

DRINKING WATER REVOLVING FUND
PROJECT PLAN FOR WATER SERVICE REPLACEAMENT PROJECT
NEWBERRY, MICHIGAN
May, 2023

DRAFT REVIEW ISSUE, FINAL DRAFT DUE JUNE 1ST, 2023

UP Engineers & Architects
424 South Pine Street
Ishpeming, MI 49849
Project No: N24 - 01628

PROJECT BACKGROUND

Delineation of Study Area

The study area includes the entire Village of Newberry Water System. The Village is supplied by three different wells located around the village.

The Newberry Water System has one 100,000 gallon storage tank which is shown on the system map, included in Appendix A to this report, and discussed further in the existing facilities section of this project plan.

Appendix B, Figure 1 shows a delineation of the project location within the Village of Newberry.

Land Use in Study Area

The current land use for the Village of Newberry is shown in the land use map included in Appendix C to this report.

The existing land within the proposed project area is zoned as central business district, community commercial, industrial, and residential.

POPULATION DATA

Population data for Newberry is in the tables below:

Table 1. Village of Newberry - Historic Population

Name	1970	1980	1990	2000	2010	2020
Village of Newberry	2,334	2,112	1,837	2,086	1,519	1,280

Table 2. Village of Newberry - Projected Population

	Existing Population	+5 years	+10 years	+20 years
Village of Newberry	1,280	1,280	1,280	1,280

Historical population data and projections for the Village were obtained from the U.S. Census Bureau.

The Village of Newberry has seen little population change over time. There is no reason to think there will be any significant population changes in the service area. Newberry's water demand will likely not change significantly over time either.

WATER DEMAND

The Newberry system services one industrial user and a few large commercial users, but the system services mostly residential users. With little projected population growth there is no reason to believe that there will be an increase in water demand.

EXISTING FACILITIES

The Village's water system was originally constructed in 1913 with major upgrades around 2015.

A. *The condition of source facilities (e.g., wells, intakes, cribs, etc.).*

Water is supplied to Newberry by three wells. Well house #4 is located northeast of the Wisconsin Central railroad tracks in a concrete masonry well house. The well is operated by a 50 HP pump. The pump motor was replaced in 2004 leaving the well house in good working condition. Wells #6 and #7 are located southwest of the village and were installed in 2004. The wells are located outside of a well house with the controls inside. Both wells are operated by 75 HP motors and both wells are in excellent working condition. Wells #1, 2, 3, and 5 are no longer in use and are disconnected from the system.

B. *The method of water treatment, as well as the location and physical condition of facilities, including years in service of major components.*

The Village of Newberry currently treats the water with chlorine at the well houses.

C. *An evaluation of storage tank and pump station capacities, including the adequacy and reliability of pump stations in maintaining system integrity.*

The System has one 100,000 gallon elevated steel storage tank. The tank is located by the village offices and garage off of Harrie Street. The tank was constructed in 1937 and has undergone maintenance on the interior and exterior most recently in 2012. The tank is undersized. Newberry's average daily usage is 250,000 gallons and the system should be able to store equal to one day's use of water. There are no pump stations in use by the system.

D. *The condition of service lines.*

Newberry has many old watermains that likely supply water to customers through galvanized or what is considered to be lead service lines. Galvanized services are not approved by EGLE and will have to be replaced where they are present. Some of the newer water services are copper or PVC, but the number of these services is unknown. Based on available field records from previous construction projects, many services are currently galvanized from the curb stop into private property, which will require replacement with this project.

E. *The type of conveyance system and the condition of any existing transmission and distribution mains.*

The Newberry water system was originally constructed between 1913 and 1930 and most of the pipe installed was sand cast iron pipe with leaded joints. The system currently is comprised of 76,887 feet of watermain. A lot of this pipe has been upgraded since then, but some of it is still

the original sandcast iron and some of it is undersized. There is a high presence of iron bacteria in these old mains that due to the sand cast pipes not having a cement lining. This makes the old, deteriorated watermain is susceptible to breaks, leaky joints, and provide an environment for undesirable iron bacteria growth. The old main in the system experiences a large amount of leakage

F. **The method of residuals handling and disposal, if applicable.**

Not Applicable

G. **The Condition of Water Meters**

The Village meters all users in the system and the meters are in working condition.

H. **A discussion of operation and maintenance including any problems, as well as an evaluation of opportunities to maximize operation and maintenance to improve drinking water quality.**

The Newberry water system currently has a high presence of iron bacteria. This is caused by old sandcast iron pipe materials in the system and also inadequate flushing velocities. The original well source resulting in iron bacteria has been eliminated from operation, however bacteria within the system continues to be a nuisance. Also, the system experiences a large amount of leakage. Replacing the existing distribution system with new ductile iron watermain would improve these issues by removing the old and undersized mains. This would reduce leakage, limit areas where iron bacteria can grow, and would include replacing inoperable gate valves and hydrants. Increasing the main size and replacing inoperable valves and hydrants would help the village adequately flush the main during maintenance of the system.

I. **The design capacity of the waterworks system and existing uses of available capacity.**

Currently the three wells in operation have a combined permitted capacity of 1910 gpm. Well #4 has a capacity of 850 gpm, well #6 has a capacity of 360 gpm and the final well, well #7 has a capacity of 700 gpm. The Village currently uses about 250,000 gallons of water per day.

J. **Evaluation of the System's climate Resiliency**

The new sections of the water system have watermain with 7' depth of bury with water services that meet the same depth of bury. In the sections of the system with older watermain the water service depths are anywhere from 6.5' to 4' from the surface. These shallower water services are more susceptible to freezing during the winter months than the newer services. The water system has backup power to operate critical circuits in the event of a power failure.

Summary of Project Need

The Village of Newberry has many water services that are thought to be galvanized or lead materials and are not in compliance with EGLE and EPA standards. Cast Iron mains are in need of replacement due to leakage, resiliency, and iron bacteria. The existing water tank constructed in 1937 is significantly undersized based on current demand and due to its age has become a need for consistent rehabilitation.

Compliance with the drinking water standards defined in the Administrative Rules for Act 399.

- A. Any acute violations of a Maximum Contaminant Level or surface water treatment technique.
None
- B. Any non-acute violations of a Maximum Contaminant Level or surface water treatment technique.
None
- C. An evaluation of the existing treatment facility as conducted and/or reviewed by EGLE or other appropriate regulatory agency. The evaluation should compare the existing treatment facility to the requirements of Act 399.
None
- D. A description of any waterborne disease outbreaks, their magnitude, and their apparent causes.
None
- E. A Reliability Study/ Master Plan which substantiates water supply needs and outlines deficiencies that warrant correction.
Revisions to the regulations in regards to lead/galvanized service lines has mandated the removal and replacement of services lines encountered during the water main removal and replacement project.

Orders or Enforcement Actions

Please provide a copy of any court or enforcement order against the water supplier, including written enforcement actions, such as a Notice of Violation, Consent Agreement, or Department Order to correct deficiencies and achieve compliance with Act 399.

No official documentation from the EGLE in regards to these items.

Drinking Water Quality Problems

- A. Drinking water quality problems being experienced by the water supplier should be identified. The aesthetic quality of the drinking water supply should also be discussed.

The system has high amounts of iron bacteria in areas where there are old, sandcast iron watermain. The water system also contains many galvanized or lead water services that are not approved for use by EGLE. The Village also has undersized watermain with old inoperable gate valves in need of removal and replacement.
- B. Where the community is proposing to provide new service to areas currently served by individual wells, the project plan must document the nature, number and location of wells that are malfunctioning based on the DEQ, and/or local health department records, and/or sanitary surveys. The site characteristics (e.g., groundwater levels, soil permeability, geology) contributing to the problems must be documented. The system failures and limiting site characteristics must be plotted on a map along with existing habitation.

No proposed expansion of water main into new areas to serve customers that currently operate private wells.

- C. Where surface water or groundwater contamination is of concern, point and nonpoint sources of pollution should be examined. For groundwater contamination, aquifer condition and type should be identified. Where surface water contamination is of concern, describe and evaluate the impact of these problems on the quality of drinking water.

PROJECTED NEED FOR THE NEXT 20 YEARS

The proposed project will address a significant portion of the projected 20-year capital improvements. Work associated with the lead/copper rules requirements will be added to the Capital Improvements Plan once the Final DSMI Report is completed and we have an accurate projection on the financial burden this will place on the water system. The proposed Removal and Replacement Project will replace the remaining cast iron water main in the system, bringing the entire distribution system up to standards.

EXPLORATORY WELL INVESTIGATIONS/WELL SITE SELECTION/TEST WELL DRILLING PROCEDURES

Not Applicable

ANALYSIS OF ALTERNATIVES

Identification of Potential Alternatives

Alternative #2 - No-Action

No-Action is not an acceptable due to EGLE regulatory requirements associated with the current Lead and Copper Rules. Village of Newberry is legally required to remove and replace lead/galvanized water services in conjunction with water main removal and replacement projects, and based on final DSMI reporting. Resiliency in older sections of water main will continue to depreciate, and these cast iron mains provide sources for iron bacteria to thrive. With the storage tank undersized, the Village will continue with a low reliability to provide adequate pressures during high demand events.

Alternative #1 - Replacement of Old Deficient Service Lines and Mains – Open cut method, and Replacement of the water storage tank.

This recommended proposed alternative, as outline in the project plan, includes the placement of new type K copper water services where lead or galvanized services are present, replacement of existing cast iron water main with cement lined ductile iron, and construction of a new storage tank.

Alternative #3 – Directional Bore Installation of water main and services, Replacement of water storage tank.

The approximate length of water services installation is around 50'. Three locations along the water service will need to be dug up, at the house, at the curb stop, and at the water main. This will essentially result in a near full exposure of the service line, thus making the mobilization and installation cost increase associated with directional boring cost prohibitive. In-addition, piping materials for directional boring such as HDPE are less desirable than DIP for climate resiliency.

Optimum Performance of Existing Facilities

The optimal performance of the Village of Newberry water system would require upgrades outlined in the proposed project plan. By performing the upgrades outlined in this plan, the reliability and performance of the system will be increased. To continue to strive towards optimum performance of the system, the Village will continue to pursue funding options for all of the items outlined in the 20-year improvements plan.

Regional Alternatives

The Village of Newberry currently sells water to some customers in McMillan Twn. The proposed project of lead/galvanized service line removal and replacement is not impacted by the possibility of regionalization.

ANALYSIS OF PRINCIPLE ALTERNATIVES

There are no principle alternatives since lead/galvanized water service removal and replacement is legally mandated by EGLE during water main removal and replacement projects.

The recommended option is the replacement of deficient service lines where they are discovered within the upcoming watermain replacement project areas.

The Engineer's Opinion of Cost is:

Village of Newberry DWRP Water Project					
Item #	Description	Quantity	Units	Unit Price	Total
W1	Mobilization	1	LS	\$150,000	\$150,000
W2	Watermain Removal and Replacement	5000	LFT	\$120	\$600,000
W3	LSLR	300	EA	\$15,000	\$4,500,000
W4	HMA Restoration	5000	SYD	\$50	\$250,000
W5	DWAM & DSMI Work	1	LS	\$500,000	\$500,000
W6	Well Improvements	1	LS	\$150,000	\$150,000
W7	Water Tank Improvements	1	LS	\$1,000,000	\$1,000,000
W8	Grass Restoration	15000	SYD	\$7	\$105,000
W9	Misc	1	LS	\$245,000	\$245,000
	Construction Subtotal				\$7,500,000.00
	DWAM & DSMI Work				\$500,000
	Engineering (13% of Construction Subtotal)				\$950,000.00
	Contingency (20% of Construction Subtotal)				\$1,500,000.00
	Administration				\$50,000.00
	Project Total Cost Opinion				\$10,500,000.00

Cost Effective Analysis

A. Present Worth – Proposed Lead/Galvanized Water Service Removal and Replacement

- Alternative #2 - No Action - Not Applicable – Required by Lead/Copper Rule Regulations require us to complete this portion of the project
- Alternative #1 - Proposed Project – Open Cut Installation of water main and service line removal and replacement, new water storage tank.

- Alternative #3 – Directional Bore Installation of water main and services – The approximate length of water services installation is around 50'. Three locations along the water service will need to be dug up, at the house, at the curb stop, and at the water main. This will essentially result in a near full exposure of the service line, thus making the mobilization and installation cost increase associated with directional boring cost prohibitive. Directional bore water main will also include excavations at each intersection or valve in addition to service connections, and the Village does not have significantly long runs for replacement therefor there will not be a cost savings realized with direction drilling.

B. Discount Rate

1.2%

C. Salvage Value

Not Applicable. There is no salvage value for buried water services in either option.

D. Escalation

Leakage could increase slightly over time for the deficient water services, but they will need to be replaced in the near future anyway to comply with EGLE and EPA standards.

E. Interest During Construction

Not Applicable

F. CMAR, PDB, or FPDB Delivery Method

Not Applicable

Environmental Evaluation

- Cultural Resources

No anticipated cultural impacts since the project is removing and replacing/repairing existing infrastructure. If it appears that cultural resources are being impacted, work would be immediately ceased, and the State would be contacted.

- The Natural Environment

The environmental impacts of the proposed project are limited due to the locations of the water service improvements. The project will be taking place just outside of Village right-of-way.

Climate

The Village of Newberry is located in the Eastern Upper Peninsula. It has a temperate climate with influence from Lake Superior. Recent extreme winters have played a significant role in the overall impact that weather plays on water system infrastructure within the UP. The winter of 2013 was the worst winter in recent memory with frost depths reaching down to over 9 feet.

Air Quality

N/A – no measurable impact by the proposed project

Coastal Zones

Final project to be reviewed by EGLE during the design phase of the project.

Major Surface Waters

There are no major bodies of water in the village of Newberry.

Wild and Scenic Rivers

According to the “Drinking Water State Revolving Fund Project Plan Preparation Guidance” and the Michigan DNR website, there are no wild and scenic rivers located within the project area.

Floodplains

The proposed project will include no surface improvements beyond the removal and replacement of valve boxes and fire hydrants. Thus the project will have no impact on the floodplain.

Wetlands

The proposed project is not expected to impact any wetlands that are located within the vicinity of the proposed project.

Topography

See Appendix E for study area topographic map.

Geology and Soils

Geology and Soils maps included in Appendix F.

Protected Plants and Animals

None

A permit would be submitted to the EGLE for review during the design phase of the project.

National Natural Landmarks

None

Unique Features

None

MITIGATION

Minor mitigation is expected to handle construction related environmental issues.

Mitigation Short-Term Impacts

Short-term impacts shall be addressed with all necessary construction permits. Soil Erosion and Sedimentation Control permit shall be required to be obtained by the contractor prior to construction. Minor inconveniences will exist for the residential population located within the project area. The

contractor shall be required to accommodate local traffic to the best of their ability during the construction process.

Mitigation Long-Term Impacts

Long-term impacts from the proposed project include increased reliability and water quality to the project area. A Reduction in loss due to leakage will result in reduced water treatment and pumping costs.

Implementability and Public Participation

Public Participation into the selection of an alternative is a key aspect of the Drinking Water Revolving Fund Process. The two possible options, water main replacement and “No-Action” would be provided to the public for review during the public information meeting.

Technical and Other consideration

Alternative #1 – Upgrades to the existing water services, mains, and storage tank

Alternative #2 – “No-Action”

The No-Action alternative would still result in the water services being replaced at a later date.

Residuals

- Industrial/Commercial/Institutional

There is one industrial user and a few other large-scale users on the system.

- Growth Capacity

Not Applicable

Contamination

There are a few locations of known contamination. Along the downtown corridor there are four contamination sites near the northern end of town. There is also one closed, leaking underground storage tank in the western part of town. See Appendix G for contamination map

NEW/INCREASED WATER WITHDRAWALS

No projected new water users or changes in water demand.

SELECTED ALTERNATIVE

Description

The selected alternative is the project outlined in the project plan. The selected alternative includes the removal and replacement of approximately 5,000 feet of water main and 300 lead and galvanized water services using the open cut method. In-addition, a new storage tank is proposed.

Water service and main replacements will take place within the primary project location, shown in blue in the attached project map, any remaining funds will be used as lead or galvanized water services are discovered in the rest of the system, shown in green in the attached project map.

Relevant Design Parameters

- A. **Major process features.**
Water main removal and replacement, storage tank construction, removal and replacement of lead and galvanized water services where they are discovered during upcoming water main removal and replacement project in the Village of Newberry.
- B. **Unit processes and sizes as related to service area needs.**
The the water main removal and replacement project increases the size and the mains necessary to meet EGLE design standards.
- C. **Schematic flow diagram.**
Not Applicable
- D. **Design criteria (e.g., process loading, existing and projected design flows, and other aspects of the preliminary basis of design).** Per 2018 10-States Standards and Michigan EGLE regulations.
- E. **Residuals management such as haul routes, times, and frequencies.**
Haul routes, construction means and methods are to be determined by the contractor. The engineer shall be responsible for oversight to ensure that they follow permit requirements issued by the Luce County Road Commission
- F. **Wells and intakes.**
Not Applicable. No Improvements planned for wells or intakes
- G. **Water distribution system. Provide details including pipe lengths and sizes, street names, and proposed routes.** The route details are not expected to be known at a design level of specificity, but citizens should be able to read the description of the selected alternative and know if major construction is being considered for their street.
See Attached Project Map, Appendix B.
- H. **Pump station types and sizes, including provisions for standby power, telemetry, etc.**
Not Applicable. No Improvements Planned for Pump Stations
- I. **Storage facilities.**
The existing 100,000 storage volume is proposed to be increased to 250,000 gallons at a minimum.

J. Schedule for design and construction.

- July 1 2023: Submitted Project Plan
- October 2023: Receive funding obligation
- October 2023: Begin detailed design engineering process
- January 2023: Part 1 of Application Submitted
- February 2024: Part 2 of Application Submitted
- March 2024: Bid Advertisement
- April 2024: Bid Opening
- June 2024: Loan Closing
- October 2024: Construction complete, project close out

Hydrogeological Analysis

Not Applicable

Finalization of Well Design

Not Applicable

Schedule for Design and Construction

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Engineers Opinion of Cost

Village of Newberry DWRF Water Project					
Item #	Description	Quantity	Units	Unit Price	Total
W1	Mobilization	1	LS	\$150,000	\$150,000
W2	Watermain Removal and Replacement	5000	LFT	\$120	\$600,000
W3	LSLR	300	EA	\$15,000	\$4,500,000
W4	HMA Restoration	5000	SYD	\$50	\$250,000
W5	DWAM & DSMI Work	1	LS	\$500,000	\$500,000
W6	Well Improvements	1	LS	\$150,000	\$150,000
W7	Water Tank Improvements	1	LS	\$1,000,000	\$1,000,000

W8	Grass Restoration	15000	SYD	\$7	\$105,000
W9	Misc	1	LS	\$245,000	\$245,000
	Construction Subtotal				\$7,500,000.00
	DWAM & DSMI Work				\$500,000
	Engineering (13% of Construction Subtotal)				\$950,000.00
	Contingency (20% of Construction Subtotal)				\$1,500,000.00
	Administration				\$50,000.00
	Project Total Cost Opinion				\$10,500,000.00

User Costs

- *Engineers Opinion of Cost*
\$10,500,000
- *Estimated operation and maintenance costs, including replacement of equipment which may be necessary to ensure that the waterworks function properly throughout its useful life.*

See Appendix H for a summary of Water Budget Expenses including O & M costs. 2021 operation and maintenance costs were \$318,461.23

- *Other costs to be incurred by the system users.*
Existing Debt Service Payments (2021 Budget)

Total Debt Service for 2021 was \$367,565.78

- *An analysis of the impacts of the annual user costs for water supply on the system users.*
848 Users consuming a total of 1,030 Residential Equivalent Units. The proposed project impact is calculated using the 30 year, 2.125% DWRP interest rate and term. The annual payment costs associated with this loan amount to \$40.00 per REU per month.
- *A demonstration of the water supplier's ability to repay the incurred debt, including discussion on how the project costs will be financed.*
Debt Service fee shall be increased to pay for the new debt incurred by the proposed project. The debt service fee will increase by \$40.00 per REU per month.

Disadvantaged Community

See Appendix I Disadvantaged Community Worksheet.

Ability to Implemented Selected Alternative

The Village of Newberry is the sole municipality involved in the proposed project plan. A Support Resolution will be adopted by the Board to accept the project. Resolution to be included in Attachment K.

Environmental Evaluation

A. Cultural Resources

No anticipated cultural impacts since the project is removing and replacing/repairing existing infrastructure. If it appears that cultural resources are being impacted, work would be immediately ceased, and the State would be contacted.

B. The Natural Environment

The environmental impacts of the proposed project are limited due to the locations of the water service improvements. The project will be taking place just outside of Township right-of-way.

Climate

The Village of Newberry is located in the Eastern Upper Peninsula. It experiences a temperate climate with influence from Lake Superior. Recent extreme winters have played a significant role in the overall impact that weather plays on water system infrastructure within the UP.

Air Quality

N/A – no measurable impact by the proposed project

Coastal Zones

Final project to be reviewed by EGLE during the design phase of the project.

Major Surface Waters

No major waters nearby.

Wild and Scenic Rivers

According to the “Drinking Water State Revolving Fund Project Plan Preparation Guidance” and the Michigan DNR website, there are no wild and scenic rivers located within the project area.

Floodplains

The proposed project will include no surface improvements beyond the removal and replacement of road surfaces and landscaping. Thus the project will have no impact on the floodplain.

Wetlands

The proposed project is not expected to impact any wetlands that are located within the vicinity of the proposed project.

Topography

See Appendix E for study area topographic map.

Geology and Soils

Geology and Soils maps included in Appendix F.

Protected Plans and Animals

None

A permit would be submitted to the EGLE for review during the design phase of the project.

National Natural Landmarks

None

Unique Features

None

Agricultural Land

No Agricultural land is present in the Village of Newberry.

Social/Economic Impact

Not Applicable

Construction/Operational Impact

The contractor will be responsible to accommodate the needs of the residence within the project area during construction. Once the upgrades are completed, the Township will be able to operate its system with a higher level of reliability.

Indirect Impacts

- A. **Changes in the rate, density, or type of development, including residential, commercial, industrial, and the associated transportation changes.**
There are no anticipated changes to the rate, density, or type of development as this project will only address existing service lines.
- B. **Changes in land use (e.g., open space, floodplains, prime agricultural land, and coastal zones).**
None
- C. **Changes in air or water quality stemming from primary and secondary development.**
Minor impact to air quality during construction due to construction activities. This impact would include necessary dust control measures.
- D. **Changes to the natural setting or sensitive ecosystems, or jeopardy to endangered species resulting from secondary growth.**
None
- E. **Impacts on cultural, human, social, and economic resources.**
None

- F. Resource consumption over the useful life of the facility and the generation of wastes.
None
- G. Aesthetic and other impacts.
There will be surface restoration in areas disturbed by the project.

MITIGATION

Minor mitigation is expected to handle construction related environmental issues.

Mitigation Short-Term Impacts

Short-term impacts shall be addressed with all necessary construction permits. Soil Erosion and Sedimentation Control permit shall be required to be obtained by the contractor prior to construction. Minor inconveniences will exist for the residential population located within the project area. The contractor shall be required to accommodate local traffic to the best of their ability during the construction process.

Mitigation Long-Term Impacts

Long-term impacts from the proposed project include increased reliability and water quality to the project area. Replacing the services with the upcoming watermain project will prevent these areas from being excavated in the future.

PUBLIC PARTICIPATION

Public Meetings on Proposed Alternatives

A public hearing was held to discuss the project plan and the included alternatives.

The Formal Public Hearing

Scheduled to take place in June, 2022 to provide sufficient time to receive and react to public feedback.

Public Hearing Advertisement

A notice of the public hearing must be advertised at least 30 days prior to the hearing in a newspaper of general circulation in the communities affected by the proposed project. A copy of the advertisement and an affidavit confirming its publication must be included in the final project plan. Instructions on where to find copies of the project plan and how to submit written comments about the project must be included in the advertisement. A model public hearing notice is provided in Attachment J.

Public Hearing Transcript or Recording

The final project plan must be accompanied by one of the following:

- A. *A verbatim transcript of the public hearing, recorded by a court reporter or transcribed by a stenographer from a recording of the proceedings (most preferred).*

To be submitted once finalized. Recording used for completion of the application.

- B. *Am audio recording of the public hearing.*

Sent in email submittal

Public Hearing Contents

The following items were read into the record during the public hearing:

1. *A description of the drinking water quality needs and problems to be addressed by the proposed project and the principal alternatives that were considered.*

Alternative #1 - The removal and replacement of lead and galvanized water services, Water Main Removal and Replacement Project, Storage Tank Upgrade

Alternative #2 – No Action – Not legally acceptable due to EGLE regulations

2. *A description of the recommended alternative, including its capital costs and a cost breakdown by project components (e.g., supply, treatment, distribution, storage).*

The total proposed project costs are estimated at \$10,500,000. The options for the project are either Alternative #1, moving forward with the outlined improvements, or Alternative #2, no action. The preliminary cost opinion is outlined below.

Village of Newberry DWRP Water Project					
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	Construction Subtotal				\$7,500,000.00
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	Engineering (13% of Construction Subtotal)	\$950,000.00
	Contingency (20% of Construction Subtotal)	\$1,500,000.00
	Administration	\$50,000.00
	Project Total Cost Opinion	\$10,500,000.00

3. A discussion of project financing and costs to users, including the proposed method of project financing and estimated monthly debt retirement; the proposed annual, quarterly, or monthly charge to the typical residential customer; and any special fees that will be assessed.

The proposed project is to be financed through the DWRF section of the State of Michigan Revolving Fund (SRF). The project is estimated to cost \$10,500,000, on a 30-year 2.125% loan with monthly payment cost of around \$40,000 per month which spread out among the 1,030 Equivalent Dwelling Units (EDUs) results in an approximate cost per single family residential user of \$40.00 per month. This cost does not include potential grant or principal forgiveness that may be provided by the State of Michigan. It also does not factor in the current contingency built into the Village of Newberry Water System.

4. A description of the anticipated social and environmental impacts associated with the recommended alternative and the measures that will be taken to mitigate adverse impacts.

No anticipated adverse social or environmental impacts for this project. Construction shall take place during normal hours. The improvements are specific to existing water system infrastructure. Water service shall be maintained by the contractor throughout the construction process.

In the event no one from the public attends the hearing (a reporter would be considered a member of the public, as would members of the applicant's governing body), the public hearing may be opened and closed without a formal presentation of the project plan. However, a transcript or recording must still be submitted with the final project plan documenting this action.

In the event no one from the public attends the hearing (a reporter would be considered a member of the public, as would members of the applicant's governing body), the public hearing may be opened and closed without a formal presentation of the project plan. However, a transcript or recording must still be submitted with the final project plan documenting this action.

Comments Received and Answered

The final project plan must include the following items:

- A. *A typed list with the names and addresses of the people who attended the public hearing.*
- B. *A copy of any written comments which were received during the public comment period for the proposed project.*

- C. *The applicant's responses to the comments received.*
- D. *A description of any changes which were made to the project as a result of the public participation process.*

No modifications made to the project plan due to public feedback.

Adoption of the Project Plan (Required)

The official period for receiving public comments on the proposed project may either end at the close of the formal public hearing or extend for a several days after the hearing. After the close of the public comment period, an alternative must be selected for implementation by the municipalities participating in the project. The final project plan submitted by the July 1 deadline must include resolutions from all of the participating local units of government to formally adopt the project plan and implement the selected alternative. A sample resolution can be found in Attachment K.

In the event no one from the public attends the hearing (a reporter would be considered a member of the public, as would members of the applicant's governing body), the public hearing may be opened and closed without a formal presentation of the project plan. However, a transcript or recording must still be submitted with the final project plan documenting this action.

Comments Received and Answered

The final project plan must include the following items:

- A. *A typed list with the names and addresses of the people who attended the public hearing.*

Tod Damph 213 E Harry Street
Jeff Watel 403 W John Street
Charles Rubelus 213 E McMillan

- B. *A copy of any written comments which were received during the public comment period for the proposed project.*

No written comments received

- C. *The applicant's responses to the comments received.*

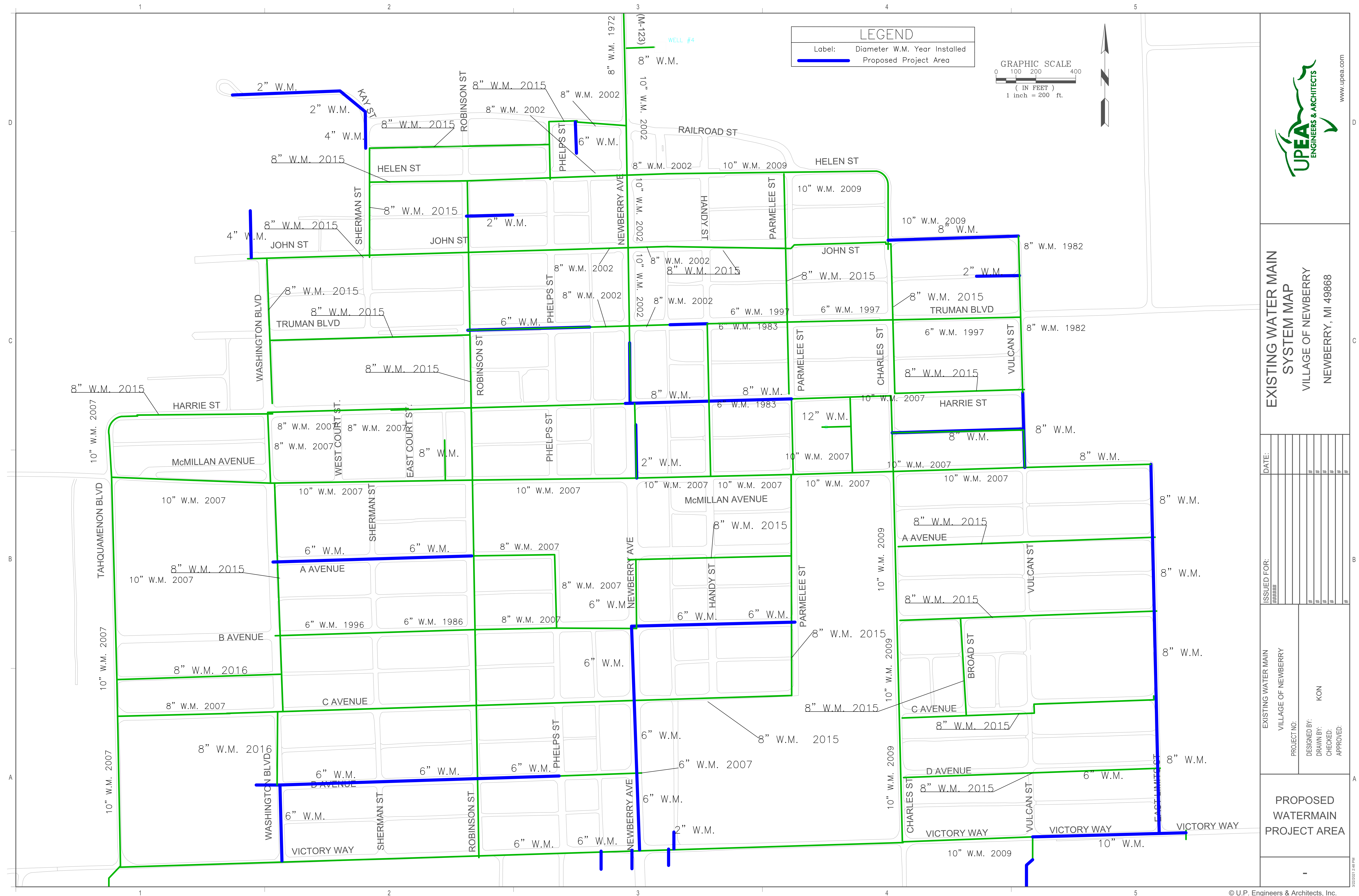
N/A

- D. *A description of any changes which were made to the project as a result of the public participation process.*

No modifications made to the project plan due to public feedback.

Adoption of the Project Plan (Required)

The official period for receiving public comments on the proposed project may either end at the close of the formal public hearing or extend for a several days after the hearing. After the close of the public comment period, an alternative must be selected for implementation by the municipalities participating in the project. The final project plan submitted by the July 1 deadline must include resolutions from all of the participating local units of government to formally adopt the project plan and implement the selected alternative. A sample resolution can be found in Attachment K.



15: Existing Land Use Map



VILLAGE OF NEWBERRY Existing Land Use

Data Sources: State of Michigan Geographic Data Library, EUP

- Village Boundary
- State Roads
- All Roads
- Railroads
- Rivers / Streams
- Parcels

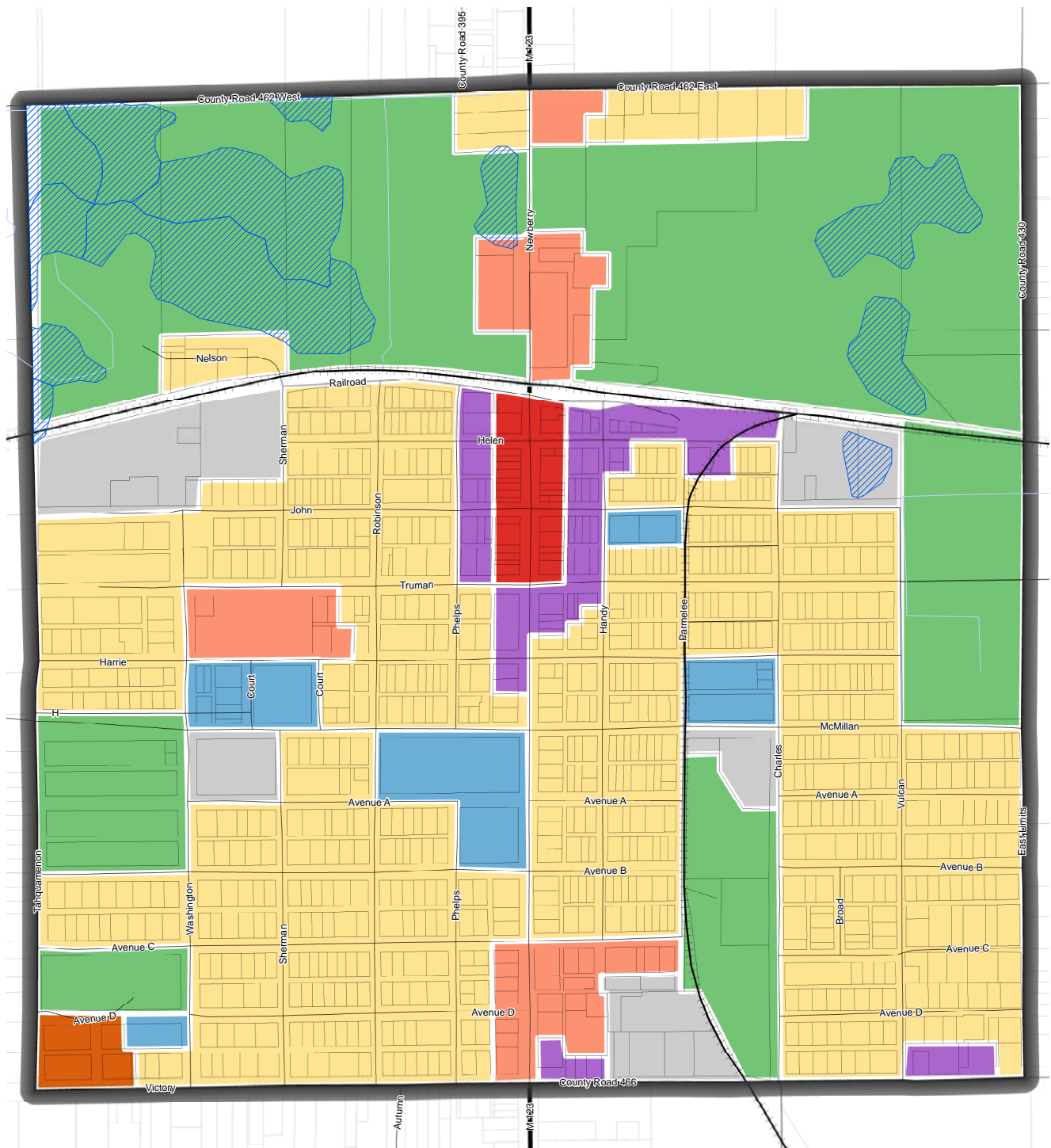
- Residential
- Community Commercial
- Central Business District
- Social / Institutional
- Industrial
- Open Space
- Unclassified / Vacant

Disclaimer: Parcel boundaries on this map are for illustrative purposes only and are not intended to represent legal descriptions. Select boundaries have been approximated from the original data source (EUPRDC) and are unknown. Please confirm any questions regarding property boundaries with the Village of Newberry.

0 0.125 0.25 Miles



32: Future Land Use Map



VILLAGE OF NEWBERRY Future Land Use

Data Sources: State of Michigan Geographic Data Library, EUP

- Village Boundary
- State Roads
- All Roads
- Railroads
- Rivers / Streams
- Parcels

- Village Residential
- Multi-Family Residential
- Central Business District
- Community Commercial

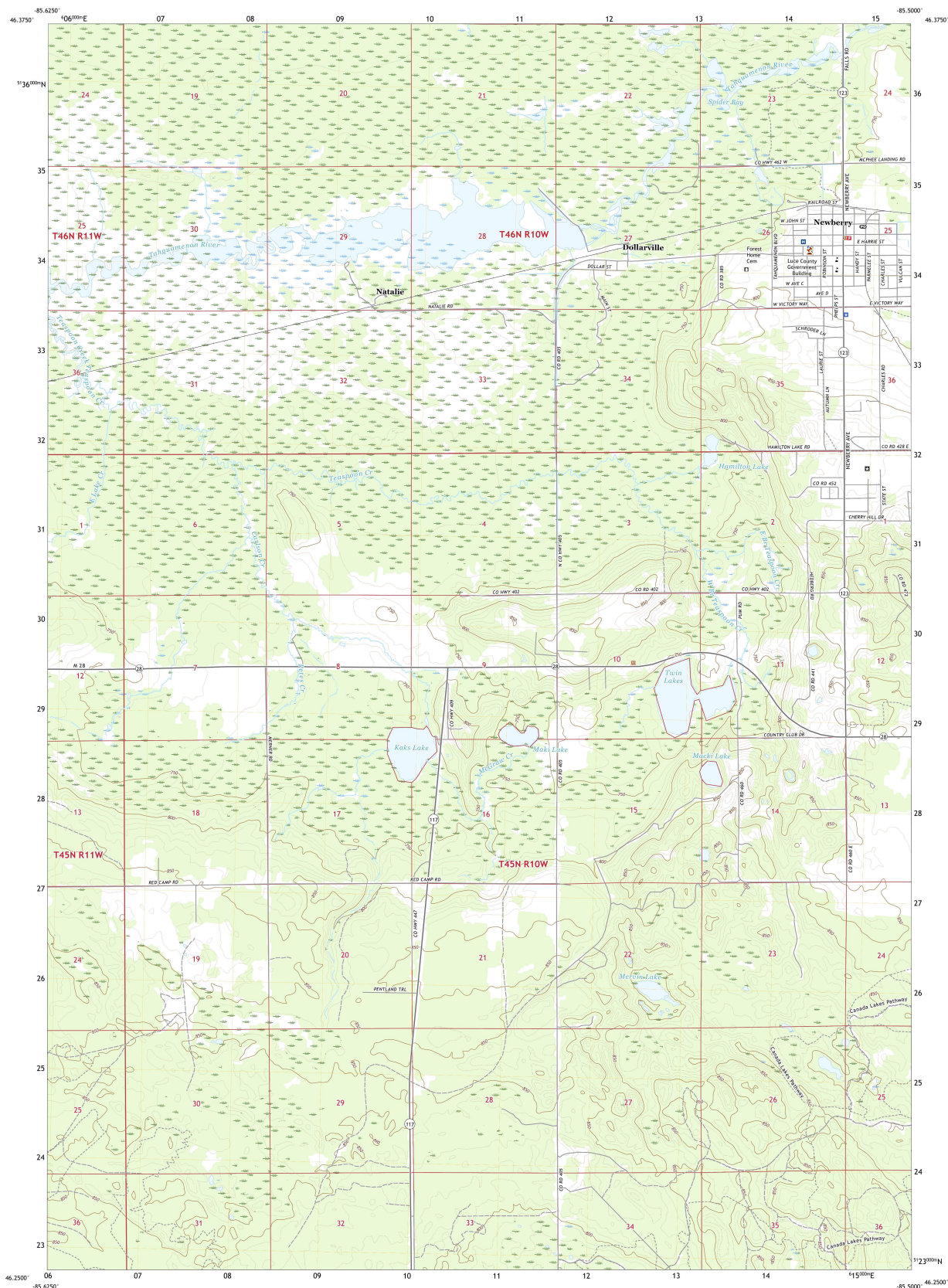
- Light Industrial
- Recreation / Conservation
- Public Service
- Mixed Use
- Wetlands Overlay District



U.S. DEPARTMENT OF THE INTERIOR
U.S. GEOLOGICAL SURVEY



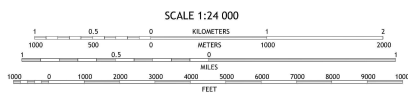
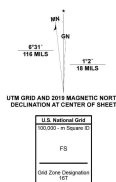
NEWBERRY QUADRANGLE
MICHIGAN - LUCE COUNTY
7.5-MINUTE SERIES



Produced by the United States Geological Survey

North American Datum of 1983 (NAD83)
World Geodetic System of 1984 (WGS84)
Projection and
1000-meter grid Universal Transverse Mercator, Zone 16T
This map is not a legal document. Boundaries may be
generalized for this map scale. Private lands within government
reservations may not be shown. Obtain permission before
entering private lands.

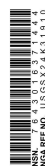
Imagery: NAD, July 2016, October 2016
Roads: U.S. Census, 2016
Names: National Hydrography Dataset, 1990 - 2019
Contours: National Elevation Dataset, 2009 - 2019
Boundaries: Multiple sources, see metadata file 2017 - 2018
Public Land Survey System: BLM, 2018
Wetlands: National Wetlands Inventory, 2005



This map was produced to conform with the
National Geospatial Program US Top Product Standard, 2011.
A metadata file associated with this product is draft version 0.6.18



NEWBERRY, MI
2019

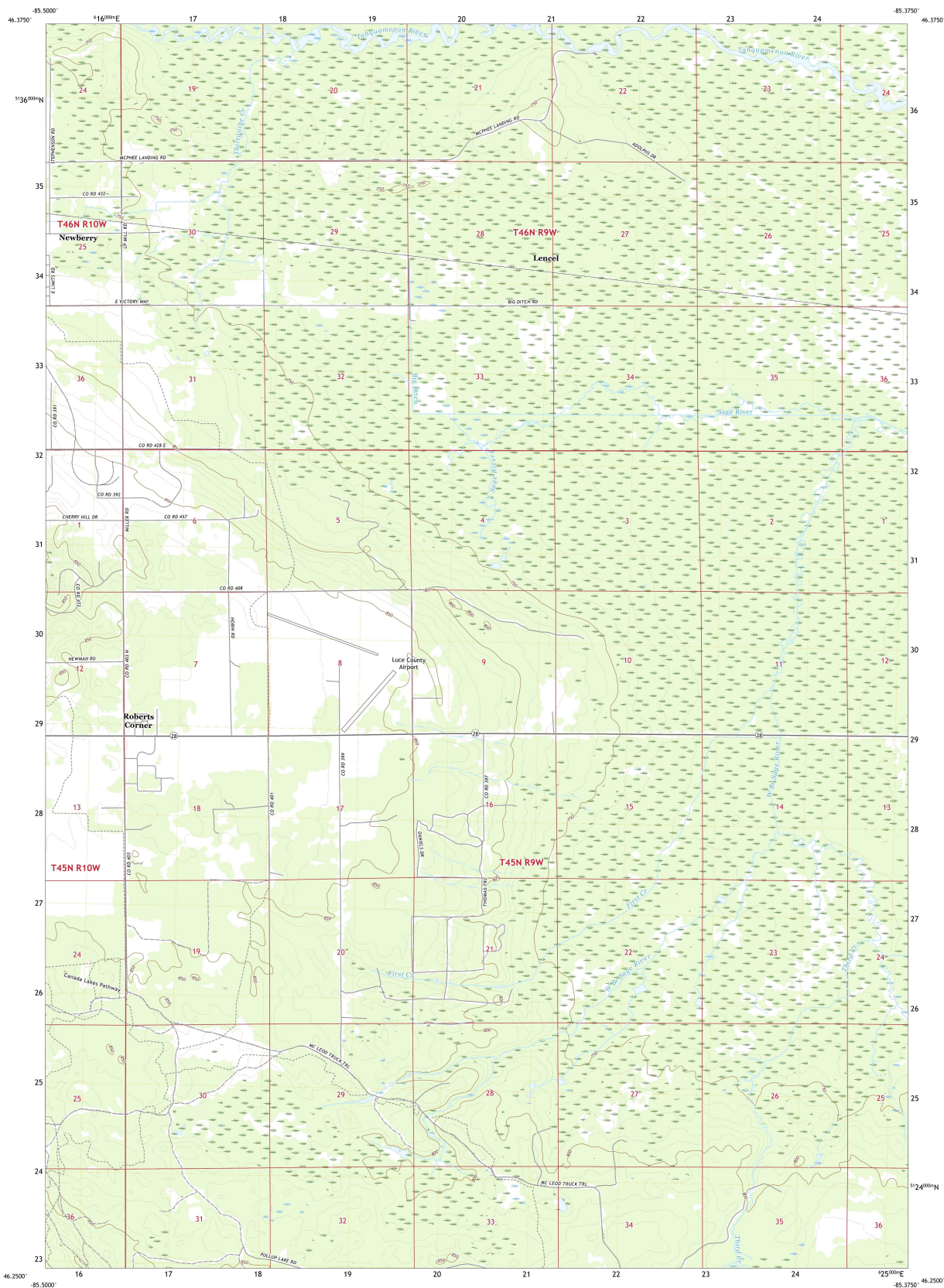




U.S. DEPARTMENT OF THE INTERIOR
U.S. GEOLOGICAL SURVEY



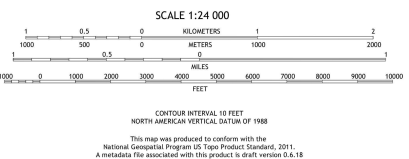
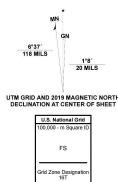
ROBERTS CORNER QUADRANGLE
MICHIGAN - LUCE COUNTY
7.5-MINUTE SERIES



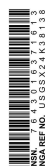
Produced by the United States Geological Survey

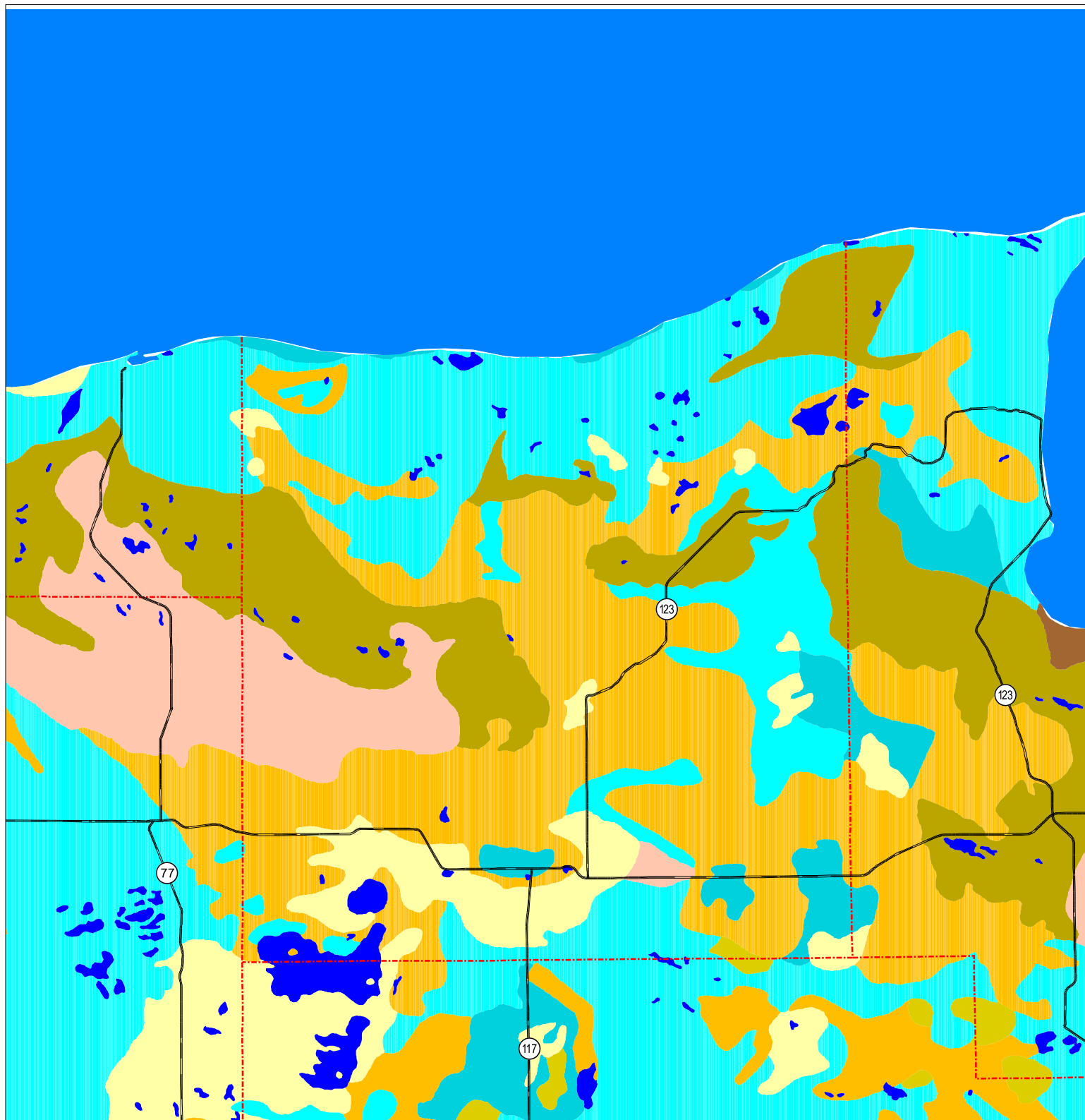
North American Datum of 1983 (NAD83)
World Geodetic System of 1984 (WGS84) Projection and
1 000-meter Universal Transverse Mercator, Zone 16T
This map is not a legal document. Boundaries may be
generalized for this map scale. Private lands within government
reservations may not be shown. Obtain permission before
entering private lands.

Imagery: NAIP, July 2016 - October 2016
Roads: U.S. Census Bureau, 2016
Names: GNIS, 1980 - 2019
Hydrography: National Hydrography Dataset, 1999 - 2019
Contours: National Elevation Dataset, 2009 - 2019
Boundaries: Multiple sources; see metadata file 2017 - 2018
Public Land Survey System: BLM, 2018
Wetlands: FWS National Wetlands Inventory 2005



ROBERTS CORNER, MI
2019





Quaternary Geology

Luce County



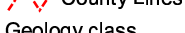
Data Source: Quaternary Geology of Michigan. 1998. Michigan Natural Features Inventory (MNFI) and Michigan Department of Natural Resources (MDNR). Digital version of the Quaternary Geology maps of Northern and Southern Michigan, at a scale of 1:500,000, from W.R. Farrand and D.L. Bell, 1982.

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Legend



Major Roads

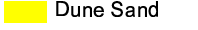


County Lines

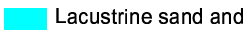
Geology class



Water



Peat and muck



Postglacial alluvium



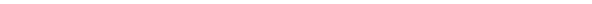
Dune Sand



Lacustrine clay and silt



Lacustrine sand and gravel



Glacial outwash sand and gravel and postglacial alluvium

Ice-contact outwash sand and gravel

Fine-textured glacial till

End moraines of fine-textured till

Medium-textured glacial till

End moraines of medium-textured till

Coarse-textured glacial till

End moraines of coarse-textured till

Thin to discontinuous glacial till over bedrock

Exposed bedrock surfaces

Artificial fill

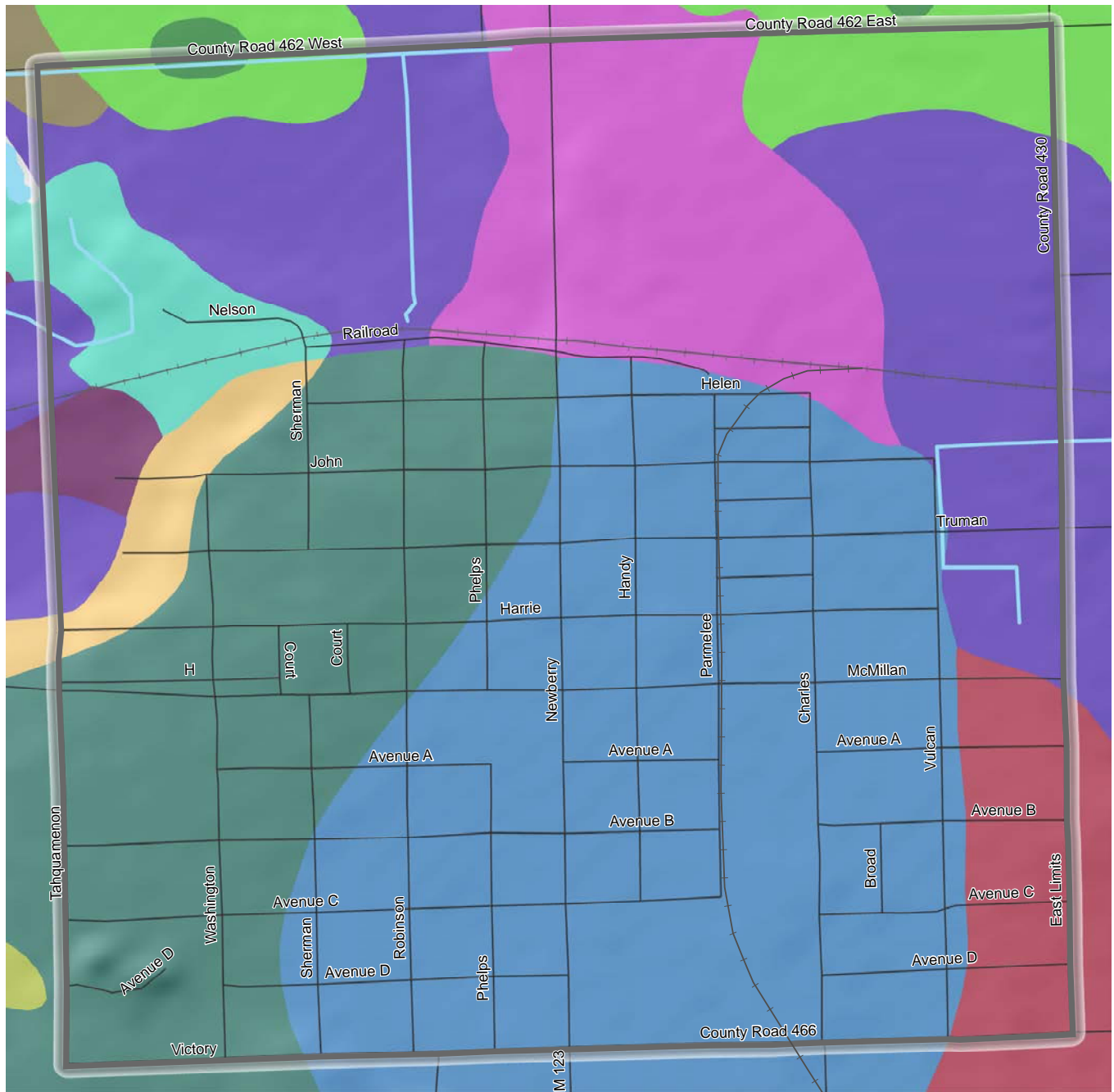
MICHIGAN STATE
UNIVERSITY
EXTENSION

0 2 4 Miles

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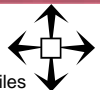
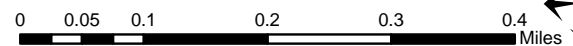
10: Detailed Soil Classification Map



VILLAGE OF NEWBERRY

Detailed Soils Classification

Data Sources: State of Michigan Geographic Data Library
Eastern Upper Peninsula Regional Planning and Development Commission



- | | | | |
|---------------------|-------------------------------------|-----------------------|-----------------------------|
| Village of Newberry | Allendale loamy fine sand | Kalkaska sand | Spot-Finch complex |
| Roads | Carbondale, Lupton, and Tawas soils | Paquin-Finch sands | Udipsamments and Udorthents |
| Ditches/Rivers | Gogomain muck | Pits, sand and gravel | Wallace sand |
| Lakes | Kalkaska loamy sand | Rudyard silt loam | Wallace sandy loam |
| Railroads | | | |





Clear Map
 Map Zooms
 Map Quick Keys
 Site Details

Layers

☒ Street
 ☐ Aerial
 ☐ Hybrid
 ☐ PLAT
 ☐ Land Use
 ☐ TOPO

Toggle layer visibility by clicking the corresponding checkbox

Land Use Restriction ☐

Environmental Management ☒

Leaking Underground Storage Tanks (Part 213 Closed) ☒



Leaking Underground Storage Tanks (Part 213 Open) ☒



Sites of Environmental Contamination (Part 201) ☒



Underground Storage Tanks (Part 211 Active) ☒



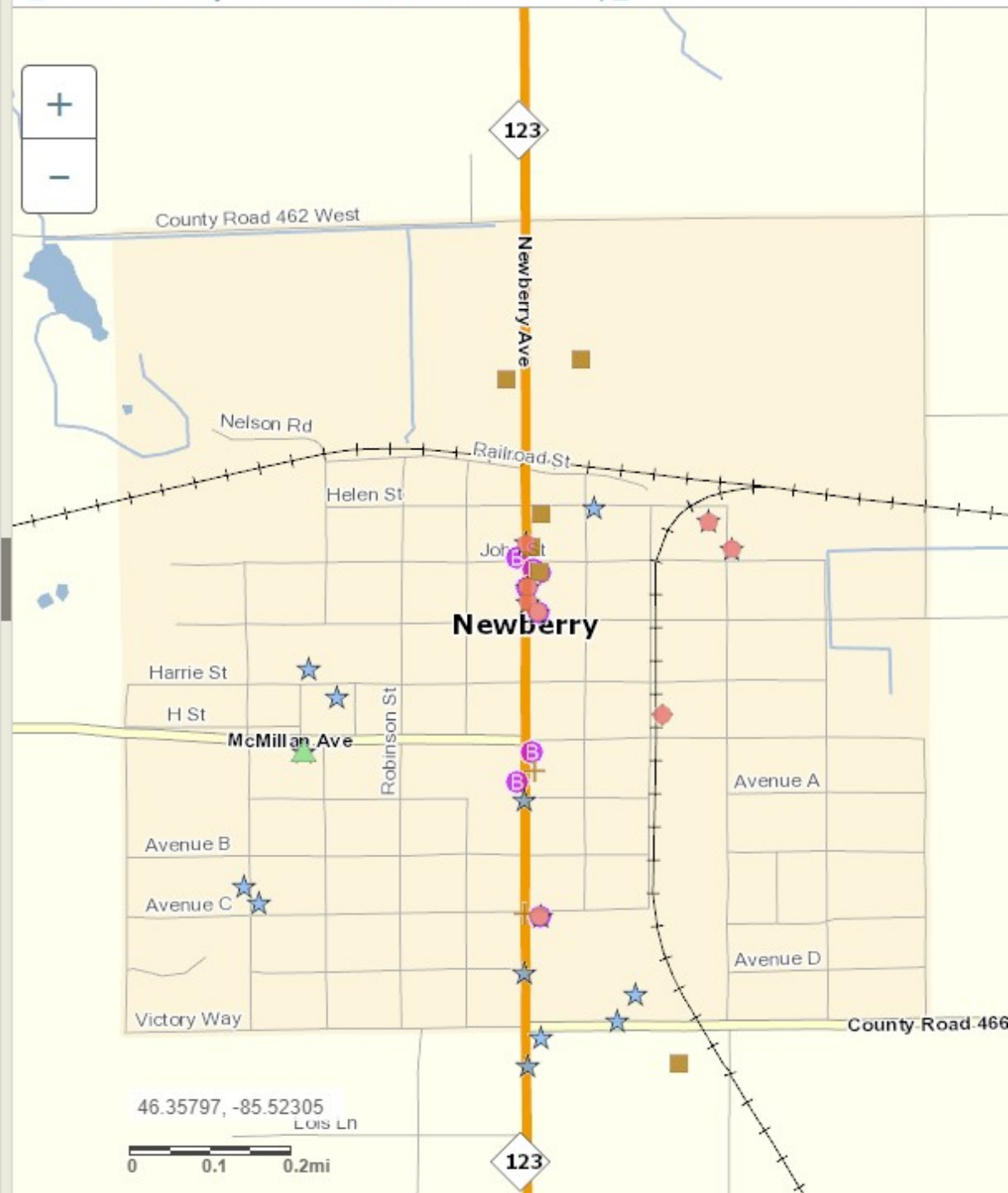
Underground Storage Tanks (Part 211 Closed) ☒



Remediation & Redevelopment District

Cadillac District

Gaylord District



Village of Newberry
Water System Revenues/Expenditures

<u>Revenue</u>	Actual 2019	Actual 2020	Actual 2021	Proposed 2022
State Grant - MDARD	\$0.00	\$0.00	\$0.00	
Water Sales	\$925,295.33	\$869,187.48	\$923,489.48	
Services Fees	\$0.00	\$25.63	\$0.00	
Water Penalties and Late Fees	\$10,550.08	\$4,461.78	\$7,256.44	
Bond Revenue	\$0.00	\$0.00	\$0.00	
Interest	\$2,288.87	\$2,056.25	\$1,232.78	
Reimburse - Ins Claim	\$0.00	\$0.00		
Reimbursement	\$0.00	\$0.00		
Interfund Transfers - Major	\$0.00	\$0.00		
Revenue Total	\$938,134.28	\$875,731.14	\$931,978.70	\$0.00

Expenses

Wages	\$120,563.41	\$64,733.00	\$88,270.60	
Wage Reimbursement	\$0.00	\$0.00	\$0.00	
Salaries	\$44,251.68	\$48,451.39	\$45,452.51	
Compensation - Elected	\$2,074.24	\$2,074.00	\$1,749.08	
Vacation Pay	\$7,463.09	\$7,067.40	\$6,748.18	
Holiday Pay	\$8,896.67	\$6,044.20	\$5,182.69	
Employer FICA	\$16,590.50	\$10,599.03	\$11,918.49	
Unemployment	\$1,155.46	\$0.00	\$0.00	
Health Insurance Buyout	\$0.00	\$0.00	\$0.00	
Overtime	\$6,186.47	\$4,272.27	\$4,892.53	
Longevity	\$0.00	\$0.00	\$0.00	
Funeral Leave	\$833.16	\$72.17	\$367.28	
Retirement - MERS - Employer P	\$47,707.01	\$37,094.13	\$43,473.29	
Medical Screening - Pre Employ	\$0.00	\$280.67	\$265.00	
Hospitalization	\$72,697.75	\$34,522.56	\$37,241.66	
Vision	\$0.00	\$0.00	\$0.00	
HAS	\$11,680.51	\$6,781.15	\$4,680.00	
Dental	\$0.00	\$0.00	\$0.00	
Sick Pay	\$17,988.53	\$5,594.57	\$3,183.53	
Workers Compensation	\$4,082.13	\$1,845.77	\$1,376.96	
Life Insurance	\$1,174.61	\$1,139.80	\$1,103.41	
Overhead Reimbursement	\$0.00	\$0.00	\$0.00	
Final Payout	\$0.00	\$0.00	\$0.00	
Settlement	\$4,000.00	\$1,999.99	\$0.00	
License Fee	\$0.00	\$0.00	\$0.00	
Office Supplies	\$955.62	\$219.53	\$447.84	
Operating Supplies	\$10,955.25	\$9,002.31	\$6,333.54	
IT Software	\$3,631.55	\$3,506.56	\$3,205.52	
Tools & Equipment und cap	\$3,745.19	\$5.99	\$3,220.93	
Gas, Oil, Grease	\$2,884.69	\$1,735.97	\$2,399.05	
Uniforms	\$1,508.60	\$316.63	\$482.68	
CDL License	\$0.00	\$2.50	\$20.00	

Drug Testing	\$0.00	\$0.00	\$62.50	
Building Maintenance	\$126.32	\$33.23	\$80.91	
Professional & Contractural	\$21,869.14	\$18,060.15	\$17,645.46	
Legal	\$7,637.37	\$26.25	\$337.50	
Collection Expense	\$62.56	\$0.00	\$0.00	
Bad Debt Expense	\$0.00	\$0.00	\$0.00	
Lease Expense	\$1,231.62	\$201.81	\$0.00	
Water Construction	\$0.00	\$0.00	\$0.00	
Telephone	\$2,951.76	\$2,561.91	\$2,462.97	
Postage	\$2,150.67	\$2,025.84	\$2,981.88	
Adminstrative Allcoation	\$0.00	\$0.00	\$0.00	
Publishing & Printing	\$2,168.19	\$1,931.88	\$2,096.41	
Professional Development	\$2,055.59	\$1,770.00	\$620.00	
Travel	\$579.82	\$847.94	\$231.15	
Memberships & Subscriptions	\$1,716.50	\$1,748.11	\$1,602.80	
Heat	\$1,464.68	\$1,324.43	\$1,185.29	
Repairs & Maintenance	\$2,628.80	\$9,266.67	\$2,642.70	
Vehicle Repairs & Maint	\$895.10	\$1,231.60	\$514.50	
Property Liability Insurance	\$6,912.50	\$4,732.32	\$13,482.31	
Equipment Rental	\$5,074.54	\$640.29	\$500.08	
Misc	\$250.00	\$0.00	\$0.00	

O & M Subtotal \$450,801.28 \$293,764.02 \$318,461.23

Depreciation Expense	\$0.00	\$0.00	\$0.00	
Bond Reserve 2014	\$14,745.00	\$0.00	\$0.00	
Capital Outlay Building	\$0.00	\$7,276.36	\$295.80	
Capital outlay	\$1,344.02	\$12,917.47	\$0.00	
Capy Outlay - Office Equipment	\$0.00	\$0.00	\$0.00	
RRI 2014	\$0.00	\$0.00	\$0.00	
Principal Notes Payable 2005	\$37,000.00	\$39,000.00	\$41,000.00	
RRI 2005	\$14,600.00	\$0.00	\$0.00	
Principal 2009 Jr Water Bond	\$5,000.00	\$5,000.00	\$5,000.00	
Principal 2014 Water Bond	\$110,000.00	\$112,000.00	\$114,000.00	
Interest 2005	\$79,632.51	\$78,870.00	\$77,260.94	
Interest 2009 Jr Water Bond	\$10,787.20	\$10,683.74	\$10,477.80	
Interest 2014 Water Bond	\$123,646.54	\$121,911.24	\$119,531.24	
Interfund Transfer Out - Major	\$0.00	\$0.00	\$0.00	

Existing Debt Service Subtotal \$396,755.27 \$387,658.81 \$367,565.78

Total Expenses \$847,556.55 \$681,422.83 \$686,027.01 \$0.00

Total Income \$90,577.73 \$194,308.31 \$245,951.69