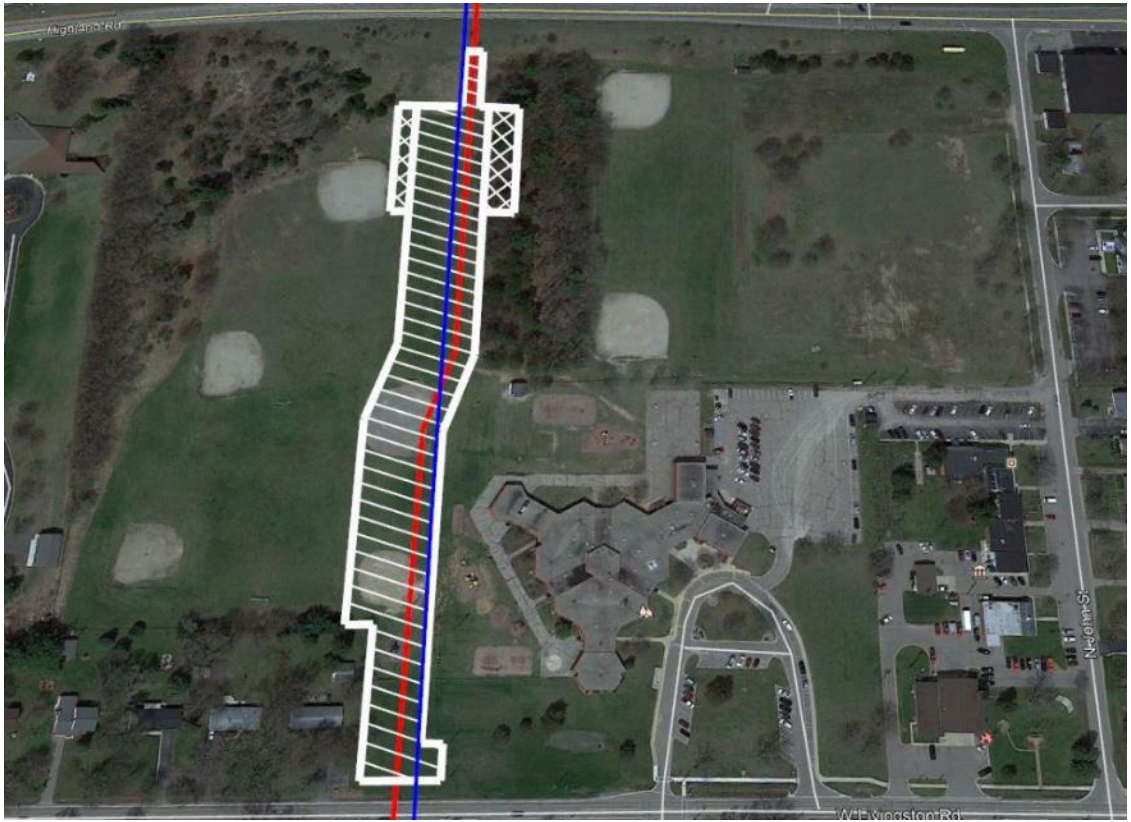
Routing through Expensive Homes



Complications with an existing trailer park

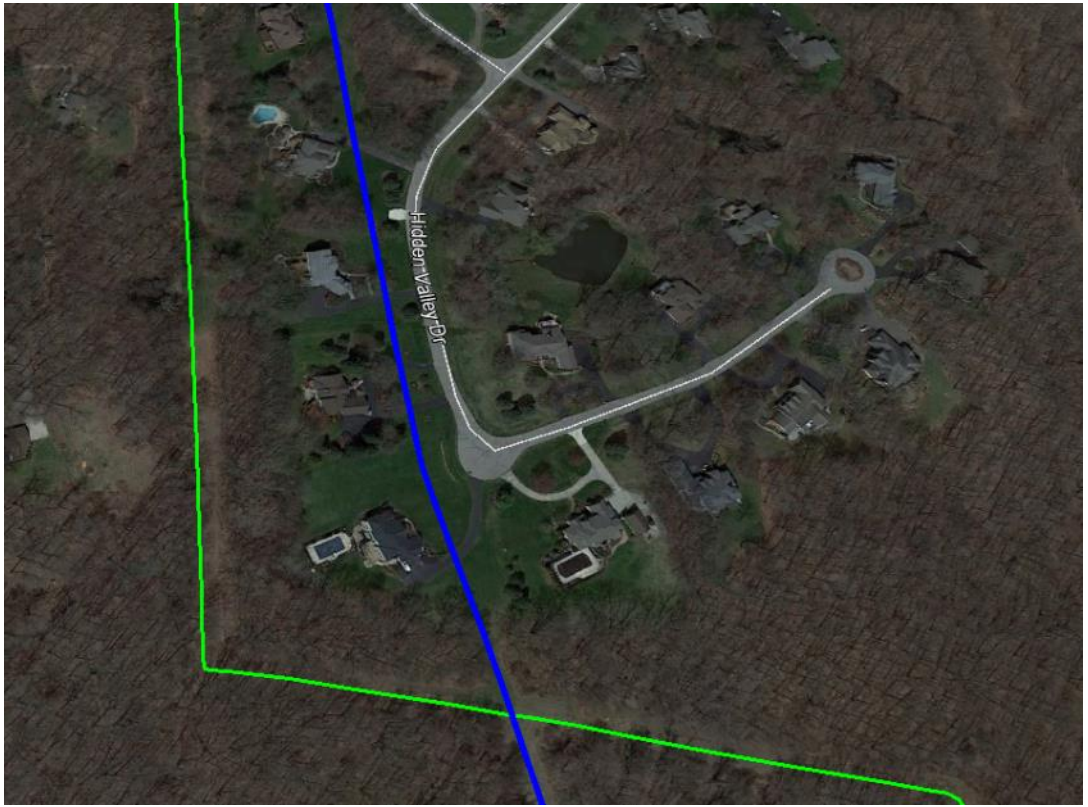


Close to Schools



Pipeline in a dredged pond

Homes between 2 pipelines



Saginaw Trail Pipeline

Questions