

Count on Us[®]

Consumers Energy

Muskegon Waste Water Treatment Site Muskegon County, MI



ENERGY READY OVERVIEW

January 1, 2017

CONTACT US

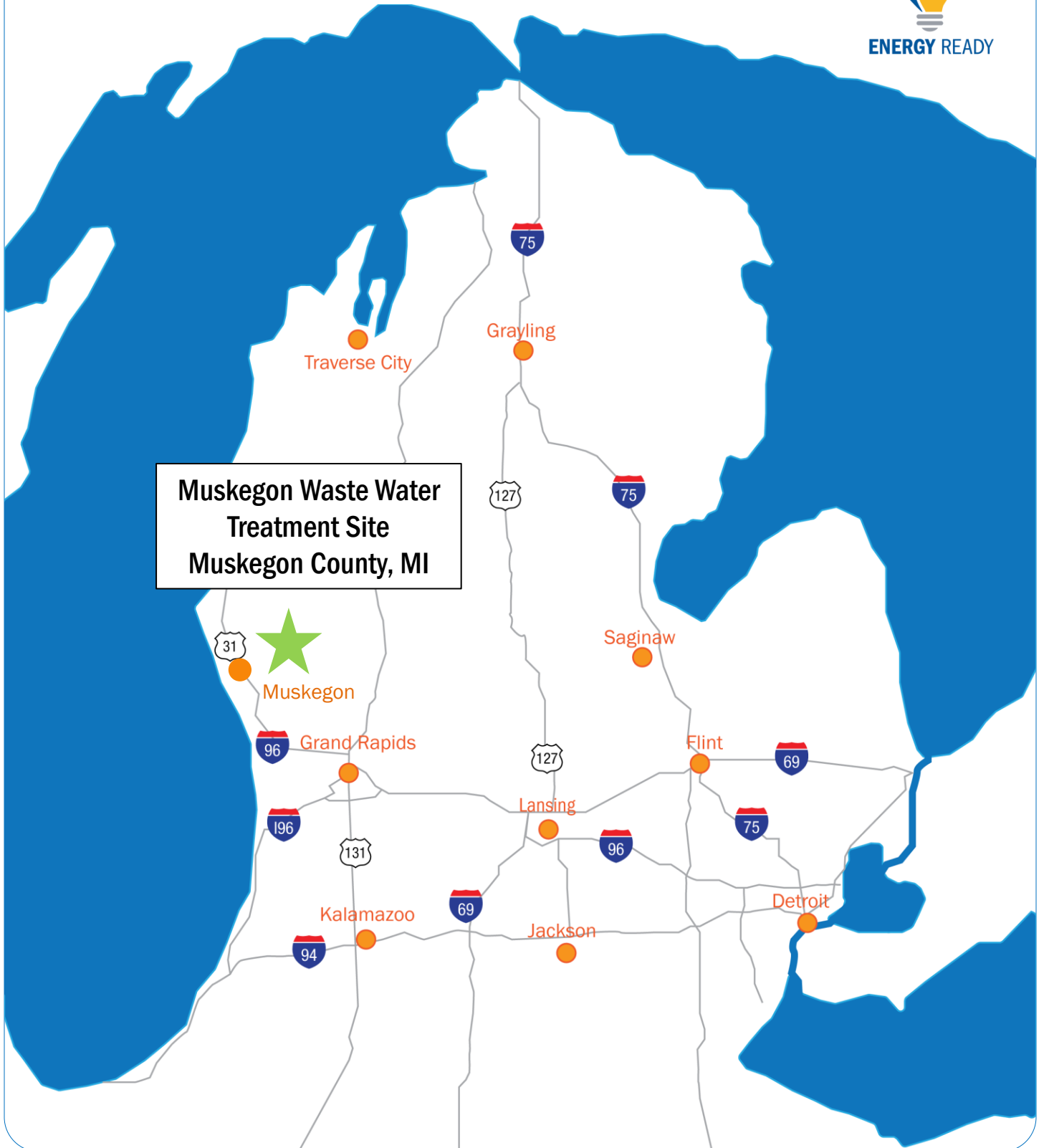
Scott Corrin, Economic Development Manager
517-374-2248 ▪ scott.corrin@cmsenergy.com

Consumers Energy Business Center ▪ 800-805-0490
ConsumersEnergy.com/businessmatters

Michigan



ENERGY READY



At Consumers Energy, we're committed to providing information to help you make sound business decisions. We strive to meet and exceed your expectations and champion the success of your business in Michigan.

This Energy Ready profile is our assessment of this site's energy potential. You'll find details about the site's existing energy infrastructure, and estimated costs to adjust the site's features based on how your business plans to use energy. We hope you'll find it useful as you evaluate and make decisions about this site's potential for your business.

To help us deliver more precise cost estimates, we would like to learn more about how your business uses energy. Specifically:

Electricity

- Diversified peak demand in megawatts (MW)
- Estimated annual electricity use in kilowatt hours (kWh)
- Hours of operation

I would appreciate the opportunity to learn more about your project, understand your long-term plans and find sites that meet your unique needs. Contact me directly at 517-374-2248 or scott.corrin@cmsenergy.com.

Sincerely,



Scott Corrin
Economic Development Manager



ENERGY READY SITE OVERVIEW



ENERGY READY

SITE ADVANTAGES

Low voltage distribution available, up to 1.5 MW

High voltage distribution from 2.5 MW to 100 MW

Energy efficiency and construction incentives available

High voltage electric and natural gas service reliability

Construction timelines tailored to your needs

ECONOMIC DEVELOPMENT SERVICES

CONSUMERS ENERGY

Energy Rate Estimates

We'll estimate your electric and natural gas costs and offer energy-intensive rate options with your growth plans in mind.

Engineering Service Estimates

We'll estimate your costs to re-engineer sites based on how your business uses energy.

Utility Infrastructure Mapping

Our maps show you where pipes and wires lie, and can help service providers understand how to serve your site.

Site-Specific Engineering Information

Our Energy Ready site inventory is backed by our strong relationships with local community agencies.

New Construction and Energy Efficiency Incentives

We offer rebates for energy-efficient equipment and buildings, and help you reduce or eliminate upfront energy infrastructure costs.

CONTACT

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COUNTY OF MUSKEGON

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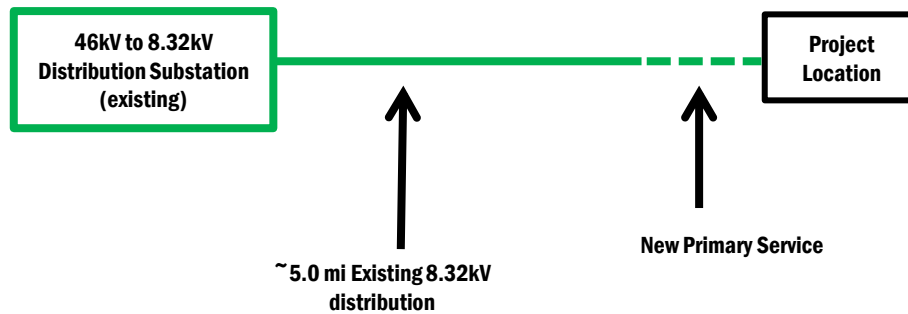


ELECTRIC – LOW VOLTAGE DISTRIBUTION

Ideal Load Range: Up to 1.5 MW



ENERGY READY



Connection Options: Costs for Electric Service

Option	Estimated Lead Time ²	Estimated New Right of Way Required ³	Estimated Minimum Project Cost	Maximum Electric Demand	Consumers Energy Construction Incentive	Customer Contribution
Base Service – Single 8.32kV line from existing distribution system	6 months	Minimal	\$1,100,000	1.5 MW	\$690,000	\$410,000 ¹

1. A 5 year full service contract for 1.5 MW or more of demand at CVL3 and rate GPD will provide the construction incentive shown. Refer to Tariff C1.4. Additional base service options may be available or required at this site depending on electric demand and load characteristics.

2. All estimates and lead times are conceptual and could be higher. Actual costs, timing and customer contribution will be determined during development of the contract for facilities.

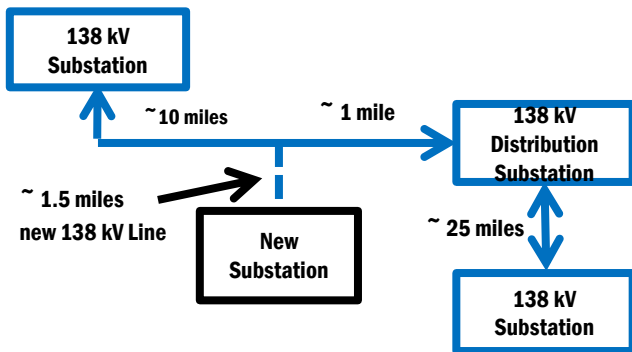
3. Represents new third party right of way. Consumers Energy will require that the customer provide easements for all lines and facilities located on the customer property.

ELECTRIC – HIGH VOLTAGE (138 kV)

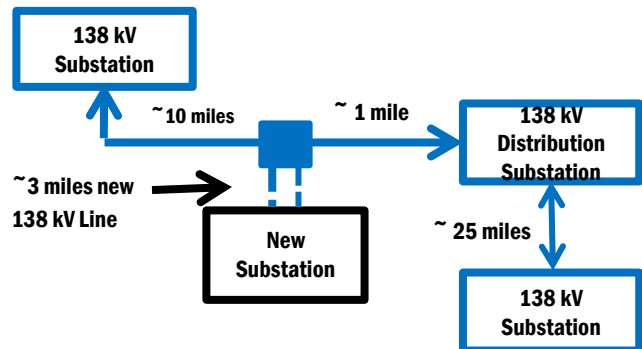
Ideal Load Range: 2.6 MW to 100 MW



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138 kV BASE SERVICE CONNECTION OPTION



138 kV REDUNDANT SERVICE CONNECTION OPTION

Connection Options: Costs for Electric Service if Electric Demand is at least 2.6 MW

Option	Estimated Lead Time ⁴	Estimated New Right of Way Required ⁷	Estimated Minimum Project Cost	Minimum Electric Demand	Practical Maximum Demand ⁸	Consumers Energy Construction Incentive	Customer Contribution
Base Service - 138 kV Line Only (customer builds/owns substation)	18-24 months	1.5 Miles	\$ 900,000	2.6 MW	100 MW	\$ 900,000 ¹	\$ 0 ¹
Base Service – Single 138 kV Line and Single Transformer Substation	18-24 months	1.5 Miles	\$ 2.7 million	7.7 MW	100 MW	\$ 2.7 million ²	\$ 0 ²
Redundant Service – two 138 kV Lines and Two Transformer Substation	24 months	3 Miles	\$8.5 million	20.5 MW	100 MW	\$7.3 million ³	\$1.2 million ³

138 kV Line Reliability for Base Service Options:

Predicted Momentary Interruption Rate ^{5,6}	Predicted Extended Outage Rate ^{5,6}	Predicted Reliability % ⁶
1 every 1.6 years	1 every 6.3 years	99.996%








1. A 5 year full service contract for 2.6 MW or more of demand at CVL1 and rate GPD will provide a construction incentive sufficient to cover the cost of typical base facilities at this site. Refer to Tariff C1.4. Additional base service options may be available or required at this site depending on electric demand and load characteristics.
2. A 5 year full service contract for 7.7 MW or more of demand at CVL1 and rate GPD will provide a construction incentive sufficient to cover the cost of typical base facilities at this site. Refer to Tariff C1.4. Additional base service options may be available or required at this site depending on electric demand and load characteristics.
3. A 5 year full service contract for 20.5 MW or more of demand at CVL1 and rate GPD will provide a construction incentive sufficient to cover the cost of typical base and redundant facilities at this site. Refer to Tariff C1.4. Customer contribution is required for 35 year present worth of annual ownership charges for redundant facilities.
4. All estimates and lead times are conceptual and could be higher. Actual costs, timing and customer contribution will be determined during development of the contract for facilities.
5. Momentary Interruption is defined as an interruption or series of interruptions lasting no more than five minutes. Extended Outage is defined as an outage lasting longer than five minutes.
6. Outage rates are based upon system average outage rates for 138 kV lines only, and the predicted reliability % represents the estimated amount of time the facility is in service.
7. Represents new third party right of way. Consumers Energy will require that the customer provide easements for all lines and facilities located on the customer property.
8. This represents the maximum demand that can be practically served from the respective option with minimal system upgrades. Greater demands will be considered with additional analysis.

EXISTING FACILITIES



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LEGEND - Electric	
	Proposed Site
	138/46 kV Distribution Substation
	138 kV Distribution Substation
	46 kV Distribution Substation
	138 kV Lines
	46 kV Lines
	Electric Distribution Lines

All existing facility locations are approximate and not to be used for construction purposes. Always contact MISS DIG 811 before you dig.

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**Developed by
Consumers Energy,
in collaboration with:**



MICHIGAN ECONOMIC
DEVELOPMENT CORPORATION



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Muskegon Area First