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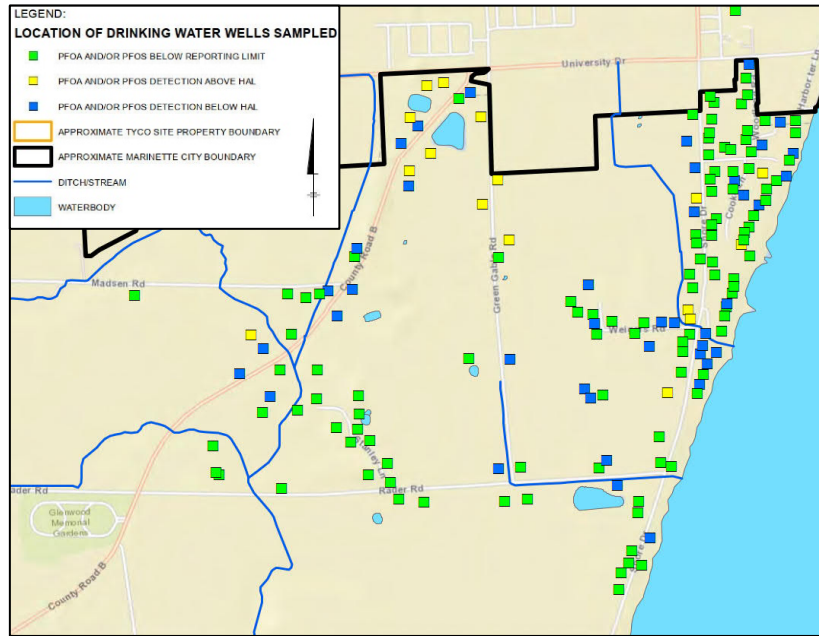
Water Supply Alternatives Analysis to identify Towns Potential Solution

**Town of Peshtigo, Wisconsin
January 6, 2022**

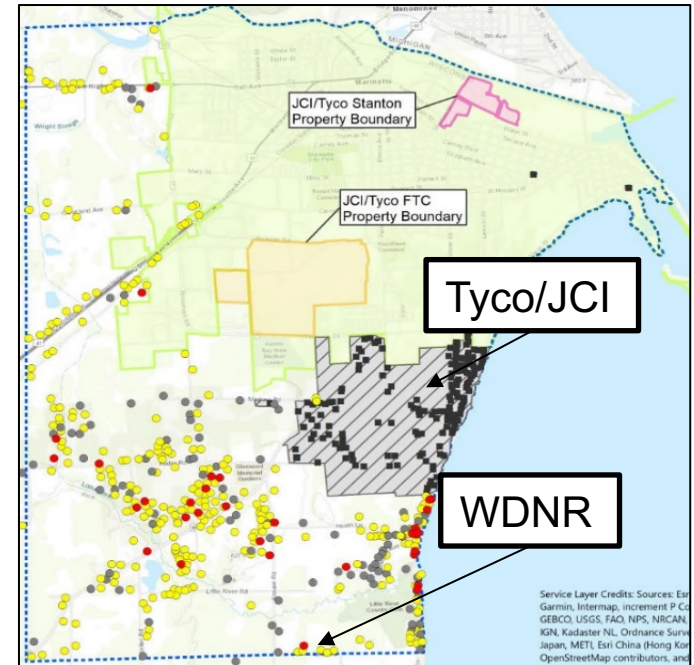
Nate Ewanowski, P.E. – Lead Engineer/Presenter
Steve Kluesner, P.E. – Project Manager



Permanent / Safe Drinking Water Options



Arcadis – Remedial Action Options Report



Wisconsin Department of Natural Resources

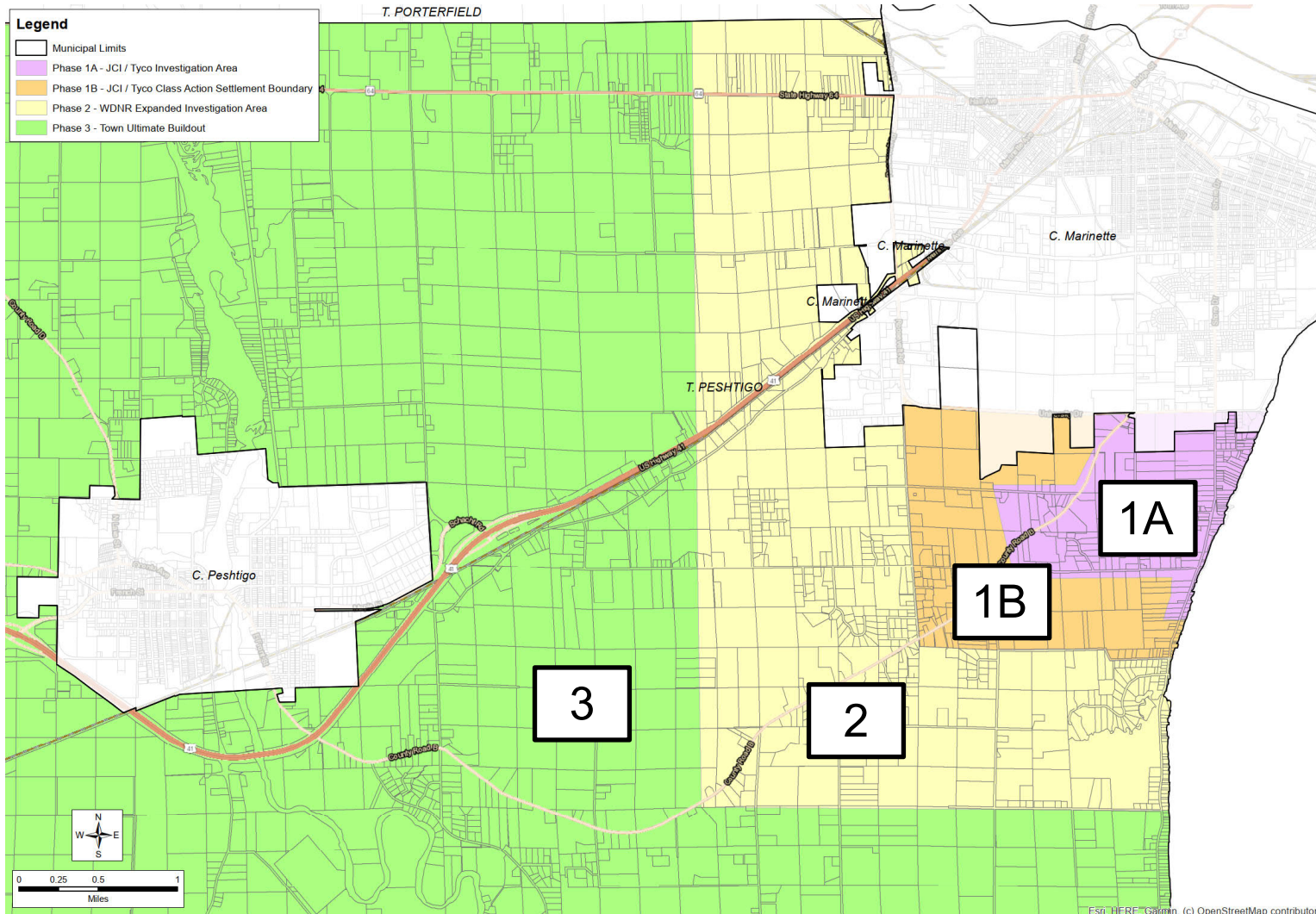
Sample Area	# Detect	# > 20 PPT
Tyco/JCI	60	32
WDNR	312	26

Testing Area Designation

- Area 1A – Tyco/JCI Initial Sampling
- Area 1B – Tyco/JCI Class Action Settlement Area (minus 1A)
- Area 2 – WDNR Expanded Sampling
- Area 3 – Town Ultimate Buildout

AREA	Estimated No. of Parcels
1A	201
1B	343
2	602
3	2,741

Multiple Sampling Areas Lead to Phased Investigation



Esri, HERE, Garmin, (c) OpenStreetMap contributors

Four Town-Identified Alternatives Each of which Provide Functional Solutions

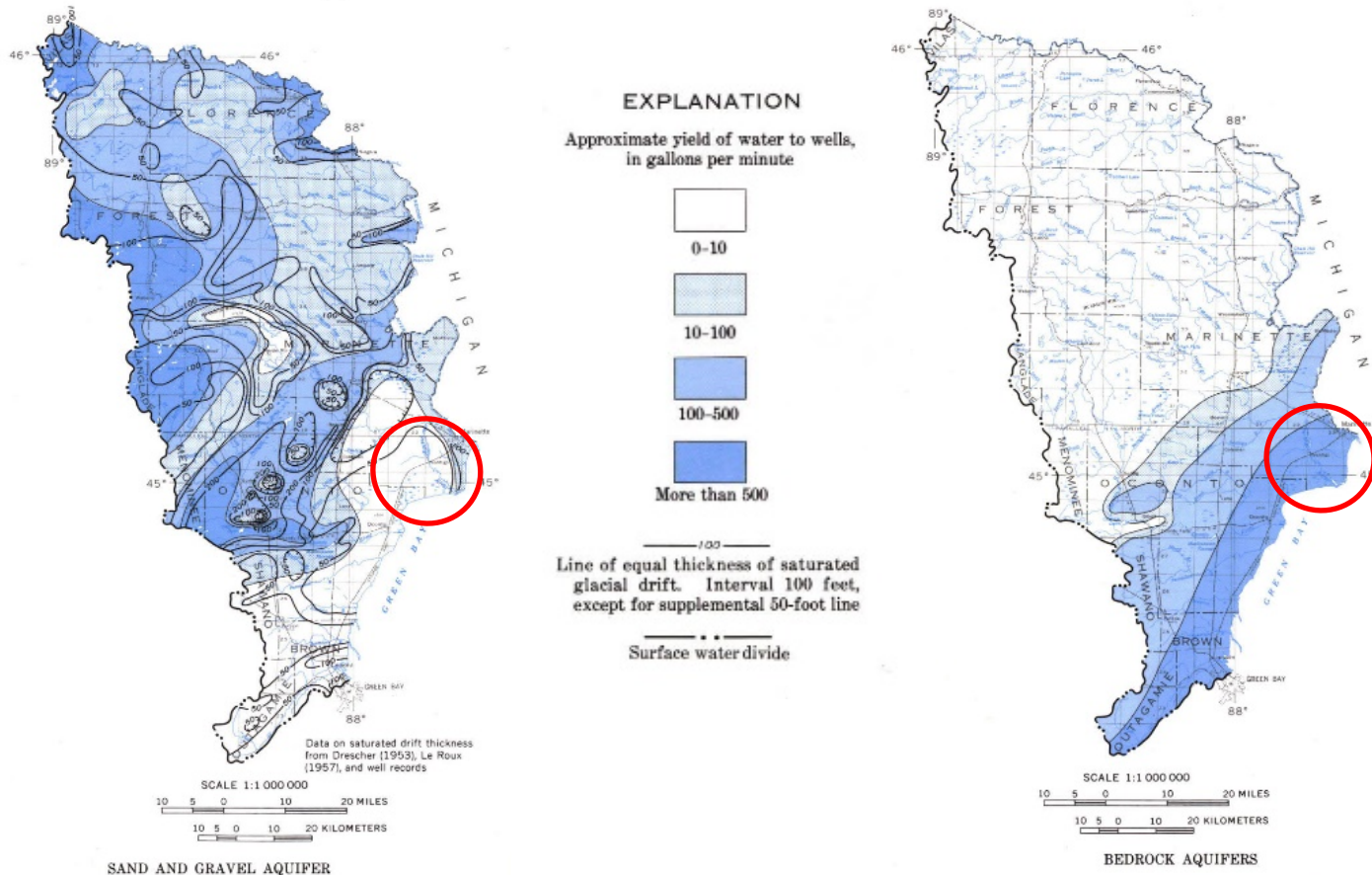
- Alternative No. 1 – Municipal Groundwater Treatment Facilities
- Alternative No. 2 – Municipal Surface Water Treatment Facility
- Alternative No. 3 – City of Peshtigo Retail Customers
- Alternative No. 4 – City of Peshtigo Wholesale Customer

Note: All Alternatives Include Distribution System

- Water Main
- Elevated Storage Tank

Alternative No. 1 – Groundwater

- Sand and Gravel (Shallow) and Bedrock (Deep) Aquifer Available



Source: USGS Water Resources of Wisconsin – Menominee Oconto Peshtigo River Basin

Alternative No. 1 – Groundwater

- 2 Deep Aquifer Well Facilities with Treatment
- Treatment Needed:
 - Radium – Requirement
 - Iron and Manganese – Benefit
- Locate Outside of PFAS Plume
 - Can Add PFAS Treatment, if Needed
- Pump Finished Water to Phased Areas
- Waste Discharge to City of Peshtigo
- Establish Town Water Utility
- Town Responsible for O&M



Example Filter Vessels – Westtech



City of Peshtigo Treatment Facility – Google Maps

Alternative No. 2 – Surface Water

- Green Bay of Lake Michigan

Figure 4: Bathymetry of Green Bay

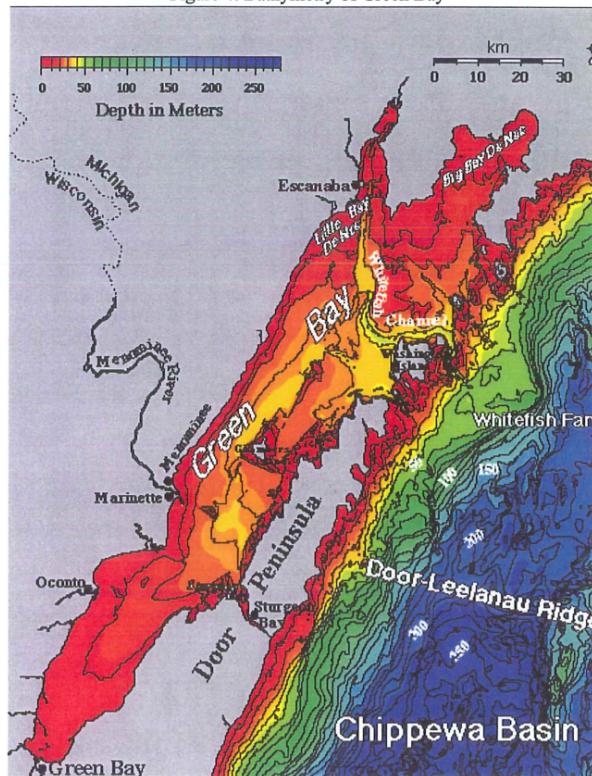
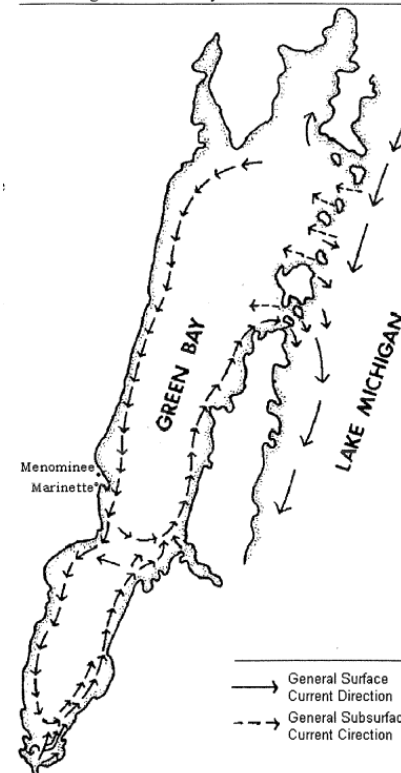


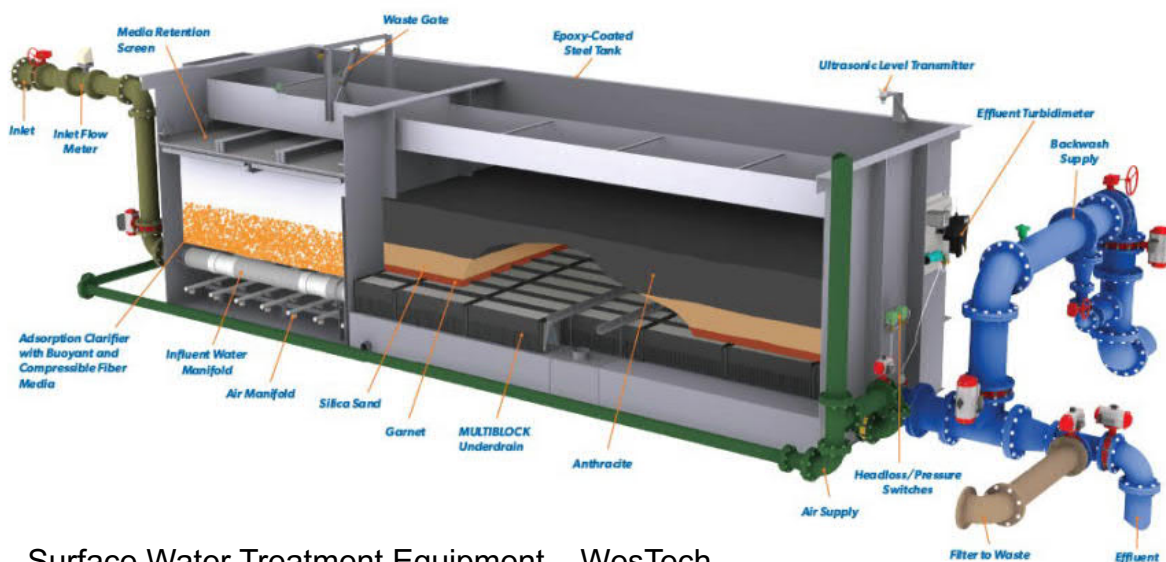
Figure 5: Green Bay Circulation Patterns



Source: Marinette Water Utility Source Water Assessment

Alternative No. 2 – Surface Water

- 1 Surface Water Treatment Plant
- 2 Treatment Trains
 - Clarification and Filtration
- Preliminarily Located at Boat Launch (50' x 50' Structure)
- Intake 2,000' into Green Bay
- Pump Finished Water to Phased Areas
- Waste Discharge to City of Peshtigo
- Establish Town Water Utility
- Town Responsible for O&M



Surface Water Treatment Equipment – WesTech

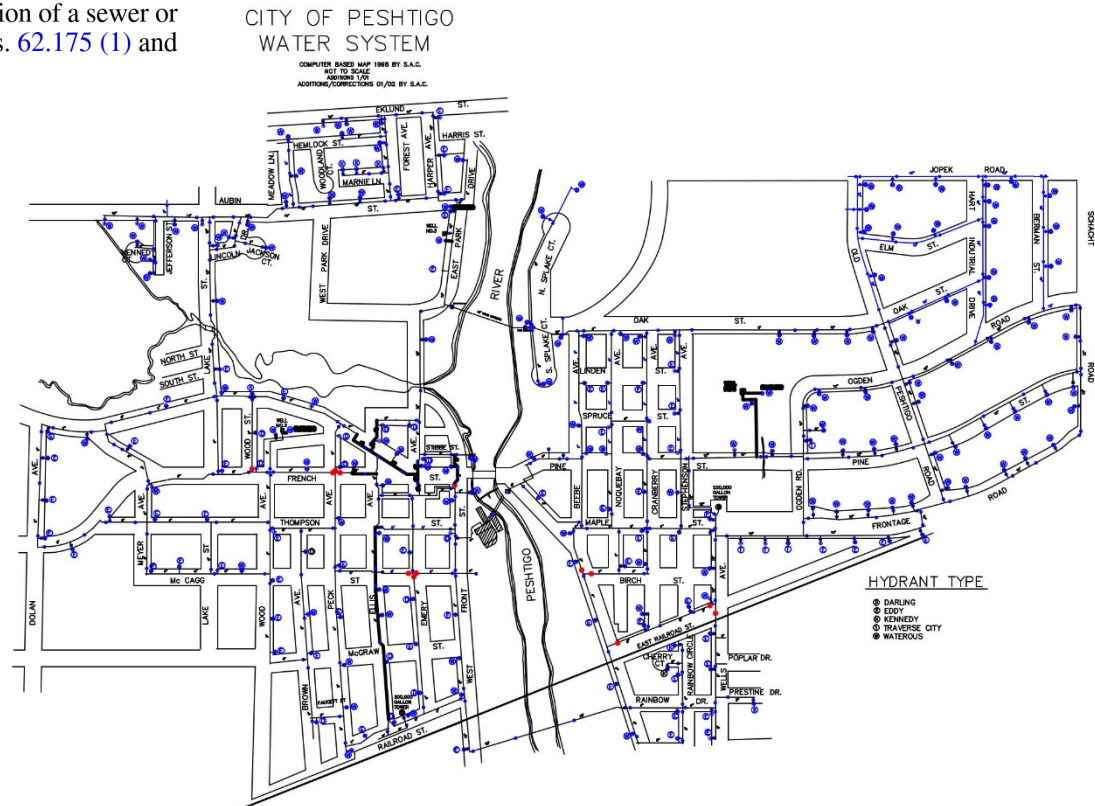
Alternative No. 3 – City of Peshtigo Retail

- Direct Extensions from City of Peshtigo Water Utility

60.52 Sewer and water systems of adjoining municipality. (1) With the approval of the town board, any city or village adjoining a town may construct and maintain extensions of its sewer or water system in the town. An extension of a sewer or water system under this subsection is subject to s. 62.175 (1) and the rights of abutting property owners.

Wisconsin Admin Code Chapter 60

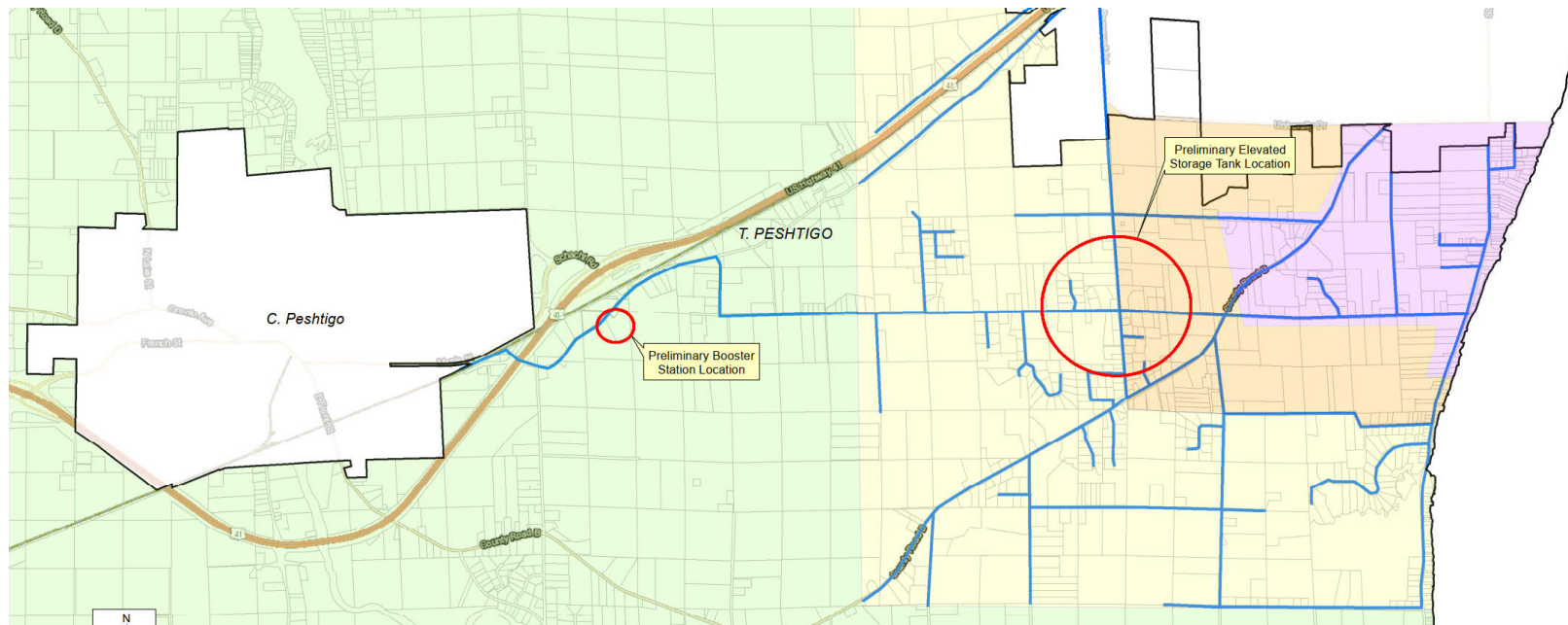
- 3 Well Facilities
- 2 Water Towers
- ~ 25 Miles Water Main
- ~1,400 Customers



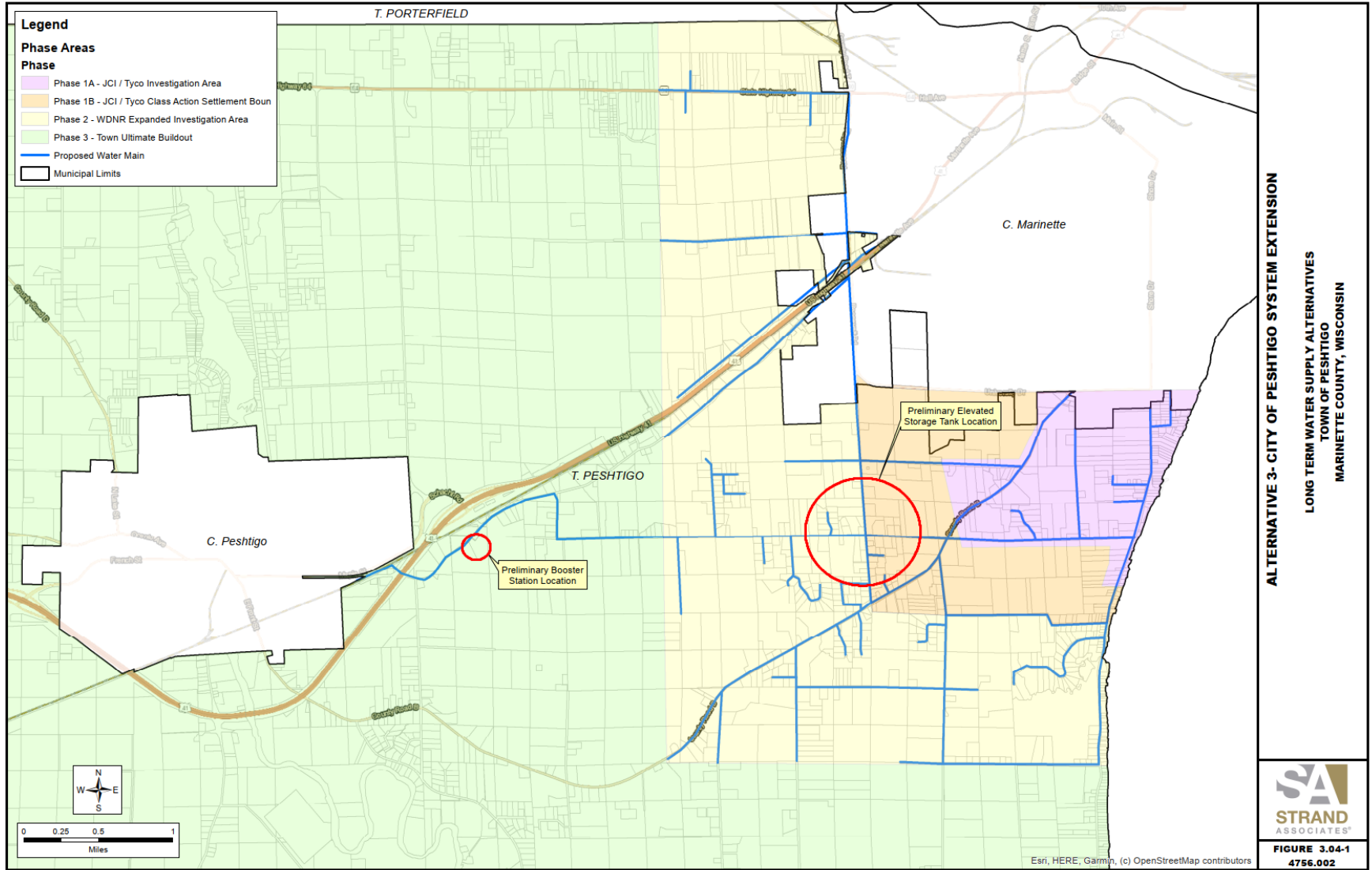
Alternative No. 3 – City of Peshtigo Retail

If selected, future discussions and negotiations would be sought to attain a mutually beneficial intergovernmental agreement with the City.

- Water Main Extensions from City (City Distribution System)
- Booster Pumping Station Required (City Operates)
- Elevated Tank May Not Be Required.
- Water Only Metered at Customer Service Line
- Town Water Utility Not Required
- All Operation and Maintenance by City of Peshtigo (Less Control by Town)
- PSCW Determines Rates for City of Peshtigo



Complete Extent of Alternative 3



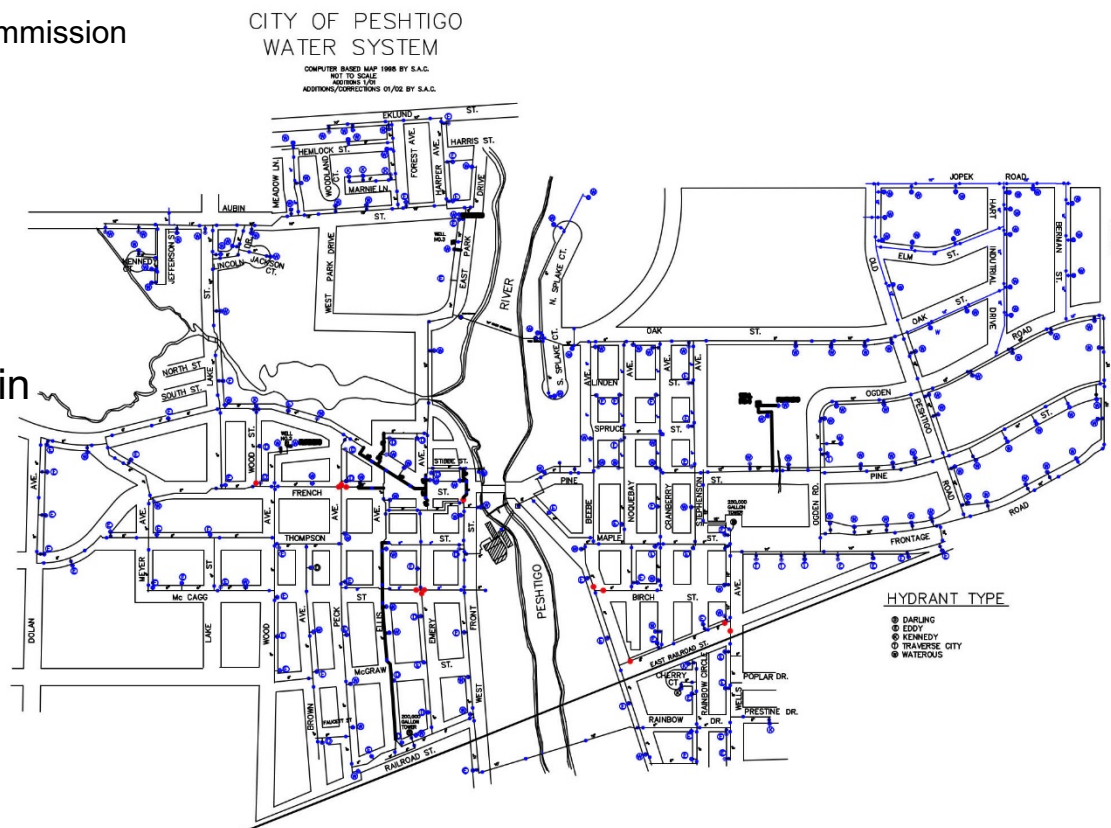
Alternative No. 4 – City of Peshtigo Wholesale

- Wholesale Purchase from City of Peshtigo Water Utility

- Sales for Resale (Account 466) – also referred to as wholesale customers. This account is for sales to other water utilities that resell the water to other customers on a retail basis.

Wisconsin Public Service Commission

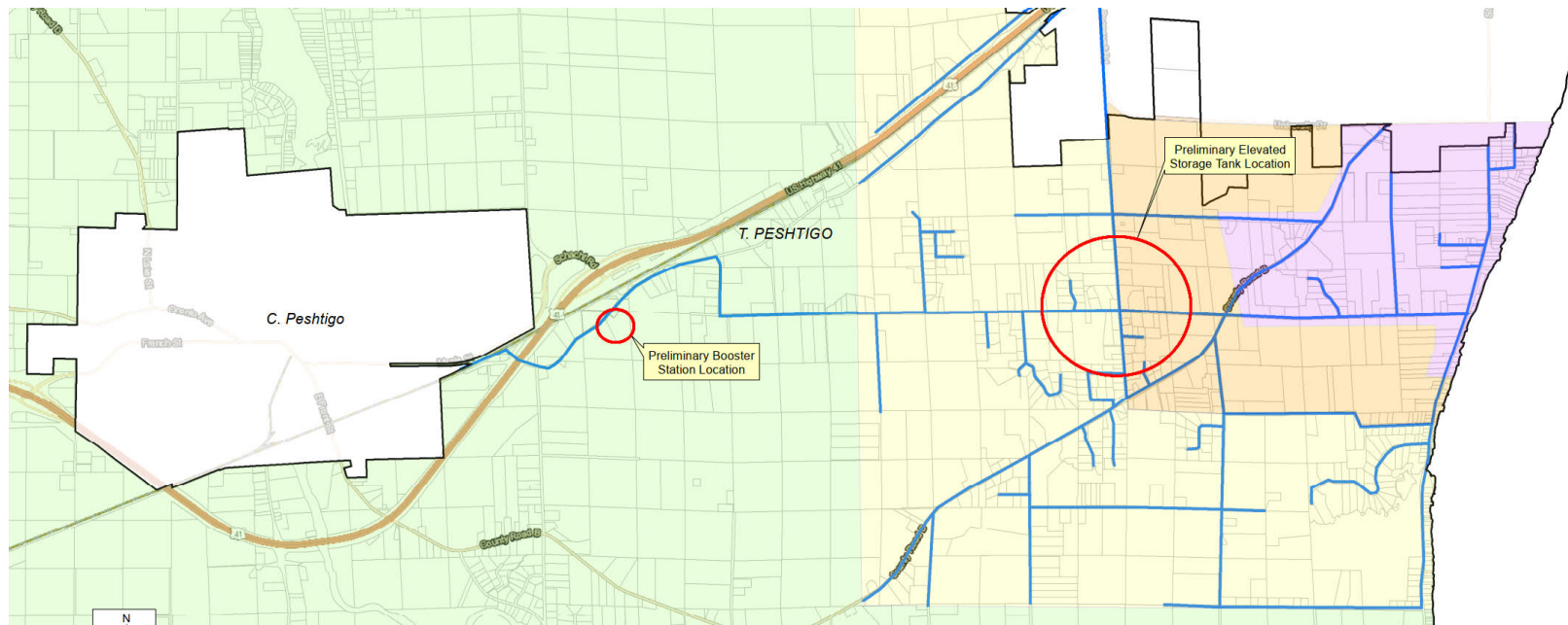
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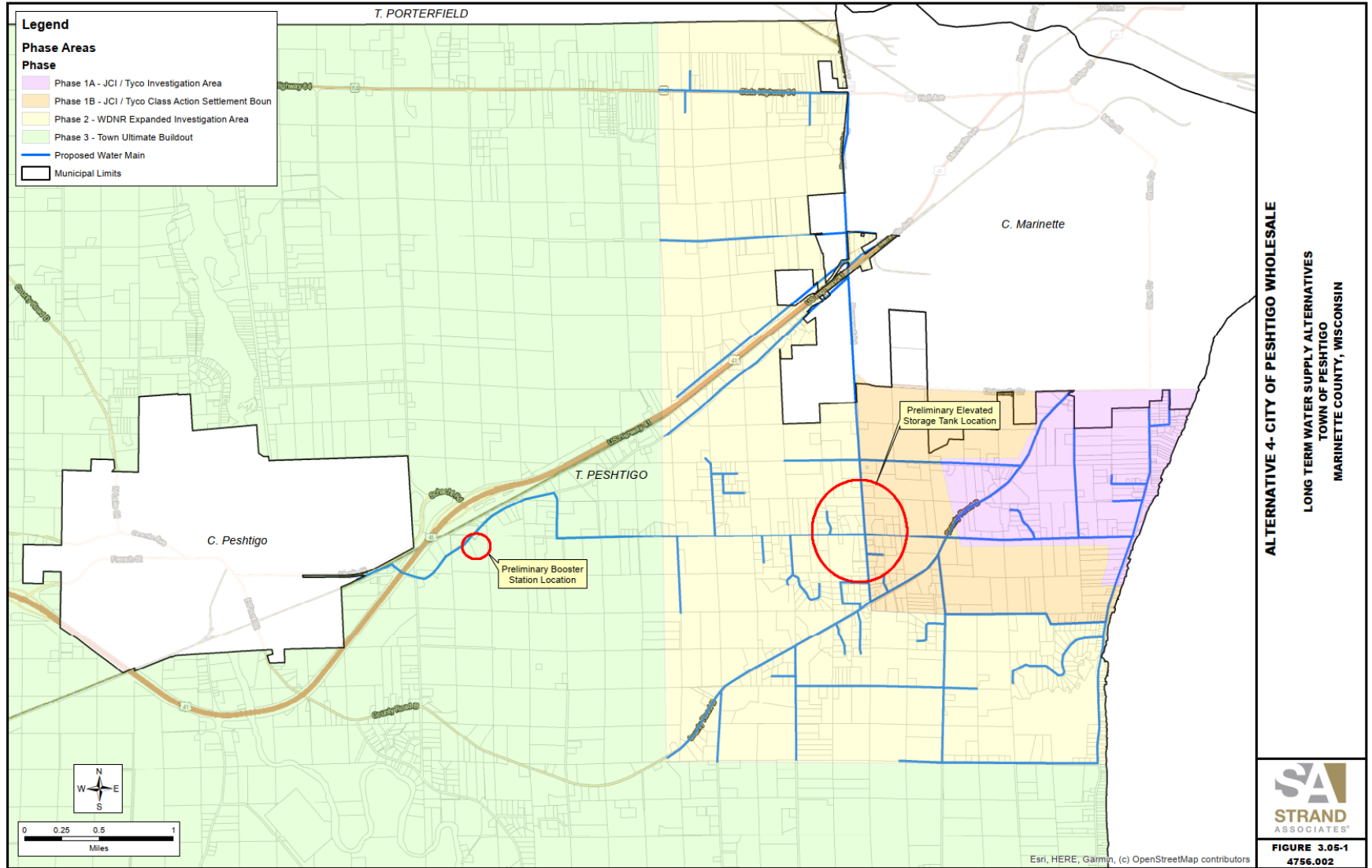
Alternative No. 4 – City of Peshtigo Wholesale

If selected, future discussions and negotiations would be sought to attain a mutually beneficial agreement with the City.

- Single Water Main Connection from City (Town Distribution System)
- Booster Pumping Station Required (Town Operates)
- Elevated Tank Required
- Wholesale Master Meter and Residential Meters
- Establish Town Water Utility
- Operation and Maintenance by Town of Peshtigo (Or Hired Operator)
- PSCW Determines Rates for Town of Peshtigo



Complete Extent of Alternative 4



Decision Matrix With Applicable Factors Which Provide The Town Confidence in Decision

Criteria	Weight (1-3)	Alt. 1	Alt. 2	Alt. 3	Alt. 4
Water Quality	3	4	3	4	4
Water Quantity	3	5	5	5	5
Piping Required	1	3	1	5	5
Future Buildout Potential	2	5	5	5	5
System Storage Capacity	3	5	5	5	5
System Supply Capacity	3	5	5	5	5
System Complexity	3	2	2	4	4
Cost Effectiveness	1	2	3	5	4
System Operation and Maintenance	2	1	1	5	2
Schedule	2	2	2	5	3
Permits	3	2	2	4	2
	Un-weighted	36	34	52	45
	Weighted	86	83	115	100

City of Peshtigo Retail Extensions Provides Safe, Reliable, and Affordable Drinking Water

Project Item	Anticipated Dates
Alternative Selection and Negotiation	Early 2022
Preliminary Engineering Report	Spring 2022
Design and Permitting	Summer 2022 to Winter 2022
Water Main Installation	Spring 2023 to Winter 2023
Water Tower Construction	Spring 2023 to Summer 2024
Booster Pump Station Construction	Spring 2023 to Fall 2023
Startup and Final Completion	Fall 2024

20-Year Project Cost Varies Depending on Negotiated Phase Service

Phase	Water Supply	Distribution System	Total
1A	\$8,747,000	\$12,885,000	\$21,632,000
1A and 1B	\$9,283,000	\$21,618,000	\$30,901,000
1A, 1B, and 2	\$11,604,000	\$60,610,000	\$72,214,000

is Ready to Help with the Town's Next Steps

1. Incorporate Final Comments into Design Report
2. Present to Town during Public Information Meeting
3. Participate in Conversations with Parties Involved
4. Review City of Peshtigo Capacity Study
5. Assist Town with Implementation of Town's Selected Alternative



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