



GRETCHEN WHITMER
GOVERNOR

STATE OF MICHIGAN
DEPARTMENT OF
ENVIRONMENT, GREAT LAKES, AND ENERGY
LANSING



PHILLIP D. ROOS
DIRECTOR

June 6, 2024

TO: All Interested Citizens, Organizations, and Government Agencies

SUBJECT: FINDING OF NO SIGNIFICANT IMPACT
**City of Ironwood, Gogebic County
Water Treatment Plant
Emerging Contaminants in Small or Disadvantaged Communities Grant
Program Project Number EC-001**

The purpose of this notice is to seek public input and comment on a preliminary decision by the Michigan Department of Environment, Great Lakes, and Energy (EGLE) that an Environmental Impact Statement (EIS) is not required to implement recommendations discussed in the attached Environmental Assessment of a water supply project planning document submitted by the applicant mentioned above.

HOW WERE ENVIRONMENTAL ISSUES CONSIDERED?

Consistent with the procedural requirements of the National Environmental Policy Act of 1969 (NEPA), 42 U.S.C. 4321 et seq., as implemented by the Council of Environmental Quality (CEQ) Regulations (40 CFR Parts 1500 through 1508), and the Environmental Protection Agency's NEPA Regulations (40 CFR Part 6), EGLE is required to evaluate all environmental implications of a proposed water supply project. EGLE has done this by incorporating a detailed analysis of the environmental impact of the proposed alternatives in its review and approval process. A project planning document was prepared by the applicant and reviewed by the State. EGLE has prepared the attached Environmental Assessment and found that the proposed project does not require the preparation of an EIS.

WHY IS AN EIS NOT REQUIRED?

Our environmental review concluded that no significant environmental impacts would result from the proposed action. Any adverse impacts have either been eliminated by changes in the project planning document or will be reduced by the implementation of the mitigative measures discussed in the attached Environmental Assessment.

HOW DO I GET MORE INFORMATION?

A map depicting the location of the proposed project is attached. This information is also available on our website at Michigan.gov/DWSRF under "Additional Links." The Environmental Assessment presents additional information on the project, alternatives that were considered, impacts of the proposed action, and the basis for our decision. Further information can be obtained by calling or writing one of the contact people listed below.

HOW DO I SUBMIT COMMENTS?

Any comments supporting or disagreeing with this preliminary decision should be submitted to me at EGLE, P.O. Box 30457, Lansing, Michigan 48909-4957. We will not take any action on this project planning document for 30 calendar days from the date of this notice in order to receive and consider any comments.

WHAT HAPPENS NEXT?

In the absence of substantive comments during this period, our preliminary decision will become final. The applicant will then be eligible to receive loan assistance from this Agency to construct the proposed project.

Any information you feel should be considered by EGLE should be brought to our attention. If you have any questions, please contact Jessica Ferris, the project manager, at 517-331-3744; FerrisJ6@Michigan.gov; or you may contact me. Your interest in this process and the environment is appreciated.

Sincerely,

Dan Beauchamp

Dan Beauchamp, Section Manager
Water Infrastructure Funding and Financing Section
Finance Division
517-388-3380

Attachment

DEPARTMENT OF ENVIRONMENT, GREAT LAKES, AND ENERGY
Emerging Contaminants in Small or Disadvantaged Communities
Grant Program
City of Ironwood, Gogebic County
Environmental Assessment
June 2024

PROJECT IDENTIFICATION

Applicant: City of Ironwood

Address: 213 South Marquette Street
Ironwood, Michigan 49938

Project Contact: Paul Anderson, City Manager/City Engineer

Project Number: EC-001

PROJECT BACKGROUND

The City of Ironwood (Ironwood) is located in Gogebic County in the western end of Michigan's Upper Peninsula. The existing water system includes Ironwood, portions of the Charter Township of Ironwood, and bulk water sale to the City of Hurley, Wisconsin. Refer to Figures 1 and 2 for maps of the project location and service area, respectively.

According to the United States Census Bureau, the population of Ironwood declined from 6,293 persons in 2000 to 5,014 persons in 2020. The projected population for 2035 is 4,462.

Ironwood is receiving funding from the Emerging Contaminants in Small and Disadvantaged Communities Grant Program (EC-SDC) to construct a water treatment facility including water treatment components, garage, clearwell, infiltration basin, and other items needed to address Ironwood's water treatment needs. The estimated cost of the project is \$11,400,000.

EXISTING SYSTEM AND PROJECT NEED

Ironwood receives its water from six wells, three of which are located in the Spring Creek wellfield and three in the Big Springs wellfield. Two of the wells in the Spring Creek wellfield are vertical turbine located inside wellhouses, and the third, as well as the wells in the Big Springs wellfield, are submersible wells located outside that pump through the wellhouse. A polyphosphate/orthophosphate blend is added to the water in each wellhouse. Prior to leaving the Big Springs wellfield, a water main passes beneath a chlorine/generator building. Chlorine can be injected into the water main in a below-grade vault located in the building. The water from the Big Springs wellfield is conveyed via water main to the clearwell at the Spring Creek pumphouse site. See Figure 3 for the wellfield locations.

All six wells pump to a 140,000-gallon concrete clearwell located at the Spring Creek pump station site. The clearwell is piped to three high-lift pumps located in the pump house. The high-lift pumps send the water from the pump station into the Ironwood distribution system via parallel transmission mains. The Ironwood distribution system contains two elevated storage towers.

Water samples were collected from all six of the wells that supply water to Ironwood and were analyzed for a variety of water quality parameters and the results are presented in Table 1, below.

Table 1: Water Quality Summary, March 2020 - Ironwood Wells

Parameter	Spring Creek Wells			Big Springs Wells			MCL ¹	Secondary Standard ²
	Well 101	Well 104	Well 204	Well 201	Well 202	Well 203		
Alkalinity (mg/L as CaCO ₃) ³	160	190	160	101	120	130		
Ammonia-N (mg/L)	0.44	ND ⁶	0.68	0.54	0.55	0.83		
Arsenic (ug/L) ⁴	ND	ND	1.3	ND	ND	0.84	10	
Hardness (mg/L)	150	180	160	100	100	130		120
Iron (ug/L)	260	ND	170	180	260	280		300
Manganese (ug/L)	450	0.65	340	510	460	400		50
TOC (mg/L) ⁵	2.2	1.2	1.7	1.4	1.6	1.7		
Notes:								
1 – Maximum contaminant levels (MCLs) are legally enforceable standards								
2 – Secondary standards are aesthetic standards and are not legally enforceable								
3 – Milligrams per liter (mg/L)								
4 – Micrograms per liter (ug/L)								
5 – Total Organic Carbon (TOC)								
6 – Not Detected above detection limit (ND)								

Manganese

Manganese does not currently have an established MCL, however, the United States Environmental Protection Agency (US EPA) has established a health advisory for manganese of 300 ug/L which protects against concerns of potential neurological effects. For infants less than 12 months old, the 300 ug/L level is also considered an acute exposure limit. In addition to the adverse health effects of manganese, water with concentrations above the secondary standard of 50 ug/L can cause discolored water, black or brown staining on fixtures, and taste complaints.

Table 2 presents the manganese concentrations for three sampling events for all six of Ironwood’s wells.

Table 2: Manganese Water Sampling Results

Well Number	Manganese (ug/L)		
	July 2019	October 2019	February 2020
101	710	430	450
104	1.2	2.4	0.65
204	310	310	340
201	520	770	510
202	450	410	460
203	370	370	400

The samples collected identified concentrations of manganese above the US EPA advisory level of 300 ug/L in all the wells except Well No. 104. If Well No. 104 were unavailable for blending, Ironwood would not be able to maintain manganese levels in the distribution system below the advisory level.

Ammonia

Ammonia in water exhibits a high chlorine demand and can make it difficult to have a free chlorine residual present, which is used for disinfection. When chlorine is added to water with ammonia, it creates chloramines. The ammonia present in the wells requires higher than normal chlorine chemical feed rates to achieve a free chlorine residual.

Iron

The secondary standard for iron is 300 ug/L. As shown in Table 3, the drinking water from Ironwood's wells is below the secondary standard, however it is close to the 300 ug/L limit.

Total Organic Carbon (TOC)

TOC in drinking water can create disinfection byproducts (DBPs) when chlorine is used as a disinfectant. Regulated DBPs include total trihalomethanes (TTHMs) and haloacetic acids (HAA5). Concentrations of DBPs in the distribution system have not exceeded the MCLs.

Hardness

Water above 120 mg/L is considered hard water which causes scaling on fixtures and can eventually cause piping to become plugged. Table 1 shows hardness ranging from 100 mg/L to 180 mg/L.

PROPOSED PROJECT

Alternatives Considered

Alternative 1: No Action

Taking no action is not a viable alternative for this project. Issues with manganese will persist and potentially get worse which could result in a threat to public health.

Alternative 2: Optimal Performance of Existing Facilities

The system currently does not have a water treatment component for iron and manganese removal. Polyphosphates are added to the water to sequester the iron and manganese, but many operational adjustments to the polyphosphate system have been attempted and problems still exist. Operational adjustments to the existing system will not solve or eliminate the manganese and iron problems.

Alternative 3: Regional Alternative

The Gogebic Range Water Authority (GRWA) is a water utility that buys water from the City of Wakefield and sells it to the Charter Township of Ironwood, Bessemer Township, and Blackjack and Indianhead ski resorts, and has watermain connections to the City of Bessemer. The GRWA does not have adequate capacity to supply water to Ironwood. Therefore, regionalization is not a feasible alternative to address the manganese and iron issues.

Alternative 4: New Wells

A report prepared by Cooper Engineering Company, Inc. in June 1991 summarized the studies that have been prepared looking for additional wellfields in the Ironwood vicinity. The study indicated that the Spring Creek/Big Spring Basin is the only discovered and developed natural aquifer in the Ironwood area that can provide an adequate quality water supply for Ironwood. There were several investigations that were reviewed in making this determination, all of which came to the same conclusion; therefore, this alternative was not evaluated further.

Alternative 5: Construction of a New Water Treatment Facility

- Manganese Removal Options

The most common and cost-effective option of manganese removal is chemical oxidation followed by sand filtration. In groundwater, the manganese ions are in solution. When a strong oxidant is added to the water, it converts the manganese to a filterable solid. The chemical oxidant that is added for manganese oxidation is typically sodium or potassium permanganate. Chlorine is a less expensive chemical oxidant, but the reaction with manganese is too slow to be used in a filtration process.

Other options for manganese removal are chemical oxidation followed by membrane filtration or reverse osmosis. Both options are very expensive from a capital cost and operations and maintenance standpoint and were not considered further.

- Gravity Filter Water Treatment Plant

In a manganese gravity filtration system, water to be filtered is pumped under low pressure to the treatment facility where it flows by gravity through the various treatment processes. Following the oxidation process, the water flows through the filter cells from top to bottom. As the water passes through the filter media, the insoluble particles of manganese are removed.

As more water gets filtered, the restriction to flow, created by the accumulation of manganese and iron solids on the media, steadily increases. In a gravity facility, this restriction to flow, called head, is measured in feet of water depth in the filter cells. As the solids accumulate, the depth of water in the filter cells increases. Due to the physical nature of a gravity filter, when the depth of water in a cell reaches its maximum designed head, backwashing is required. Failure to backwash at the proper time could result in the filter overflowing or poor effluent water quality being produced.

Alternative 5A – Concrete Gravity Filter Water Treatment Plant

A concrete gravity filter water treatment plant has sand filters that are constructed out of concrete.

Alternative 5B – Steel Gravity Filter Water Treatment Plant

A steel gravity water treatment plant has sand filters that are constructed out of steel and are constructed by the filter manufacturer and delivered to the jobsite.

- Pressure Filter Water Treatment Plant

A pressure filter treatment plant removes manganese and other constituents from the water in the same process as the gravity filters, except the water flows through the filter by pressure instead of gravity. The sand layers and filtering rates are the same. The advantage of a pressure filter is that it is possible to only pump the water one time. The well pump provides the pressure to push the water through the filter and into the distribution system.

Since Ironwood is already pumping the water under low pressure to the Spring Creek pump house site where it is pumped again under high pressure into the distribution system, a pressure filter is not ideal for this scenario and was not evaluated further.

Selected Alternative

Alternative 5A: Construction of a Concrete Gravity Filter Water Treatment Plant

The selected alternative is Alternative 5A. Figure 4 shows the proposed water treatment plant layout. The proposed water treatment plant project has the following features:

- 30 minutes of baffled detention
- Four concrete gravity, dual-media filters
- Chlorine, sodium permanganate, and orthophosphate chemical feed rooms
- 500,000-gallon concrete clearwell
- Backwash water infiltration basin
- Converting the existing pump station to cold storage

The construction of the water treatment plant building and the installation of high service pumping are part of the first phase of the project and are being funded outside the EC-SDC Grant. The estimated cost of the EC-SDC Grant project is \$11,400,000.

EXISTING ENVIRONMENT AND PROJECT IMPACTS

Water Quality Impacts

The proposed project does not have any anticipated impacts to water resources or surface waters such as inland lakes, streams, or wetlands.

Construction Impacts

Associated impacts with this project are related to construction disturbances including dust and soil erosion/sedimentation. Typical construction mitigation is expected for the selected alternative. Watering will take place during dry days to mitigate dust. Soil erosion and sedimentation control measures will be required by the contract documents.

A Section 7 review on the United States Fish and Wildlife Service (USFWS) website was completed by the consulting engineer and identified the Canada lynx, the Gray wolf, the Northern long-eared bat, the Tricolored bat, the Rufa red knot, and the Monarch butterfly to be located in the area. It was determined that there are no critical habitats within the project area and, therefore, there are no anticipated impacts to federally listed species. Tree removal will be prohibited between April 1 and October 31 to prevent the unintentional take of the Northern long-eared bat.

The Michigan Natural Features Inventory review indicated that the Mudpuppy was observed in Spring Creek, located 550-feet north of the project site. Given that there are no in-stream work or land clearing activities associated with this project, it is not anticipated that the species will occur on the project site.

The State Historic Preservation Office (SHPO) determined that the project will have no adverse effect on historic properties within the project area. If the scope of the project changes in any way or in the event that archaeological material is encountered during construction activities related to the project, work will be halted and SHPO will be contacted immediately.

Federally identified tribes for Gogebic County were contacted requesting comments as to any potential impacts to tribal historic, religious, or cultural resources. To date, no comments have been received.

PUBLIC PARTICIPATION

A public meeting to discuss the proposed project was advertised in *The Globe* on May 11, 2023. The public meeting was held at the Ironwood Memorial Building on May 22, 2023. The main topics of discussion at the hearing were related to the need for the project and user costs. At the conclusion of the hearing, Ironwood passed a resolution to adopt the project planning document to implement the selected alternative.

REASONS FOR CONCLUDING NO SIGNIFICANT IMPACTS

The project will present no long-term significant impacts associated with its construction or operation. All construction activities will be limited to existing structures or previously disturbed areas of Ironwood. Long term positive impacts include improved water quality for Ironwood.

Questions regarding this Environmental Assessment should be directed to:

Ms. Jessica Ferris, Project Manager
Water Infrastructure Funding and Financing Section
Finance Division
Michigan Department of Environment, Great Lakes, and Energy
P.O. Box 30457
Lansing, Michigan 48909-4957
Telephone: 517-331-3744
E-Mail: FerrisJ6@Michigan.gov

Figure 1: Project Location

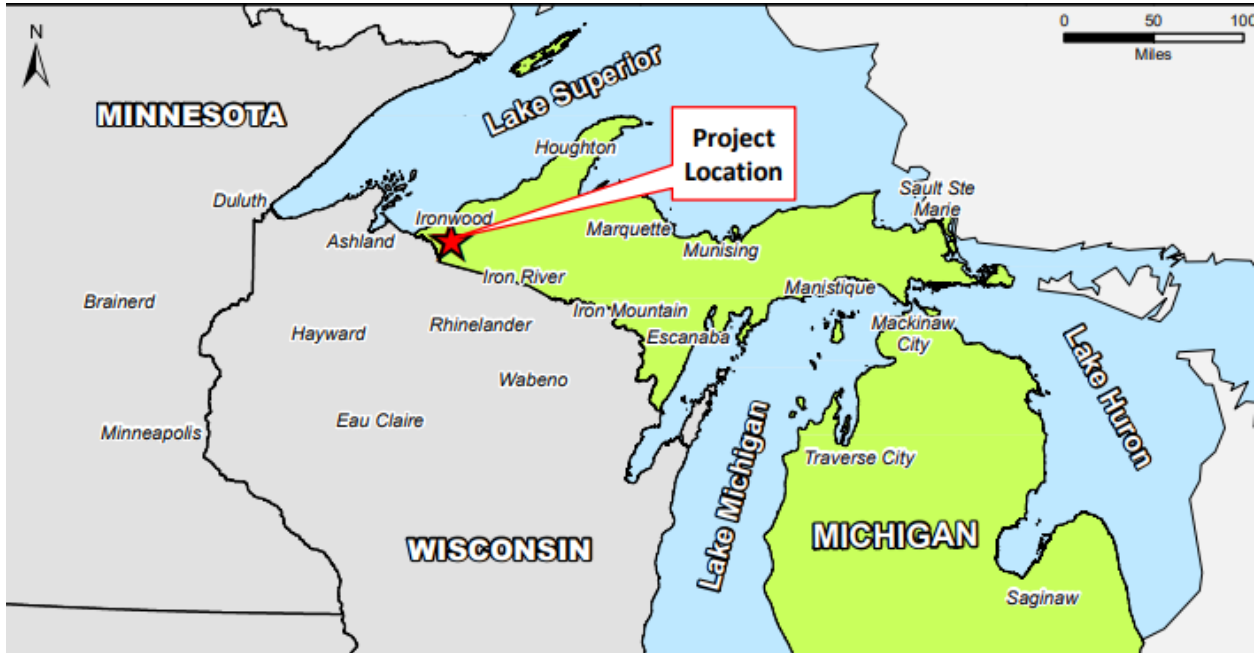


Figure 2: Ironwood Service Area

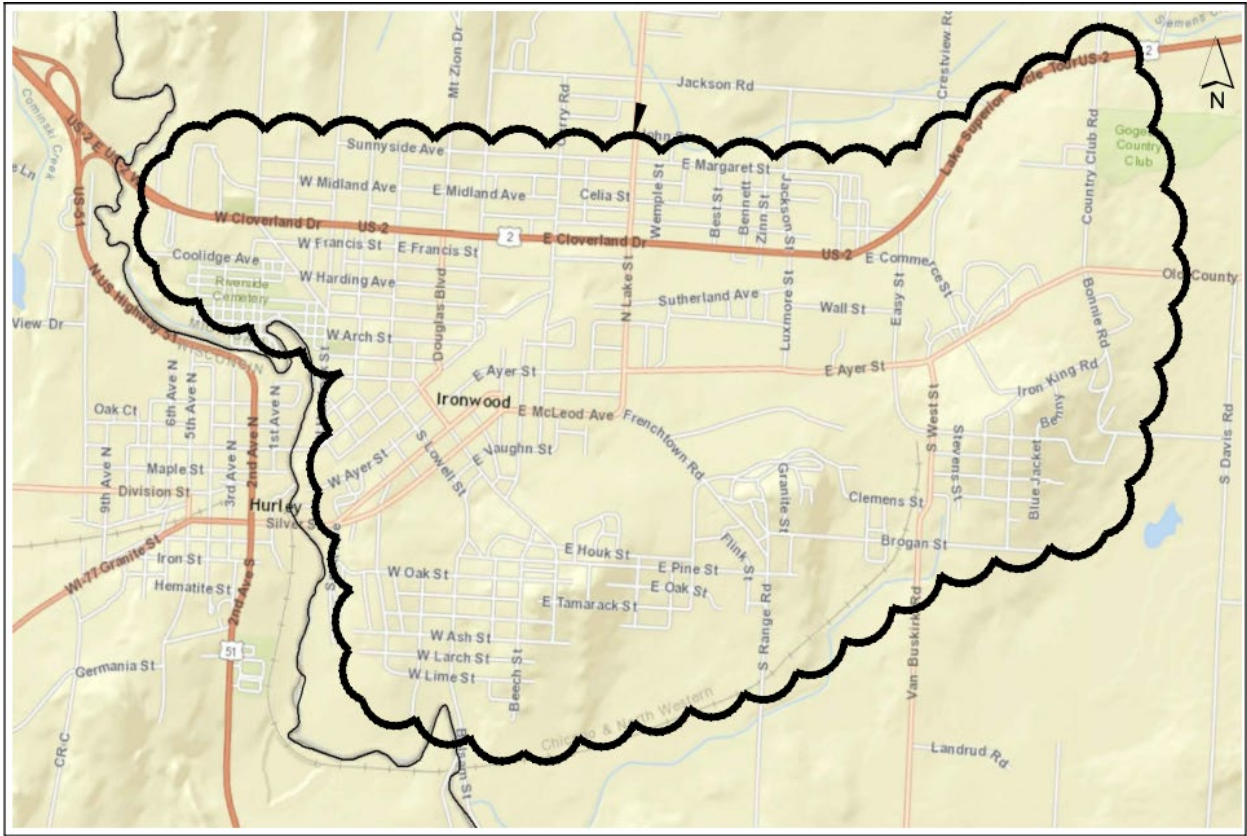


Figure 3: Ironwood Wellfield and Transmission Main Locations



Figure 4: Proposed Water Treatment Plant Layout

