HOUSE of REPRESENTATIVES

STATE OF MICHIGAN

Appropriations Requests for Legislatively Directed Spending Items

1. The sponsoring representative's first name:
   Greg

2. The sponsoring representative's last name:
   Alexander

3. The cosponsoring representatives' names. All cosponsors must be listed. If none, please type 'n/a.' A signed letter from the sponsor approving the co-sponsorship and a signed letter from the member wishing to co-sponsor are required. Attach letters at question #9 below.
   N/A

4. Name of the entity that the spending item is intended for:
   The Village of Peck

5. Physical address of the entity that the spending item is intended for:
   30 East Lapeer Street, Peck, MI 48466

6. If there is not a specific recipient, the intended location of the project or activity:
   Cook St as shown on the map as item #1. Brockway Rd from E. Lapeer St to south village limits as shown on the map as item #2. Clark St from Lord St to Hillview as shown on the map as item #3. E. Lapeer St from Brockway Rd to east village limits as shown on the map as item #4.

7. Name of the representative and the district number where the legislatively directed spending item is located:
   Greg Alexander | District 98

8. Purpose of the legislatively directed spending item. Please include how it provides a public benefit and why it is an appropriate use of taxpayer funding. Please also demonstrate that the item does not violate Article IV, S 30 of the Michigan Constitution.
   The purpose of the legislatively directed spending is for water and sewer infrastructure expansion to enhance the essential services available to the residents of the Village of Peck. By expanding and looping the water and sewer systems, we aim to support new development, ensuring that our community can accommodate growth while maintaining

high standards of living.

This expansion provides a significant public benefit by improving access to clean water and reliable sanitation for every resident. It ensures that the infrastructure can meet current and future demands, which is essential for public health, safety, and the overall quality of life in our community. Utilizing taxpayer funding for this project is appropriate because it addresses a fundamental need for basic services that are critical for community well-being. It supports sustainable development, attracts new residents, and can lead to economic growth, all of which contributes positively to the tax base.

This investment in infrastructure is a proactive step to secure the long-term health and prosperity of the Village of Peck.

9. Attach documents here if needed:
   Attachments added to the end of this file.

10. The amount of state funding requested for the legislatively directed spending item.
    1600000

11. Has the legislatively directed spending item previously received any of the following types of funding? Check all that apply.
    ["None"]

12. Please select one of the following groups that describes the entity requesting the legislatively directed spending item:
    Local unit government

13. For a non-profit organization, has the organization been operating within Michigan for the preceding 36 months?
    Not applicable

14. For a non-profit organization, has the entity had a physical office within Michigan for the preceding 12 months?
    Not applicable

15. For a non-profit organization, does the organization have a board of directors?
    Not applicable

16. For a non-profit organization, list all the active members on the organization's board of directors and any other officers. If this question is not applicable, please type 'n/a.'
    N/A

17. “I certify that neither the sponsoring representative nor the sponsoring representative's staff or immediate family has a direct or indirect pecuniary interest in the legislatively directed spending item.”
    Yes, this is correct

18. Anticipated start and end dates for the legislatively directed spending item:
    Start - May 2026 | End - October 2027

19. “I hereby certify that all information provided in this request is true and accurate.”
    Yes

VILLAGE OF PECK
"A Great Place to Come Home To"

30 East Lapeer * P.O. Box 317
Peck, Michigan 48466
Phone (810) 378-5131

Peck Water/Sewer Infrastructure Phase 2 Project

The Village of Peck is seeking funding from Representative Alexander's office for Phase 2 of our water infrastructure improvement project. In the original DWSRF plan that was submitted to EGLE the village went with alternative 4, which can be found on page 5 & 9 of the DWSRF Project Planning Document that is included. Our community was previously deemed significantly overburdened, as shown in the Finance Division Overburdened Determination Form, underscoring the critical need for this project.

Project Description:

- **Extension of Water Main (#1)**: This involves extending an 8-inch water main from Pavilion St and Cook St, running south and east along Cook St. This extension will connect to an existing 8-inch water main on Cook St, facilitating development and looping the water system for improved safety and reliability.
- **Replacement and Extension of Water Main (#2)**: We plan to replace a 4-inch water main from E. Lapeer St and Brockway, extending it to the southern village limits with an 8-inch line. This upgrade will enhance service and enable either commercial or residential development. Additionally, a sewer line will be installed along this route to expand sewer services.
- **Installation of Water Main (#3)**: An 8-inch water main will be installed along Clark St between Hillview and Lord St, completing a loop in the system for safer and more consistent water supply.
- **Extension of Water Main (#4)**: The water main on E. Lapeer St will be extended from Brockway Rd to the east village limits, supporting potential commercial or residential development.
- Each of these are marked on Map 5 (page 9 in the DWSRF Project Plan)as designated in parentheses.

Objective:

Phase 2 aims to improve the water supply's safety, reliability, and capacity, supporting future development and addressing our community's infrastructure needs.

Conclusion:

We respectfully request financial support from Representative Alexander's office to implement these critical improvements in our water infrastructure, enhancing services and development opportunities for the Village of Peck.

FINANCE DIVISION
OVERBURDENED PRELIMINARY DETERMINATION FOR FY25 SRF PROJECTS

Applicant Information

Applicant: Village of Peck
ITA Tracking Number: 111-5450
Funding Source: DWSRF
Regional System: ☐ Yes ☑ No

Contact Information

Name of Applicant Contact and Title	**Gary Bartow**
Email	**gbartow@fveng.com**
Phone Number	**(989) 239-2379**

Summary of Determination

Determination without calculation	**Significantly Overburdened**
Determination from Calculation	
SRF Loan Minimum to Maintain or Gain Overburdened Status	

The chart above displays the preliminary results of the application. If any of the boxes display a significantly overburdened determination than the applicant has a preliminary determination of significantly overburdened for FY25. If any of the boxes display overburdened, whether by calculation or not, the applicant has a preliminary determination of overburdened for FY25.

The following pages break down the information that was submitted and used for the preliminary determination. When a final determination has been made, the applicant will be notified of the result.

Initial Overburdened Screening

Name of Municipality	Village of Peck- Sanilac County
Median Annual Household Income	49,083
Taxable Value Per Capita	15,804
MAHI Threshold Qualification	
Overburdened Determination Without Need for Calculation	**Significantly Overburdened**

For determinations made using anticipated debt (i.e., determinations where the change in loan amount will change the applicant status from overburdened to not or vice versa), a final determination will be made based upon the final loan amount after bids/project scope is finalized and not the anticipated amount provided on this form.

If this applicant has applied for overburdened or significantly overburdened status in prior fiscal years, the numbers in the survey (i.e., breakdown of municipalities and their flow amounts, annual payments on existing debt, total OM&R, and REUs) will be compared to check for discrepancies as most of these numbers should be similar year to year. EGLE will contact the applicant if inconsistencies are found, and the final determination may change if the original numbers need to be updated.

*I **Gary Bartow** on behalf of **Village of Peck** hereby certify that the information in this form is complete, true, and correct to the best of my knowledge.

☑ Yes
05/28/2024

EGLE
MICHIGAN DEPARTMENT OF ENVIRONMENT, GREAT LAKES, AND ENERGY

Attachment #1 Fiscal Year 2025 DWSRF Project Priority List

Project Number	Applicant	Project Scope	Project County	Total Priority Points	Population Served by Project	Total Loan Amount Requested	Cost per Population	Emerging Contaminant Costs	BIL LSLR Eligible Costs	Non BIL LSLR Eligible Costs	Overburdened Determination	DWSRF Loan	DWSRF PF	BIL Emerging Contaminant PF	BIL DWSRF Supplemental Loan	BIL DWSRF Supplemental PF	BIL DWSRF LSLR Loan	BIL DWSRF LSLR PF	State LSLR + WM Grant	Total PF/Grant*
7815-01	City of Crystal Falls	LSLR and WM Rep	Iron	80	508	$ 6,085,000	$11,978.35		$ 1,922,440	$ -	Significantly Overburdened									
7801-01	City of Mt. Morris	LSLR and WM Rep	Genesee	80	1,215	$ 21,620,000	$17,794.24		$ 1,800,000	$ -	Significantly Overburdened									
7621-01	Village of Quincy	LSLR and WM Rep	Branch	80	100	$ 2,335,000	$23,350.00		$ 210,000	$ -	Overburdened									
7783-01	City of Caro	LSLR and WM Rep	Tuscola	75	5,029	$ 5,365,000	$1,066.81		$ 676,545	$ 274,275	Overburdened									
7865-01	City of Belding	LSLR and WM Rep	Ionia	75	5,938	$ 7,220,000	$1,215.90		$ 814,000	$ 1,000,000	Overburdened									
7816-01	City of Gladstone	WM Rep and Intake Protection	Delta	75	5,248	$ 7,930,000	$1,511.05		$ 47,725	$ -	Overburdened									
7791-01	City of Gladwin	LSLR, WM Rep, Valves and Hydrants	Gladwin	75	3,069	$ 4,724,000	$1,539.26		$ 137,170	$ -	Overburdened									
7795-01	City of Manistique	LSLR, WM Rep and Looping, TM and Meters	Schoolcraft	75	2,814	$ 6,725,000	$2,389.84		$ 3,115,809	$ -	Significantly Overburdened									
7742-01	City of Hudson	LSLR, WM Rep, Storage Improvements	Lenawee	75	2,415	$ 8,525,000	$3,530.02		$ 1,925,000	$ -	Overburdened									
7874-01	Village of Peck	WM Rep, Storage and Well Improvements	Sanilac	75	603	$ 3,050,000	$5,058.04		$ -	$ -	Significantly Overburdened									
7857-01	City of Casplan	WM Rep, Storage, PRV, Well and PS Improvements	Iron	75	805	$ 4,110,000	$5,105.59		$ -	$ -	Overburdened									
7861-01	City of Manton	LSLR, WM Rep, and Storage Improvements	Wexford	75	1,258	$ 6,500,000	$5,166.93		$ 5,278,100	$ -	Significantly Overburdened									
7770-01	City of Munising	LSLR	Alger	75	330	$ 2,105,000	$6,378.79		$ 2,105,000	$ -	Overburdened									
7826-01	Village of Alpha	LSLR, WM Rep, SCADA, and Well Improvements	Iron	75	129	$ 850,000	$6,589.15		$ 12,000	$ 216,000	Significantly Overburdened									
7646-01	Village of Newberry	LSLR, WM Rep, Storage and AMP	Luce	75	1,600	$ 11,000,000	$6,875.00		$ 5,250,000	$ -	Significantly Overburdened									
7754-01	Village of Hillman	New Wells, WM Rep, Storage Improvements	Montmorency	75	679	$ 6,800,000	$10,014.73		$ -	$ -	Significantly Overburdened									
7739-01	Carrollton Twp.	WM Rep	Saginaw	75	500	$ 5,200,000	$10,400.00		$ -	$ -	Significantly Overburdened									
7843-01	Village of Maple Rapids	LSLR and New Well	Clinton	75	573	$ 5,980,000	$10,436.30		$ 1,300,000	$ -	Overburdened									
7786-01	Village of Roscommon	LSLR, WM Rep, Well and Storage Improvements	Roscommon	75	981	$ 11,545,000	$11,768.60		$ 500,000	$ 1,000,000	Overburdened									
7834-01	Village of Akron	WM Rep, WTP and Storage Improvements	Tuscola	75	402	$ 13,200,000	$32,835.82		$ -	$ -	Overburdened									
7716-01	YCUA (townships)	LSLR, WM Rep, PS and Meter Improvements	Washtenaw	70	128,175	$ 16,515,000	$128.85		$ 165,000	$ -										
7822-01	Adams Township	New WM and Storage, WTP Improvements	Houghton	70	9,417	$ 8,000,000	$849.53		$ -	$ -	Overburdened									
7695-01	City of Northville	LSLR, WM Rep, PVR	Wayne	70	6,119	$ 9,335,000	$1,525.58		$ -	$ 84,000										
7799-01	City of Stanton	LSLR and WM Rep	Montcalm	70	1,348	$ 3,505,000	$2,600.15		$ 423,200	$ -	Overburdened									

VILLAGE OF PECK

SANILAC COUNTY, MICHIGAN

DRINKING WATER
STATE REVOLVING FUND (DWSRF) DRAFT
PROJECT PLANNING DOCUMENT

WATER SYSTEM IMPROVEMENTS

FLEIS&VANDENBRINK
DESIGN. BUILD. OPERATE.

Date: June 2024
Project No.: P20443

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INTRODUCTION

The purpose of the Village of Peck Drinking Water Revolving Fund Project Plan is to fulfill the project planning requirements under the States' Safe Drinking Water Act 399 and to provide the basis for ranking of the Village's proposed waterworks improvements under a Project Priority List for a low-interest Drinking Water Revolving Fund Loan.

The scope of the project plan includes a summary of the existing water quality and reliability issues within the Village's service area, projection of the population served within the next 20 years, identification of principal alternatives to meet the future water needs of the service area, and evaluation of environmental impacts resulting from completion of a selected alternative in both the long and the short term.

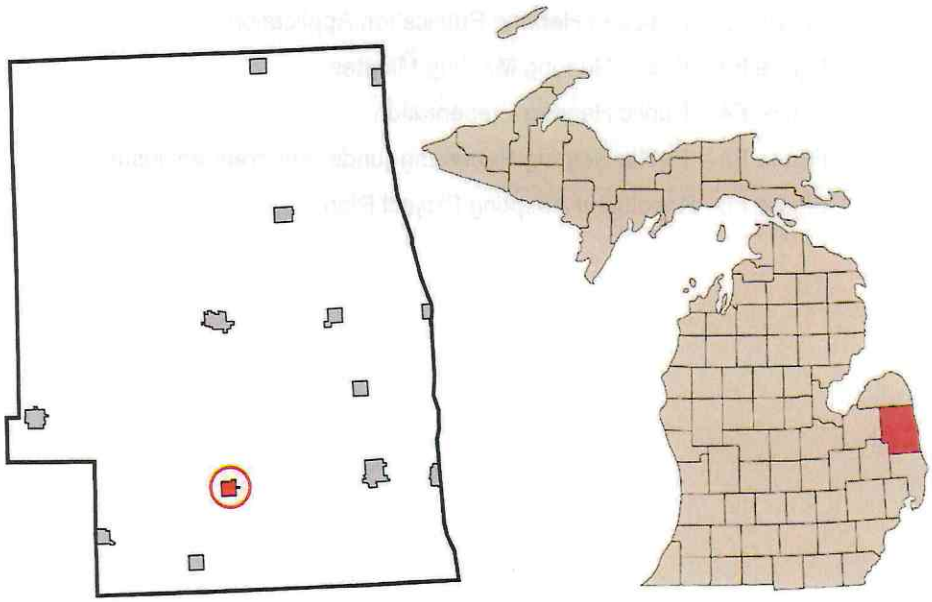
The project plan also presents projected user costs for financing the selected alternative and a review of the public participation and public comments solicited by the Village on the selected alternative.

The format of the report follows the January 2023 project planning guidelines for Drinking Water Revolving Fund Projects issued by the Michigan Department of Environmental Quality (MDEQ), now referred to as the Michigan Department of Environment, Great Lakes, and Energy (EGLE).

1.0 PROJECT BACKGROUND

1.1 DELINEATION OF SERVICE AREA

The study and service area includes the entire village of Peck, Sanilac County, as highlighted in red below:



The service area consists of water system components including water mains ranging from 4 to 8 inches in diameter, three municipal wells, 50 fire hydrants, and a water storage tower. The Village of Peck water distribution system serves customers throughout the Village limits.

1.2 Land Use

The Zoning Map of the Village's 2019 Master Plan (included in Appendix B Figure B3) shows existing land uses in the Village. Figure B4(Village of Peck Future Land Use Plan) in the Appendix shows expected future uses. As shown in these maps, the Village water distribution system service area primarily includes residential land but also includes commercial, industrial, and agricultural land.

1.3 Population Projections

As of the 2020 U.S. Census, the Village of Peck has a population of 603, down from a population of 632 as of the 2010 U.S. Census. The Village population decreased at an average annual rate of 0.5% between 2010 and 2020. In the WRS, for planning purposes, the population increase rate for the water system service area was given a conservate estimate of 0.30%. Based on this rate, the 2024 service area population was projected at 610, and its 2044 population was projected at 648.

1.4 Water Demand and Existing Facilities

Condition of Source Facilities

The Village of Peck sources it's drinking water from three water source wells located within the Village limits. Well #5 is located in the public park at 5520 South Peck St. Well #6 is located adjacent to the water storage tower at 5460 North Peck St. Well #7 is at the public park located west of Peck St between Lapeer St and W Lorraine St, and at 222 E Peck Rd east of the Dollar General. The three well pumps have a combined rated capacity of 1010 gallons per minute (GPM) and a firm capacity of 360 GPM.

Water Treatment Methods

The Village of Peck drinking water treatment is performed via chlorination applied at the three water source wells. Chlorine residuals are monitored to ensure efficient treatment of drinking water.

Existing Storage Facilities

The Village of Peck owns and operates a 100,000 gallon water storage tower located at the intersection of W Rebecca St and Peck St in the Village of Peck. The tower is bolted steel construction and was erected in 1984.

Condition of Service Lines

The Village of Peck includes a total of 277 service lines. There are no known lead or galvanized service lines in the water distribution system. The distribution system and all service lines were installed in 1983 and 1984.

Existing Distribution and Transmission System

The Village of Peck water distribution system includes approximately 5.84 miles of water mains. The existing water distribution system was constructed in 1983 and 1984 and includes ductile iron, asbestos cement, and C900 PVC watermain ranging from 4" diameter to 8" diameter.

Condition of Water Meters

The Village drinking water distribution system includes 277 water meters ranging from 5/8" to 2" in size. Meters are maintained and replaced as needed. 250 of the water meters are either 5/8" or 3/4" in size. The rest of the water meters consist of eighteen 1" meters, four 1.5" meters, and five 2" meters.

Operation and Maintenance

All water supply wells are monitored daily to track water pumped, electricity usage, and chlorine use to treat pumped water. Pumps are run one at a time alternating which pump is active on each day with additional pumps being brought online during times of high demand.

Design Capacity of Existing Waterworks System

From March of 2023 to February of 2024 the Village of Peck pumped on average 33,600 gallons of water per day. The highest average demand was in July with 38,000 gallons of water per day and the lowest was in December at 30,700 gallons per day.

1.5 Summary of Project Needs

The proposed project consists of:

- Replacement of 1500 feet of undersized watermain with 8" watermain
- Watermain looping in 3 locations within the system. By adding these loops, water reliability and water quality will be improved
- Extend existing watermain to Village limits to serve customers that are currently being served by on site drinking water wells
- Installation of a mixing system to the existing water storage tower
- Construction of a new well house, installation of generator backup and updated SCADA controls for existing well house

Compliance with Drinking Water Standards

The service area for the DWSRF Project Plan includes the entire Village. The service area is defined as that portion of the Village which has a water distribution system. The Peck water supply system serves a population of 603 people.

Based on past source supply sampling/monitoring, there has been no known acute or non-acute violations of the Maximum Contaminant Levels (MCL) within Peck. The Village has never been cited with any court or enforcement order such as a Notice of Violation, Consent Agreement, or EGLE or Department order to correct deficiencies for compliance with Michigan's Safe Drinking Water Act.

Orders / Enforcement Actions

There are no orders or enforcement actions in place.

Drinking Water Quality

The Village water supply comes from 3 groundwater wells.

The annual Water Quality Report for the Village public water system for 2022 is included in Appendix G. As shown in the annual report, the Village met or exceeded all State and Federal drinking water standards.

1.6 Projected Future Needs

The Village of Peck has developed and continually updates a CIP detailing projects to be performed. The Village of Peck 2023 CIP can be found in Appendix E.

2.0 Analysis of Alternatives

The EGLE Project Plan preparation guidance document requires that the alternatives evaluation process examine the objectives of the project, including the needs, technical constraints and applicable drinking water standard requirements to be met. The widest variety of potential alternatives for both the entire system and the various functional subsystems must be identified, evaluated, and screened. All the alternatives evaluated must serve the same service area population with demonstrated drinking water

needs. In-depth analysis will only be performed for the principal alternatives. The in-depth analysis will be based on a cost-effective analysis, potential environmental impacts, implement ability, and technical issues.

The following alternatives were considered for the Village DWSRF Project and service area:

2.1 Alternative 1 - No Action

The no action alternative consists of no improvement being performed to the Village water treatment, distribution, and source facilities.

The no action alternative would not replace aging and undersized water mains, which does not comply with the current edition of the Recommended Standards for Water Works, increases the risk of more frequent water main breaks, water loss, and reduced water quality. Looping would not be added existing dead end water main lines causing reduced water quality and pressure.

Taking no action will reduce the upfront capital costs but will not address the system needs over the next 20 years. Aging, undersized, and corroding mains and fittings are causing water loss and water quality issues. Replacement of deteriorating facilities is the only way to address the project objectives. The No Action Alternative will not be considered further.

2.2 Alternative 2 - Optimize Performance of the Existing Facilities

This alternative would consist of optimizing the performance of existing facilities through operational changes, addition of equipment, or additional training of operating personnel.

The Village regularly inspects and maintains the water distribution system to identify and fix leaks. This helps reduce water loss and improve water efficiency.

The Village provides water demand management strategies to help reduce water consumption including promoting water-saving practices.

The Village is in the process of developing a Wellhead Source Protection Plan to avoid pollution and contamination around the existing municipal wells.

The Village is proceeding with infrastructure upgrades and replacement of aging water lines which is noted in Alternative 4. These upgrades reduce energy consumption and minimizes water loss.

The Village has already implemented optimization strategies to maximize the performance of existing facilities. The issues present in the Village of Peck drinking water system which the Project Plan seeks to remedy cannot be addressed by optimizing usage of existing facilities. There is no viable alternative for remediating aging and deteriorating distribution water mains which suffer from excessive corrosion and water loss other than replacing the existing facilities. This alternative does not accomplish the project objectives. The Optimize Performance of the Existing Facilities Alternative will not be considered further.

2.3 Alternative 3 - Regionalization

The Regionalization Alternative would consist of sourcing drinking water from a regional water authority who would provide treated drinking water to the community or partnering with another community who already has a drinking water system and the ability to provide treated drinking water to the Village of Peck.

The nearest community water systems to the Village of Peck are the City of Croswell or the City of Sandusky, located approximately 9 miles to the east or 11 miles to the north of Peck respectively. In order to regionalize the drinking water supply for the Village of Peck with the City of Croswell, additional infrastructure would need to be constructed. Required additional facilities would include transmission main and pumping stations to transport water between the two communities at an additional estimated

cost of approximately $20,000,000. The distance between the communities would require additional delays in travel time for responding to emergencies or water main breaks. Additional maintenance costs would also be incurred to maintain the transmission main between the communities. If a break were to occur in the transmission main between communities, there would be no redundancy to maintain drinking water access to the residents of Peck. These concerns could lead to reduced system reliability and increased downtime in the event of water main breaks and overall increased maintenance costs. Additionally, the existing distribution water mains which are aging and experiencing high rates of water loss would still be in need of replacement.

The Regionalization Alternative would not address the identified issues with the Peck drinking water distribution system or the objectives of the project plan. Regionalization would also increase the user rate to an excessive cost compared to surrounding areas and will not be considered further.

2.4 Alternative 4 – Water Distribution System Improvements

This alternative would consist of installation of approximately 4800 feet of 8" watermain. The following improvements would be performed:

- Existing 4" watermain from Barbara St north to the Village limits would be replaced with 8" watermain
- Existing 4" watermain on Brockway St would be replaced with 8" watermain
- 8" watermain would be installed from Lapeer Rd North to Reynolds Dr to create a loop
- 8" watermain would be installed on Clark St between Hillview Dr and Lord St to create a loop
- Existing 8" watermain would be extended along Lapeer Rd east to the Village limit
- 8" watermain on Brockway Rd would be extended south to the Village limit

This would replaced undersized and deteriorating watermains that are contributing to high levels of water loss, add looping to the existing water distribution system, and extend drinking water availability to the Village limits on the east and south side of the village. These improvements would increase the distribution system reliability and water quality.

2.5 Storage Tank Improvements

The project plan proposes to install a mixing system for the existing Village Water Storage Tower. A mixing system will provide the following benefits:

- Prevent Stratification - Stratification occurs when the water at different depths in the tank has different temperatures and chemical compositions. Mixing the water helps to maintain a more uniform temperature and chemical distribution throughout the tank, reducing the risk of water quality issues. By preventing stratification and maintaining consistent water quality throughout the tank, the overall quality of the water stored in the tank will be improved. This will result in better tasting and smelling water, as well as a reduction in disinfection by-products and bacterial growth.
- Prevent Nitrification – Nitrification occurs when nitrifying bacteria convert ammonia in the water to nitrate, leading to an increase in nitrate levels. The proposed water tower mixing system will reduce nitrification by maintaining consistent oxygen levels throughout the tank, which can inhibit the growth of nitrifying bacteria.
- Reduce THM Formation - Trihalomethanes (THMs) are disinfection by-products that can form in water with high levels of organic matter and chlorine. By preventing stratification and maintaining consistent disinfectant levels throughout the tank, the proposed mixing system will reduce THM formation and improve water quality.
- Increased Disinfection Residuals - Proper mixing of the water in the storage tank will maintain even distribution through the water tank of disinfectants, such as chlorine. This will maintain a consistent disinfectant residual, which is essential for controlling microbial growth and ensuring the safety of the water supply.

- Energy Savings - In addition to improving water quality, the proposed water tower mixing system will also contribute to energy savings. By reducing the need for excessive chlorination and disinfection, as well as minimizing the formation of disinfection by-products, the mixing system will improve the efficiency of energy and chemicals in the water treatment process.

The cost of a mixing system for the water storage tower is significantly less than other methods of addressing the above issues. No alternatives to installation of a mixing system will be analyzed.

2.6 Water Supply Improvements

Improvements to the existing water supply wells would include construction of a new well house for the existing water supply well located at the public park on Peck St between Lapeer St and W Lorraine St. Repairs would also be performed including reroofing the existing well house at 222 E Lapeer Rd. Generator back up and updated controls would be installed to improve system reliability in the event of power loss.

2.7 Water Main Construction Method Alternatives

The Village has two water main construction method alternatives to evaluate for water main and service line replacements.

Alternative #1: Open Cut

The open-cut trench method involves excavating a trench down to the appropriate line and grade and placing the pipe. The trench is then backfilled with appropriate material, and a paving course is placed on the surface.

Alternative #2: Directional Drilling

Directional drilling (commonly referred to simply as *drilling*) is the process of using a small, steer-able steel pipe that is guided under the soil to create a pilot hole. The pipe is guided by above-grade monitoring equipment that tracks the depth and location. Once the guided head reaches its location, the host pipe is attached and pulled back through the pilot hole.

2.8 Delivery Methods

The Village has reviewed various methods for delivering the construction of their project. EGLE has published the State Revolving Fund and Drinking Water Revolving Fund Project Delivery Methods Guidance Document in March 2015. The various delivery methods allowed include Design Bid Build (DBB), Construction Management at Risk (CMAR), Fixed-Price Design-Build (FPDB), and Progressive Design-Build (PDB).

The Village has reviewed all four methods. Summarized comparisons of these methods are outlined below.

Design-Bid-Build (DBB)

Many public infrastructure projects are delivered using the DBB method. In the DBB method, an engineer works closely with the Village and prepares the project bidding documents, including the construction drawings and specifications.

General contractors submit bids based on the plans and specifications, and the lowest, responsible bidder is awarded the project. The general contractor pricing includes their subcontractors, or trade contractors, to perform specialized work such as electrical/controls, mechanical work, concrete work, etc. Typically, the engineering firm that developed the design provides construction observation and construction administration services during the construction phase. In this alternative, there are three parties: the Owner, the engineer, and the general contractor.

The DBB method offers the following advantages:

- Well understood and accepted.
- Independent oversight of Builder.
- Open to Owner involvement during design.

On the other hand, the DBB method has the following disadvantages:

- Pricing is not known until the design process is complete.
- Contractor selected based on low bid not on value, knowledge, and experience brought to the team.

Construction Management At-Risk (CMAR)

CMAR is similar to DBB in that the engineering/design contract is separate from the construction contract. However, in the CMAR method, a construction management firm (CM) is hired independently by the Village before or early on in the design process. An engineer works closely with the Village and the CM during the entire design process. The CM provides input to the engineer and Owner through the entire design process. The engineer prepares the construction drawings and specifications while the CM prepares the bidding documents and obtains pricing from their subcontractors and suppliers.

The CM develops a Guaranteed Maximum Price (GMP). In this alternative, there are three parties: the Owner, the engineer, and the independently contracted CM firm.

The CMAR method offers the following advantages:

- Open to Owner involvement during design.
- Early integration of Builder.
- Provides early and continuous constructability review.
- Provides early certainty of costs.
- Pricing and design may be conducted in parallel.
- Reduced likelihood of claims compared to the DBB alternative.
- Project can be ready for construction quickly.

On the other hand, the CMAR method has the following disadvantages:

- Not a single source of responsibility.
- No legal obligation linking Designer to Builder.
- Potential for disputes, claims and change orders.

Fixed Price Design Build (FPDB)

FPDB is a delivery method where the Owner designates one firm, a design-builder (DB), under one contract for the design and construction of the project. The DB provides a fixed price based on a defined scope, requirements, and schedule but before complete preparation of detailed design documents.

Owner involvement during the design process is typically very limited after the fixed price is accepted. The "book is closed" on pricing around the 30% mark of the design process.

This Village is increasing rates dramatically for this project and has indicated they want to be heavily involved in the design process to provide direction on design options to reduce overall cost. They will be involved throughout the entire design and construction process. Therefore, FPDB was not considered further for this project.

Progressive Design Build (PDB)

The PDB delivery method is similar to the CMAR method but with one major distinction – the design-builder (DB) is under one contract for design and construction of the project. Therefore, the Village has

one single firm responsible for the design, schedule, construction, and warrantee of the project. If issues arise during or after construction, the Village only has one entity it would need to address them with.

During the latter part of the design phase, the DB prepares the bidding documents and obtains pricing from its subcontractors and suppliers on an open-book basis.

If an agreement is reached on the pricing, the Village will move forward collaboratively to construction. With such flexibility, the PDB method allows the Owner to improve the project outcome by participating directly in design decisions. In this alternative, there are two parties: the Owner and the DB firm.

The PBD delivery method offers the following advantages:

- The Owner can transfer more risk to the DB, since there is a single point of responsibility for the design, permitting, construction, and performance warrantee of the project.
- Owner is involved during the entire design and construction.
- Early integration of Builder.
- Provides early and continuous constructability review.
- Provides early certainty of costs.
- Pricing and design may be conducted in parallel.
- Project can be ready for construction quickly.

3.0 Principal Alternatives

The principal alternatives to be evaluated address the improvement needs of the system through the construction of new assets or the replacement of existing assets. As presented above, the no action, optimization, and regionalization alternatives are not considered reasonable as they do not fully address the needs of the system and objectives of the project. To address the critical needs of the water system, principal alternatives for replacement and new construction will need to be evaluated.

3.1 Monetary Evaluation

A monetary evaluation includes a present worth analysis. This analysis does not identify the source of funds but compares cost uniformly for each alternative over the 20-year planning period. The present worth is the sum which, if invested now at a given interest rate, would provide the equivalent amount of funding required to pay all present and future costs. The total present worth, used to compare the principal alternatives, is the sum of the initial capital cost, plus the present worth of operation, maintenance, and replacement (OM&R) costs, minus the present worth of the salvage value at the end of the 20-year planning period. The discount rate used in computing the present worth cost is established by EGLE and has not yet been set for FY2024 SRF Projects. The discount rate of 2.5%, obtained from OMB Circular No. A-94 per SRF guidance, was used for the financial calculations.

The salvage value is calculated at the end of 20 years where portions of the project structures or equipment may have a salvage value, which is determined by using a straight-line depreciation. The present worth of the 20-year salvage value is then computed using the discount rate of 2.5%. The EGLE guidance document establishes the estimated life for the project structures and equipment to assess salvage values at the 20-year planning period.

The cost of labor, equipment and materials is not escalated over the 20-year life since it assumes any increase in these costs will apply equally to all alternatives. Energy prices, however, are escalated at a uniform rate of 3% per year over the 20-year planning period with O&M costs.

Since the total estimated construction costs are similar between the principal alternatives, the interest charge during construction (capitalized interest) would not influence the comparison of alternatives and was not included in the cost-effective analysis.

To ensure uniformity of the cost comparisons, the EGLE guidance indicates that the following cost comparison details should be specifically addressed and were applied in the present worth analysis:

- Capital costs were included for all identified improvements.
- Sunk costs were excluded from the present worth cost. Sunk costs for the project include existing land, existing waterworks facilities, and outstanding bond indebtedness.
- Operations, maintenance, and replacement, (OM&R) costs were included in the present worth cost.
- The economic comparison is based on a 20-year period and a discount interest rate of -0.5%
- Salvage values were included in the present worth cost.
- Escalation of energy values was applicable to the principal alternatives, but the cost differences between alternatives were limited.
- Land purchase/acquisition costs were not applicable to the principal alternatives.
- Mitigation costs are included in the project costs, which was included in the present worth cost.
- Total existing and projected user costs for the project are presented.
- Appropriate planning period of 20 years was used in accordance with EGLE guidance.
- Equivalent alternatives were compared, where no principal alternative was substantially more effective in terms of population served, design life of facilities and level of service provided.

Life Cycle Cost Analysis

Operation, Maintenance, and Replacement budgets were estimated for each alternative and a present worth analysis was completed. The present worth analysis is summarized in the Table below and included in Appendix A.

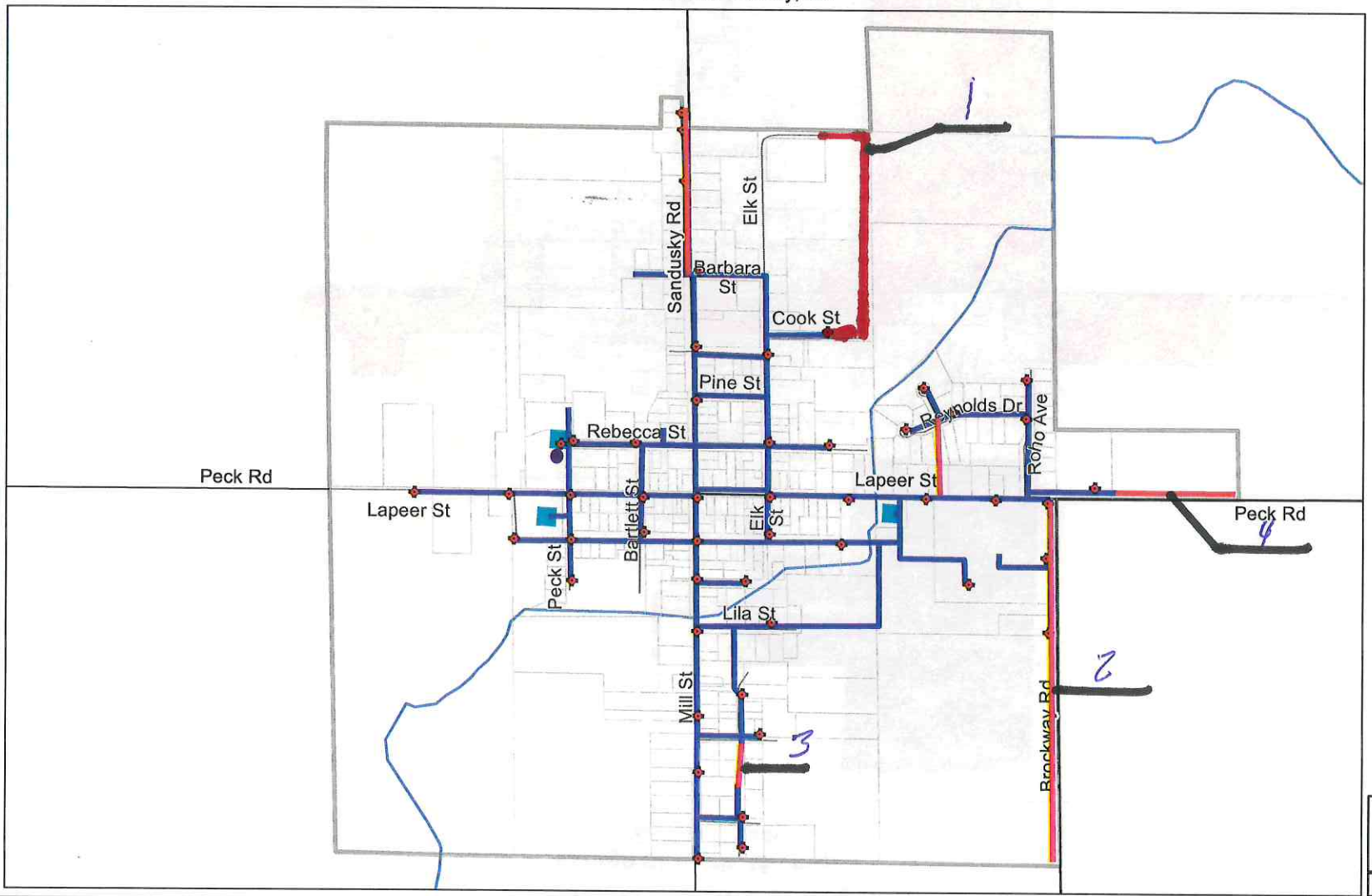
Present Worth Analysis Summary				
	Alternative 1: No Action	**Alternative 2: Optimize Existing Facilities**	**Alternative 3: Regionalization**	**Alternative 4: Water System Improvements**
Capital Cost	$0	$0	$20,000,000	$3,600,000
Annual OM&R Cost	$279,897	$279,897	$279,897	$279,897
Net Present Value of 20-year OM&R Costs	$4,363,000	$4,363,000	$4,363,000	$4,363,000
Future 20-year Salvage value	$0	$0	$10,000,000	$1,396,000
Net Present Worth	$4,363,000	$4,363,000	$18,260,000	$7,111,000

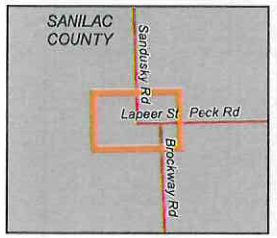
3.2 Environmental Impacts

An analysis of the potential environmental and public health impacts of the principal alternatives is also an important part of the Project Plan analysis.

The following aspects of the environmental setting along with appropriate narrative discussion and maps are presented as follows:

MAP 5 - WATER MAINS
VILLAGE OF PECK, MICHIGAN
Sanilac County, MI





AREA MAP
NOT TO SCALE

LEGEND

- Hydrants
- Water Mains
- Wells
- Natural Water
- Water Storage Tower
- Proposed Watermain Construction

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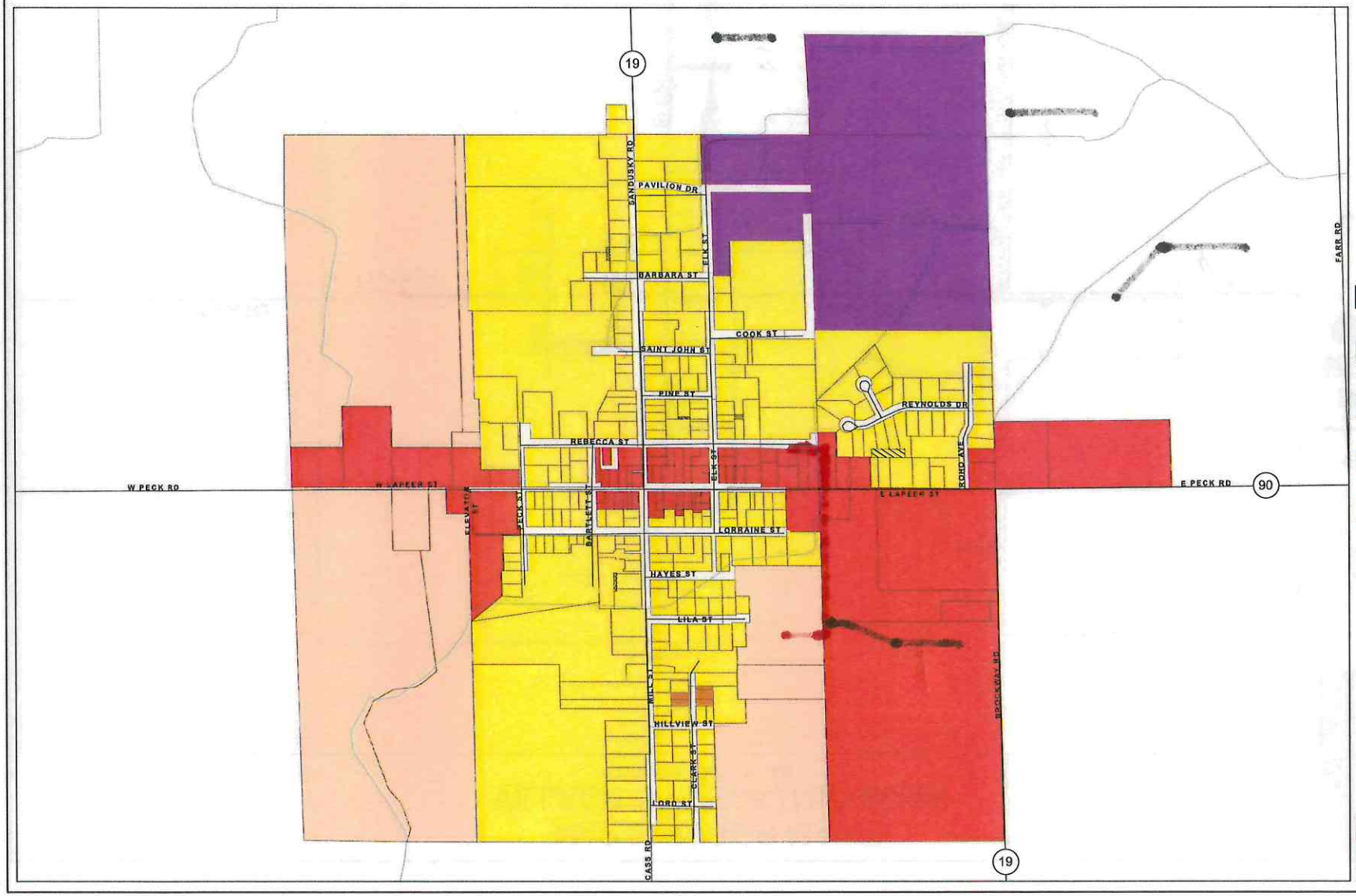
230 S Washington Ave
Saginaw, MI 48607
Tel. 989-754-4717
www.spicergroup.com

Date October 2018

Village of Peck Zoning Map

Village of Peck, Michigan

Sanilac County



N

0 0.02 0.04 0.09 0.14 0.19 Miles

LEGEND

- **R** - Residential District
- **A-R** - Agricultural Residential District
- **MHS** - Manufactured Home Subdivision
- **C** - Commercial District
- **I** - Industrial District
- Unclaimed Property

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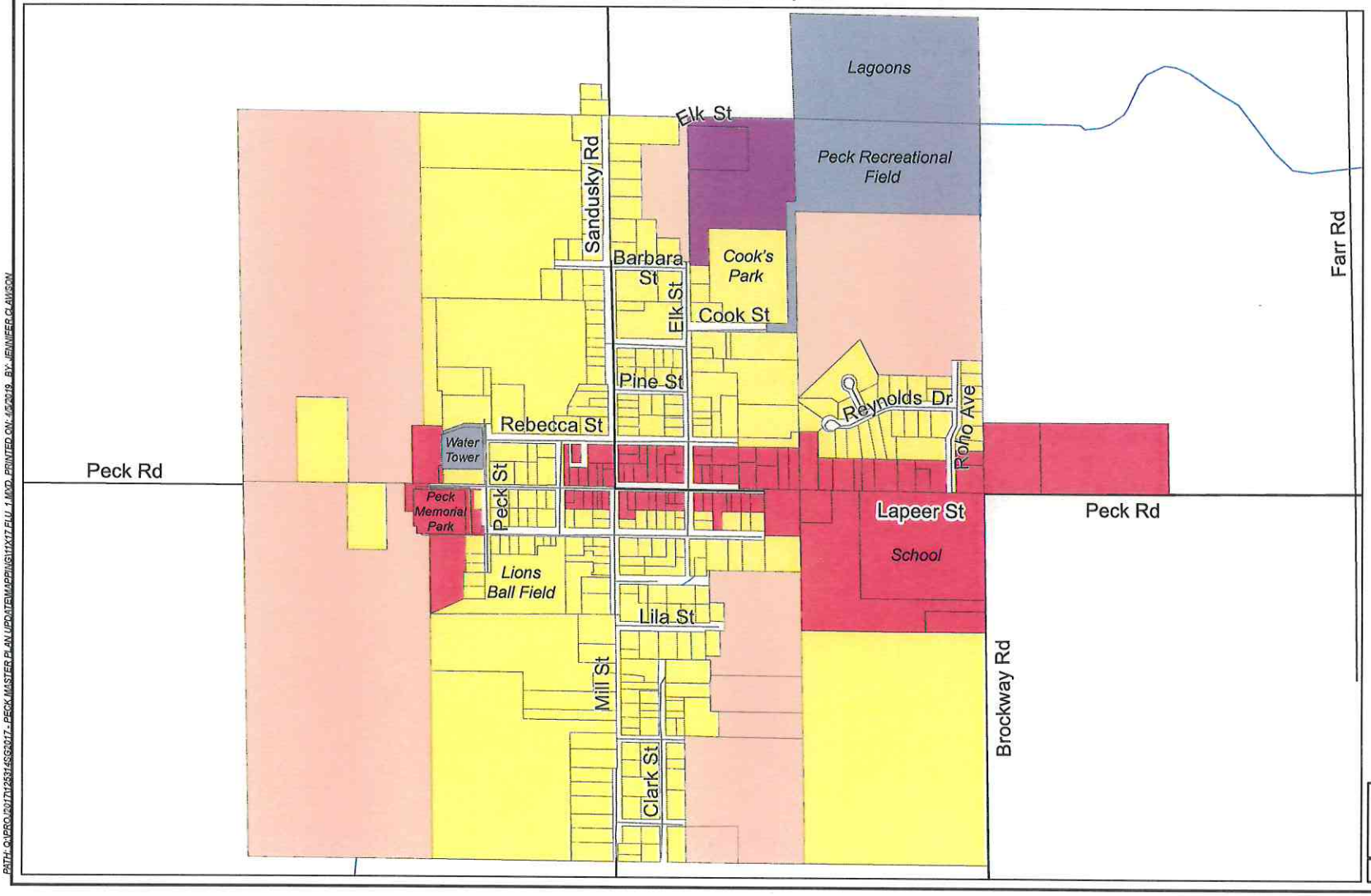
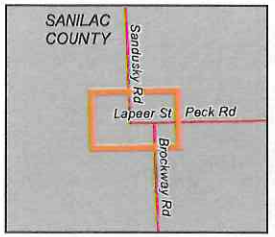
SAGINAW OFFICE
230 S Washington Ave
Saginaw, MI 48607
Tel: 989-754-4717
www.spicergroup.com

DATE: April 2023

*

MAP 10 -FUTURE LAND USE
VILLAGE OF PECK, MICHIGAN
Sanilac County, MI





AREA MAP
NOT TO SCALE

LEGEND

- Agricultural Residential
- Residential
- Commercial
- Industrial
- Village

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SAGINAW OFFICE
230 S Washington Ave
Saginaw, MI 48607
Tel. 989-754-4717
www.spicergroup.com

Date April 2019