NPS Form 10-900 1024-0018 (Rev. 10-90)

United States Department of the Interior National Park Service

# NATIONAL REGISTER OF HISTORIC PLACES REGISTRATION FORM



923

OMB No.

This form is for use in nominating or requesting determinations for individual properties and districts. See instructions in How to Complete the National Register of Historic Places Registration Form (National Register Bulletin 16A). Complete each item by marking "x" in the appropriate box or by entering the information requested. If any item does not apply to the property being documented, enter "N/A" for "not applicable." For functions, architectural classification, materials, and areas of significance, enter only categories and subcategories from the instructions. Place additional entries and narrative items on continuation sheets (NPS Form 10-900a). Use a typewriter, word processor, or computer, to complete all items.

1. Name of Property
historic name Waverly Municipal Hydroelectric Powerhouse
other names/site number
2. Location
street & number 121 1st Street NE not for publication N/A city or town Waverly vicinity N/A state lowa code IA county Bremer code 017 zip code 50677
3. State/Federal Agency Certification
As the designated authority under the National Historic Preservation Act of 1986, as amended, I hereby certify that this X nomination request for determination of eligibility meets the documentation standards for registering properties in the National Register of Historic Places and meets the procedural and professional requirements set forth in 36 CFR Part 60. In my opinion, the property _X _ meets does not meet the National Register Criteria. I recommend that this property be considered significant nationally statewide _X _ locally. ( See continuation sheet for additional comments.)  Signature of certifying official Date State or Federal agency and bureau
In my opinion, the property meets does not meet the National Register criteria. ( See continuation sheet for
additional comments.)
Signature of commenting or other official Date
State or Federal agency and bureau
4. National Park Service Certification
I, hereby certify that this property is:     entered in the National Register     See continuation sheet.     determined eligible for the     National Register     See continuation sheet.     determined not eligible for the     National Register     removed from the National Register
other (explain):

Waverly	Municipal	H	ydroelectric	Powerhouse
Name o	f Property			_

Bremer County, Iowa
County and State

5. Classification		
Ownership of Property (Check as many boxes as apply) private X public-local public-State public-Federal	Category of Property  (Check only one box)  X building(s)  district site structure object	Number of Resources within Property  Contributing Noncontributing  buildings sites structures objects 1 0 Total
Name of related multiple (Enter "N/A" if property is not part of a	property listing multiple property listing.)	Number of contributing resources previously listed in the National Register
N/A		
6. Function or Use		
Historic Functions (Enter categories from instructions) GOVERNMENT/public works		Current Functions (Enter categories from instructions) GOVERNMENT/public works
-		
7. Description		
Architectural Classification (Enter categories from instructions) LATE 19 <sup>TH</sup> & EARLY 20 <sup>TH</sup> CEN	ITURY REVIVALS/	Materials (Enter categories from instructions foundationCONCRETE
LATE 19 <sup>TH</sup> & EARLY 20 <sup>TH</sup> CE	NTURY REVIVALS/	CONCRETE
Italian Renaissance		walls BRICK
		other

Narrative Description (Describe the historic and current condition of the property on one or more continuation sheets.)

Bremer County, Iowa
County and State

8. Statement of Significance						
Applicable National Register Criteria (Mark "x" in one or more boxes for the criteria qualifying the property for National Register listing)	Areas of Significance (Enter categories from instructions)  ARCHITECTURE					
X A Property is associated with events that have made a significant contribution to the broad patterns of our history.	COMMUNITY PLANNING AND DEVELOPMENT					
B Property is associated with the lives of persons significant in our past.						
_X _ C Property embodies the distinctive characteristics of a type, period, or method of construction or represents the work of a master, or possesses high artistic values, or represents a significant and distinguishable entity whose components lack individual distinction.	Period of Significance 1909 - 1963					
D Property has yielded, or is likely to yield information important in prehistory or history.						
Criteria Considerations (Mark "X" in all the boxes that apply.)  Property is:  A owned by a religious institution or used for religious purpose	Significant Dates 1909 1938					
B removed from its original location.	Significant Person (Complete if Criterion B is marked above)					
C a birthplace or a graveD a cemetery.	N/A					
E a reconstructed building, object, or structure	Cultural Affiliation N/A					
F a commemorative property.						
G less than 50 years of age or achieved significance within the past 50 years.	Architect/Builder Ralston, John Glen Fargo Engineering Company					
Narrative Statement of Significance						
(Explain the significance of the property on one or more continuation sheets.)  9. Major Bibliographical References						
Bibliography (Cite the books, articles, and other sources used in preparing this form on one of	or more continuation sheets.)					
Previous documentation on file (NPS)  preliminary determination of individual listing (36 CFR 67) has been requested.  previously listed in the National Register  previously determined eligible by the National Register  designated a National Historic Landmark  recorded by Historic American Buildings Survey # Other  recorded by Historic American Engineering Record # Name of repository:						

Waverly Municipal Hydroelectric Powerhouse	Bremer County, Iowa
Name of Property	County and State
10. Geographical Data	
Acreage of Property less than one acre  UTM References (Place additional UTM references on a continuation	sheet)
THE PROPERTY OF THE PROPERTY O	Silect)
Zone Easting Northing Zone Easting Northing 1 15 543407 4730582 3	
Verbal Boundary Description (Describe the boundaries of the pr	operty on a continuation sheet.)
Boundary Justification (Explain why the boundaries were selected	on a continuation sheet.)
11. Form Prepared By	
name/title Jan Olive Full / Historian/Architectural Historia	n
organization Tallgrass Historians L.C.	date <u>May 2013</u>
street & number 2460 S. Riverside Drive	telephone <u>319-354-6722</u>
city or town lowa City	state IA zip code 52246
Additional Documentation	
Submit the following items with the completed form:	
Continuation Sheets	
Mana	
Maps A USGS map (7.5 or 15 minute series) indicating the pro	aperty's location
A <b>sketch map</b> for historic districts and properties having	
Photographs  Personniative block and white photographs of the pro-	an artic
Representative black and white photographs of the pr	operty.
Additional items (Check with the SHPO or FPO for any additional ite	ms)
Property Owner	
(Complete this item at the request of the SHPO or FPO.) name City of Waverly – City Hall	
	-
street & number 200 1st Street NE	telephone <u>319-352-4252</u>
city or town state _IA	_zip code _ <u>50677</u>
Paperwork Reduction Act Statement: This information is being collecter for listing or determine eligibility for listing, to list properties, and to amend accordance with the National Historic Preservation Act, as amended (16 U	

Estimated Burden Statement: Public reporting burden for this form is estimated to average 18.1 hours per response including the time for reviewing instructions, gathering and maintaining data, and completing and reviewing the form. Direct comments regarding this burden estimate or any aspect of this form to the Chief, Administrative Services Division, National Park Service, P.0. Box 37127, Washington, DC 20013-7127; and the Office of Management and Budget, Paperwork Reductions Project (1024-0018), Washington, DC 20503.

OMB No. 1024-0018

United States Department of the Interior National Park Service

## NATIONAL REGISTER OF HISTORIC PLACES CONTINUATION SHEET

Section 7	Page 1
-----------	--------

Waverly	Municipal Hydroelectric Powerhouse
name of	property

Bremer County,	lowa
county and state	

### 7. Description

Summary Paragraph

The Waverly Municipal Hydroelectric Powerhouse (hereafter "Powerhouse") is located in the heart of central Waverly, Iowa, a county seat town in the northeastern part of the state. Bremer County sits within the landform known as the Iowan Surface, described as "slightly inclined to gently rolling with long slopes, low relief, and open views to the horizon."<sup>2</sup> This part of Iowa is well drained by an extensive and mature system of creeks, streams, and rivers, and Bremer County lies on the western edge of a much more rugged area of northeast Iowa often called "Little Switzerland." The county as well as the rest of northeast Iowa offered farmers a landscape that favored dairy farming <sup>3</sup> and Waverly long has been associated with that industry. The town is bisected and frequently troubled by one of northeast Iowa's mature rivers—the main branch of the Cedar River—which crosses through the county more or less in a southeasterly direction flowing toward the Mississippi River several counties away. The Powerhouse is positioned along the east bank of the Cedar River, adjacent to and immediately behind the town's main historic commercial street, and just north (upstream) of the Bremer Avenue bridge. The Powerhouse's associated dam, which has recently been replaced by a new "inflatable" dam, forms a large upstream pond that was first utilized in the mid-nineteenth century to power riverside mills. Constructed in 1909, the Powerhouse has an asymmetrical footprint with walls of solid brick covered by a steel-framed roof clad in red "French interlocking" tiles. Two additions, the result of a single construction project in 1938, were built to provide a small office and, in the larger of the two, space for the diesel generators that were needed as the city's demand for electricity grew. These additions are stylistically sympathetic to the 1909 architecture, with red brick walls, gray masonry headers, and Classical details. Fenestration on the 1909 building largely consists of replacement casement windows and newer doors, while most of the tall, 1938 glass-block windows remain extant. Doors on the 1938 additions are, likewise, newer. The great flood of 2008 swamped this facility and swirled the river around the building's east and south sides, washing away the exterior landscaping and pavement. Some minor interior damage resulted, including a cracked floor where the concrete was undermined but all damage has since been repaired.

Description: Exterior:

Constructed in 1909, the original building has an asymmetrical footprint comprised of a gabled main mass, with two side wings, one to the south that houses a repair shop, and a smaller elongated west wing that extends into the river and houses the hydroelectric turbines. Heavy, metal head-gates are positioned just upstream from this turbine wing (also called the water-wheel wing on some historic documents), one for each turbine to regulate or shut off the flow of water through the turbine intakes. Currently the turbine wing has three, vertical-shaft Leffel turbines and generators from the 1920s.

This 1909 building has a concrete foundation. Its exterior walls are of two tones of red brick, with the darker brick used to frame panels of slightly inset, lighter-colored red brick. Bricks are laid in a common bond pattern with white or light gray mortar. Decorative brick corbelling appears across the top of the brick frames. All the brick walls, exterior and interior,

<sup>&</sup>lt;sup>1</sup> Waverly is located toward the southwest corner of the county, rather than the more typical central location, but has always served as county seat.

<sup>&</sup>lt;sup>2</sup> Jean C. Prior, *Landforms of Iowa* (Iowa City: University of Iowa Press, 1991), 68-69.

<sup>&</sup>lt;sup>3</sup> See generally Vernon C. D. Pinkham, "A Historical Study of Dairy Manufacturing and marketing in Iowa," (unpubl. M.S. thesis, Iowa State College, 1923); also Lowell Soike, "Viewing Iowa's Farmsteads," in *Take this Exit*, ed. by Robert F. Sayre (Ames: Iowa State University Press, 1989), 153-172.

<sup>&</sup>lt;sup>4</sup> See tile manufacturer Ludowici's website at http://www.ludowici.com/product/interlocking. Also, see page 47 of Virginia and Lee McAlester, *A Field Guide to American Houses* (New York: Alfred A. Knopf, 1986).

OMB No. 1024-0018

United States Department of the Interior National Park Service

# NATIONAL REGISTER OF HISTORIC PLACES CONTINUATION SHEET

Section	7	Page 2	

Waverly	/ Municipa	l Hydr	<u>oelectric</u>	Powerhous	e
name of	property	-			

Bremer County, Iowa	
county and state	

appear to be load-bearing. Window headers, where present, and sills are concrete. Except for a south side transom, the original multiple-light windows have been replaced by casements. The roof over this original building is clad with red terra cotta tiles from Ludowici tile company in Ohio and supported by a complex system of steel trusses. The pyramidal roof over the shop and west end is tall enough to house a large attic area that was used for storage of equipment and parts. The roof here and attic floor are not supported by simply tying into the side walls, but by a system of heavy timbers. Both roof support systems suggest the weight of the tiles.

The 1938 construction project added a large, tall rectangular diesel wing to the east side of the original building, and a smaller one-story office space off the east wall of the repair shop. This diesel wing obscured the gabled east façade of the Powerhouse, an elevation view preserved in a historic postcard from the 1920s. Floors in the 1938 wings are concrete and walls are red brick laid in a common bond pattern, with light colored mortar. Window headers and sills are stone or cast stone. The keystone headers are veneer panels that hide the actual structural metal header. This building exhibits Classical details that include brick quoining at the corners, stone keystones above the windows and a stone beltcourse near the roofline. The windows in the diesel wing are filled with glass blocks that appear original; the windows in the smaller room addition have been changed to casements similar to the original building's. Red tile coping caps the top of the office addition's walls, while masonry coping finishes the short parapet of the larger diesel addition.

### Description: Interior

The interior rooms of the 1909 section are utilitarian in their finishes, with painted concrete floors (except for the turbine wing, which is finished with small red tiles) and painted load-bearing brick walls. During the 1920s, Waverly replaced the original turbines with three new James Leffel Co. turbines, installed in 1921, 1923, and 1927, with output of 120kw, 200kw, and 175kw, respectively.<sup>5</sup> These are vertical shaft turbines and are still in operation.<sup>6</sup> The two earliest ones are "Francis" turbines; while the 1927 is a "Propeller" type. Leffel has been in business since 1862 and is based in Springfield, Ohio. Ceilings have exposed painted beams with paneled cladding in between and hanging fluorescent lights. Some plumbing pipes are exposed and wiring in conduit runs along the wall surfaces. Walls of the 1938 diesel wing are faced with a yellow brick and the ceiling is clad in smaller panel tiles, from which hang fluorescent lights and ceiling fans. A 5-ton steel overhead lift track, for moving heavy equipment, is located at ceiling height, suspended between the north and south walls. Flooring here is also concrete with infilled sections where the large diesel units have been removed. The flood-cracked floor in the repair shop has been repaired.

#### Integrity

The essential physical features of the Powerhouse are its riverbank setting next to the dam and the upstream pond (across from which is a large city park), its red walls, and prominent red tile roof. Integrity is impaired by the window and door replacements, but is generally good otherwise. The flooding in 2008 cracked the concrete floor of the southwest shop room, but that has been repaired and generally the building withstood the waters quite well. Landscaping damage to the south side of the building has been repaired also. Details on individual aspect of integrity follow:

<sup>&</sup>lt;sup>5</sup> H.G. Thayer, Director, Waverly Light and Power, letter to Marti McCormick, November 30, 1977 (Waverly Light and Power Collection). The two original turbines might have been "S. Morgan Smith turbines originally installed about 1905." If the date is correct, these were probably the ones in the building that exploded. R.L. Rohrbaugh, Allis-Chalmers Corporation, letter to ? at Waverly Light and Power, July 1983. Waverly Light and Power Collection.

<sup>&</sup>lt;sup>6</sup> "Municipal Electric Plant in Operation Since 1904," Bremer County Independent, centennial edition, March 7, 1956.

OMB No. 1024-0018

United States Department of the Interior National Park Service

# NATIONAL REGISTER OF HISTORIC PLACES CONTINUATION SHEET

Section \_\_7\_\_ Page 3\_\_\_

Waverly	<b>Municipa</b>	<u>l H</u>	ydroelectric	Powerhouse
name of	property		•	

Bremer County, Iowa county and state

	 	24	1 11 11				4
1	) location:	the	huilding	1¢ 1n	110	original	location:
п	, iovanon.	LIIV	Dunanie	19 111	110	Uligillai	iocation.

- (2) design: the footprint, form, plan, and spatial arrangement of the overall building and its interior spaces are intact;
- (3) setting: the landscape riverbank setting is intact and the character of the neighborhood surrounding the building is essentially unchanged with the exception of the modern city hall to the north. The Powerhouse's central-place setting adjacent to the potential historic East Bremer Avenue commercial district (NRHP nomination in progress) is intact;
- (4) materials: other than the windows and doors, some of which were replaced in the recent past or due to the 2008 flood, the materials are intact;
- (5) workmanship: the components of the building's exterior are relatively intact and reflect notable workmanship, especially in the use of brick panels and corbelling, and the prominent tile roof. The loss of the historic 1909 eastside façade by the construction of the 1938 diesel wing diminishes integrity for Criterion C but not for Criterion A;
- (6) feeling: the building's ability to project an early twentieth-century aesthetic is intact;
- (7) association: the relationship of the building and to the community's electrical power needs is unbroken though it no longer fills the major role in satisfying that need.

Note on the replacement of the 1915 concrete dam next to the Powerhouse: This was undertaken following the flood of 2008 but the new dam altered the Powerhouse's setting very little since most of the time the previous historic dams have not been visible to the public. The water flow over the dam and the upstream pool created by the dam, which covers approximately 175 acres and extends for 2.4 miles, remain intact to complement the Powerhouse. Also, a number of historic dam-related components remain extant as well, including the 1913 flood gates at the west end of the dam, and the downstream millrace and concrete separation wall (dating to 1905 with later extensions). However, the fishway or fish ladder installed in 1947 at the east end of the dam was removed during construction of the new dam. Remnants of an earlier wood crib dam, thought to be submerged behind the old concrete dam at the west end, actually survived across most of the river's width and were exposed and removed during the present inflatable dam's construction. Both this earlier wooden dam and the 1915 concrete dam were documented and interpreted with a new permanent exhibit on the west side of the dam in the public park.<sup>7</sup>

Credit: This project was produced and funded under the terms of a Memorandum of Agreement, pursuant to Section 106 of the National Historic Preservation Act, among the Economic Development Administration of the U.S. Department of Commerce, the Iowa Department of Economic Development, the Iowa State Historic Preservation Officer, and the City of Waverly, Iowa. The Memorandum of Agreement relates to the demolition of the existing Waverly Dam, a property eligible for listing in the National Register of Historic Places under Criteria A and C, and its replacement by an inflatable rubber dam (Waverly Inflatable Rubber Dam Spillway Project, EDA Project No. 05-79-044806).

<sup>&</sup>lt;sup>7</sup> Information about the upstream pool and details of the new dam's construction were obtained from Mike Cherry, Waverly City Engineer, on May 17, 2013. Stanley Consultants Inc. provided the engineering and design for the new inflatable dam. Cherry and Stanley engineer Martin Weber co-authored an Internet article on the innovative new dam. See "Embracing the Cedar River," in *Public Works* (July 2012), obtained on May 8, 2013 at http://www.pwmag.com/funding-and-user-fees/embracing-the-cedar-river.aspx.

OMB No. 1024-0018

United States Department of the Interior National Park Service

# NATIONAL REGISTER OF HISTORIC PLACES CONTINUATION SHEET

Waverly Municipal Hydroelectric Powerhouse name of property

Bremer County, Iowa county and state

Section 8 Page 4

### 8. Narrative Statement of Significance

Summary Paragraph

As the oldest municipally owned hydroelectric facility still operating in the state, the Waverly Municipal Hydroelectric Powerhouse is significant under Criterion A because it uniquely represents the earliest era of Iowa's municipal hydroelectric utility development. Designed through a collaboration of a prominent regional architect, John G. Ralston of Waterloo, Iowa, and an important engineering firm specializing in hydroelectric projects, Fargo Engineering Company of Jackson, Michigan, the Powerhouse has significance under Criterion C also as the work of masters and, most especially, as a now rare property type in Iowa. The 1909 Powerhouse, with its 1938 diesel and office wings, is of local significance and its period of significance runs from 1909 when it was built and put in service to the 50-year arbitrary cut off of the National Register guidelines.

An archaeological investigation was not a part of this nomination. Additional research may identify archaeological sites that could contribute to the overall historical significance of the property.<sup>1</sup>

#### Town Founding on the Cedar River: Powering the Mills

Bremer County saw its first Euroamerican settlers as early as the 1840s, well before the region was opened for settlement by the federal government.<sup>2</sup> The real influx of new residents, however, began with the arrival the German Cretzmeyer family in 1852.<sup>3</sup> By the next year, the future Waverly townsite, located within a heavily timbered area on the Cedar's east bank, already had its first mill underway to take advantage of the river's power—a sawmill erected by William P. Harmon. Harmon, of course, had to dam the river to assure the flow and fall he needed for a commercial mill. To that end, he constructed a dam of timber cribs filled with rocks, and created a race to channel a portion of the flow through his mill structure and over his water wheel.

By 1856 or 1858 (sources differ), village residents had laced the two riverbanks together with a footbridge and a ferry that operated to transport horse-drawn wagons. Considering the erratic nature of Iowa's rainfall, there were surely intermittent opportunities to cross the river downstream from the dam on dry feet using stepping stones and gravel bars. Waverly citizens incorporated their town in 1859, and three years later, in 1861, miller Harmon constructed the Waverly Woolen Mills (later operated by G.D. Stowell). Thus, within the first decade of Waverly's founding along the Cedar River, its milling industry already was well established. By 1885, when Sanborn fire insurance maps of the town first were drawn, both sides of the river sported tall wood-frame mills and had mill races, long and short, to channel the river's power.

### Living with the River: The Threat of Floods

Like most towns situated on the banks of major Iowa rivers, Waverly's experience with the Cedar River has been a paradox of blessings and calamities. The river's potential for transportation and water power, along with the adjacent stands of timber for building and fuel, are surely what first attracted settlers and encouraged them to stop here. Yet the need to easily cross the

<sup>&</sup>lt;sup>1</sup> This paragraph was added at the request of the Iowa State Historic Preservation Office.

<sup>&</sup>lt;sup>2</sup> History of Bremer County (accessed at http://www.co.bremer.ia.us/new/history.htm on May 1, 2009), 1.

<sup>&</sup>lt;sup>3</sup> J.F. Grawe, History of Bremer County, Iowa, Vol. 1(Chicago: The S.J. Clarke Publishing Company, 1914), 268.

<sup>&</sup>lt;sup>4</sup> Ibid., 276. The 1875 Bremer County Atlas indicates the footbridge was erected in 1858.

OMB No. 1024-0018

United States Department of the Interior National Park Service

## NATIONAL REGISTER OF HISTORIC PLACES CONTINUATION SHEET

Waverly Municipal Hydroelectric Powerhouse name of property

Bremer County, Iowa county and state

Section 8 Page 5

river, something desirable for both residents and the surrounding rural neighborhood of farm families, was ever present from the town's inception in the 1850s. Without a means of crossing the river, the town's growth would be hindered and west side rural farmers might market their harvest elsewhere. Thus Bremer Avenue bridges just downstream from the dam were erected early on to connect the town's east and west sides. These bridges also were frequently washed away by the Cedar's freshets of raging waters and spring ice jams, requiring repeated expensive reconstructions, and resulting in serious disruptions to commerce and community life.

Living along the river, as generations of Waverly's residents have learned, meant contending with rapidly rising waters and spring floods that overspilled the dam, inundated homes and businesses, and washed away riverbank buildings and bridges. The first footbridge bridge was washed away in January, 1858, but an event later that same year was perhaps the town's first major flood. The flood waters rose unexpectantly during the night of July 26<sup>th</sup>, threatening the town's major industry—the mills—and many of its businesses. According to a contemporary newspaper account of the event:

Early in the morning the quiet town was startled with the cry that the river was overflowing its banks and rising rapidly. Not much rain had fallen for a few days in the town, and no one thought of a freshet, and at first the news was scarcely credited. A sight of the raging Cedar, however, confirmed all, and more. Before sunrise the water had risen nearly to the second floor in the large flouring-mill of Messrs. Harmon & Reeves. Large quantities of wheat were stored on this floor, and a crowd of willing men soon were there hurrying everything perishable and moveable to the third story and on shore. Men went in boats, or swam, as the only means of reaching the mill. Very little flour was injured, but quite a quantity of wheat got wet before it could be removed. By 8 o'clock A.M., the water was two feet deep on the second floor. Meanwhile, Mores Bros. with their cabinet shops were in trouble. Messrs. Harmon, Reeves & Ellsworth had a sawmill, lumber and logs to look after. Messrs. Carr and Neff were in a similar fix. Messrs. Brownell & Oberdorf's [west side?] mill been swept clean by the freshet of 1st and 2nd of July, hence there was but an empty mill for them to care for. At 10 A.M. the carding machine of W.P. Harmon was under water. The [commercial] houses of J.C. Hazlett, H.J. Hoffman, S. Geddes, Hopkins, Buckmaster and McClure...were in water from one to three feet deep, and by 12 o'clock, 4 feet 4 inches above the second floor in the flouring mill. At 12 o'clock, A.M., we crossed Bremer avenue in a boat, from the stone store to Hazlett's grocery. East and West Water streets [now renamed 1st Street NE and NW] were nearly submerged. Cellars were filled, wells overflowed, and many houses were in water to the windows. Damages to the amount of hundreds of dollars was experienced, and it was some time before the people could recover their equilibrium from the effects of the terrible freshets."5

In February 1871, the second bridge across the Cedar River at Waverly, built in 1860, was lost to another flood, but the town was quick to replace it with an elegant iron bowstring arch bridge by fall. That iron bridge appears to have withstood the elements better for a while, but had been replaced by 1900, when historic photographs in the Waverly Public Library collections show a deck girder bridge in its place. The new bridge resembled the plate girder railroad bridges being erected in Iowa at the turn of the century. Probably it was such a robust bridge because it carried street-car traffic in addition to horses and wagons. The bridge had riveted-plate guard rails separating the traffic from pedestrians, that latter of whom enjoyed more attractive open and lacey iron hand rails on the outside of the bridge. Today a modern concrete and steel girder bridge erected in the late 1940s spans the Cedar and carries Bremer Avenue traffic.

The fact that the growing city experienced frequent floods and damage to its homes, businesses, and infrastructure over the years is well documented through historic photographs. Similar to the nineteenth-century train wrecks that captivated early photographers, catastrophic floods that affected so many residents always prompted documentation as important historic events. But the impact of regular flooding also affected the Waverly community in long-term ways. It was the turn-of-the-

<sup>&</sup>lt;sup>5</sup> Ouoted from the Republican in the Bremer County Atlas, 1875.

<sup>&</sup>lt;sup>6</sup> Bremer County Atlas, 1875.

OMB No. 1024-0018

United States Department of the Interior National Park Service

# NATIONAL REGISTER OF HISTORIC PLACES CONTINUATION SHEET

Waverly Municipal Hydroelectric Powerhouse name of property

Bremer County, Iowa county and state

Section	0	Page	6
Section	0	Page	O

twentieth-century reluctance of the private sector to meet the river's challenges that propelled Waverly down its long road of municipal ownership of the local hydroelectric facility.

### Municipal Development of the Hydroelectric Facility

According to the March 7, 1956 centennial edition of the *Bremer County Independent*, "the story of how the electric plant came into being is an interesting bit of local history." But it is local history that fits within a larger statewide story of early municipally-supplied utilities and the determination of officials in smaller Iowa cities at the turn-of-the-twentieth century to address their remoteness from large commercial utility providers.

Once again, the story starts at the Cedar River. Prior to 1890, water rights along the Cedar through Waverly were still owned by private individuals. Water rights were valuable and claimed by the initial settlers along the river. The rights surely enhanced the value of riverbank land and probably were transferred as a part of the purchase price when the land changed hands. But dams built to take advantage of those water rights for commercial purposes also could impede navigation. And backing up a river behind the dam inundated land owned by others, rendering it useless. The potential for controversy was clear and, thus, as early as 1839 the Iowa legislature had passed laws concerning permits to create dams. In 1843, the legislators delegated the authority to regulate dams to county officials, in part because the milling industry was so active the legislators could not keep up with the requests.

The close connection between early dams and Iowa's milling industry is well established, and early milling dams were "of brush, logs, stone or a combination of these" with the crib dam being most widely used. Crib dams were built by "splicing logs end to end for the entire width of the stream. Sets of these logs were placed across the stream about two to three feet apart. Cross ties were then 'notched and pinned' to the logs, forming pens that constituted the framework of the structure. The pens were then filled with rock and clay and the process was repeated until the desirable height was reached." The dams produced during the milling heyday of the mid- to late-nineteenth century were "crude" and with the decline of the industry in the 1890s, they began to be abandoned and suffer from lack of maintenance. Milling declined for a number of reasons, but key among them was the relocation of the wheat region from Iowa toward the Dakotas and beyond. The arrival of railroads and improved technologies for harvesting, storing, and shipping grain crops also had an impact.

Electricity, which had been "a scientific curiosity for many centuries," became more practically available in the 1890s. The first major production of electricity through water turbines was in 1895, when eight turbines were installed at Niagara Falls. The development of hydropower [in Iowa] had its beginnings in the early 1900s when many of the old mill dams and mill sites were converted to generate hydroelectricity." As demand grew, a few new dams were built, but burning coal to generate steam for electricity production grew too and the coal-fueled steam process quickly outpaced the use of water turbines. The decline of existing one-time milling dams, taken out by the elements and a general lack of maintenance, coincided with the growth in demand for electricity and the advent of large commercial producers such as Waterloo's Central Iowa Light and

<sup>&</sup>lt;sup>7</sup> This was the year the first permit, given to Benjamin Nye of Muscatine County, was issued. Iowa Conservation Commission, *Iowa's Low-Head Dams: Their Past, Present, and Future Roles* (Des Moines: Iowa Conservation Commission, authorized by 2<sup>nd</sup> session of the 67<sup>th</sup> G.A., 1979), 3-4 and 3-5.

<sup>8</sup> Ibid., 3-4.

<sup>&</sup>lt;sup>9</sup> Ibid., 3-6, quoting a 1904 source.

<sup>&</sup>lt;sup>10</sup> The first dam built by miller Harmon was likely even more crude than the crib dam discovered extant but abandoned behind the 1915 concrete dam. This remnant of a second wooden dam is thought to date to the 1880s and both it and the 1915 dam are now interpreted with a riverside historical exhibit in the city park directly across from the Powerhouse. Exhibit panel text, Kohlman Park, Waverly, Iowa.

<sup>11</sup> Iowa's Low-Head Dams, 3-8.

<sup>&</sup>lt;sup>12</sup> Ibid. The turbine was invented by James B. Francis in 1840. Ibid, 3-8.

OMB No. 1024-0018

United States Department of the Interior National Park Service

## NATIONAL REGISTER OF HISTORIC PLACES CONTINUATION SHEET

Waverly Municipal Hydroelectric Powerhouse name of property

Bremer County, Iowa county and state

Section 8 Page 7

Power Company.<sup>13</sup> These producers, however, focused on serving the state's largest urban centers. Smaller cities such as Waverly were left to find their own solutions. In Waverly's case, building and maintaining its own facility was the answer, a response that proved both satisfactory and profitable but not without its own halting starts and stops.<sup>14</sup>

The decision by Waverly's elected officials to get into the hydropower business and how the city's production of electricity intertwined with its water works operation is rather well documented, though sources do not always agree on dates or the sequence of events. Generally, during the 1880s, both a local "electric plant" and the town's water works were "privately owned [by separate individuals] and operated under contract with the city." In 1890, however, the city purchased the water rights, including the dam across the Cedar River, from Clark Fairfield, operator of the Fairfield Water Works. These rights were still subject to some private interests, notably those held by Messrs. Stowell (the miller) and Tondro who operated the small electric plant that had been providing Fairfield's water works with electricity and certainly supplying their own mills. The electric plant was "antiquated" even by 1890s standards though and in 1892 Stowell and Tondro won approval to build a new plant, which went into operation in 1896. After repeated wrangling with the successor firm to Stowell and Tondro (Healy Electric Company) over repairs to the old crib dam, which the city generally ended up paying for, most sources agree that by 1904 the city had acquired unencumbered ownership of the improvements and water rights. A new era had begun. In the city had acquired unencumbered ownership of the improvements and water rights.

### The Powerhouse is Built (1909)

From 1904 until early 1908, the city, with a bit of private financing, embarked on a program of improvements to the electric light plant, including the installation of an auxiliary coal-fired steam plant to provide power during periods of low water. In September, 1908, however, that steam plant exploded and burned, igniting the nearby pump house for the city's water supply as well. "Before the ashes were even cold," one local historian wrote, "the council was committed to turning the disaster into an opportunity. Soon an attractive and functional brick building replaced the rubble." That "attractive" brick building is the extant red-tile roofed building that still houses working turbines and provides the city with a limited amount of its energy needs even today. Completed and put into service in 1909, full plans for the Powerhouse have not been located but contemporary newspaper articles named John G. Ralston as its architect, and partial plans in the possession of the City of Waverly (consisting of several individual blue print detail sheets for the turbine wing) are labeled with the name Fargo Engineering Company. The latter was the firm of William G. Fargo, a civil engineer with a wide-spread reputation for specializing in hydroelectric projects. Though the exact nature of the collaboration is unknown, it seems likely that Ralston focused on the design of the building itself, while Fargo handled the technical end of the plant's construction, especially the plan for the turbine wing. Similarities of the Waverly building to powerhouses firmly attributed to Fargo suggest that the collaboration may have extended to the aesthetics of the Waverly project as well.

Architect John Glen Ralston (1870-1956) was born in Vinton, in eastern Iowa, and became an architect by apprenticing with a practicing builder-architect and through correspondence courses. In 1897, Ralston moved to Waterloo, another Cedar River city just 20 miles downriver from Waverly. By 1901, Ralston was working as an architect with William F. Murphy, and after Murphy's death in 1904, as a sole practitioner specializing in schools and institutional buildings. Ralston designed Waverly's new public library in 1904 (extant but obscured by modern modifications and used for other purposes), and therefore local officials would have been familiar with Ralston's work when the town's power plant exploded and burned in 1908. In the

<sup>&</sup>lt;sup>13</sup> Ibid., 3-9 to 3-10.

<sup>&</sup>lt;sup>14</sup> The profitability of Waverly's electrical production is documented in David Walter Fredrick, "A Rationale for Municipal Electric Power Generation" (Unpubl. M.A. thesis, Clark University [Worchester, Mass.], n.d. but ca. 1967). This is a case study of Waverly's experience written by a native son. <sup>15</sup> *Reflections of our Past*, 1904-1994 (Waverly: Waverly Light and Power, 1994), 2.

<sup>&</sup>lt;sup>16</sup> Ibid., 2-3; J.F. Grawe, History of Bremer County, Iowa, vol. I (Chicago: The S.J. Clarke Publishing Company, 1914), 70, 282.

<sup>&</sup>lt;sup>17</sup> Reflections, 5.

OMB No. 1024-0018

United States Department of the Interior National Park Service

## NATIONAL REGISTER OF HISTORIC PLACES CONTINUATION SHEET

Waverly Municipal Hydroelectric Powerhouse name of property

Bremer County, Iowa county and state

Section 8 Page 8

four years between Murphy's death and the Waverly explosion, Ralston had successfully designed several significant Iowa buildings, including Sac City's grade school in 1904; Waterloo's two Carnegie libraries, both in 1906, one on either side of the Cedar River; and in the same city, Emerson School in 1906. The next year, 1907, found Ralston completing the Waterloo Loan and Trust Company building and Waterloo's Fire Station No. 2. The two libraries, the fire station, and Emerson School were all nominated to the National Register in the 1980s.<sup>18</sup>

Fargo Engineering Company, based in Jackson, Michigan, was founded by William G. Fargo, "a pioneer in hydroelectric engineering." From 1900 until his retirement in 1925, "Fargo and his company provided civil engineering design and construction supervision services in connection with power plants and railways..." Fargo had numerous projects and links to Iowa, such as providing "design, construction and consulting services for other Midwestern power syndicates, including...the Iowa Railway and Light Company of Cedar Rapids [further down the Cedar River about 50 to 60 miles]." Fargo and his company also worked on power plants in Waterloo and in Nashua, Iowa, both near Waverly. Fargo Engineering Company records at the University of Michigan archives also mention his work in Monticello, Decorah, and Anamosa, all eastern Iowa communities. No mention of the Waverly Powerhouse appears in the collection's inventory, however, and a search of the collection by the archivist likewise turned up nothing on the Waverly Powerhouse.<sup>19</sup>

William G. Fargo's work has been deemed important to civil engineering and some of his projects have been recorded in the federal government's Historic American Engineering Record [HAER] program and housed in the Library of Congress. One HAER-documented powerhouse on the Muskegon River near Croton, Michigan shares many aesthetic characteristics with the 1909 Waverly building. On the exterior, both have very low-pitched roof slopes covered by terra cotta tiles, walls with decorative brickwork, and Classical or Renaissance Revival style details. The original east façade of the Waverly Powerhouse (visible before the 1938 diesel wing was added) included a prominent oculus window at the gable peak, while the Croton plant has a Palladian window at that location. Both interiors are covered by a complex, riveted-steel roofing structure on which the tiles sat directly. The turbine wing interiors of the two buildings are remarkably similar as well.

During the 1920s, Waverly replaced the original turbines with three new James Leffel Co. turbines, installed in 1921, 1923, and 1927, with output of 120kw, 200kw, and 175kw, respectively.<sup>20</sup> These are vertical shaft turbines and are still in operation.<sup>21</sup> The two earliest units are "Francis" turbines, while the 1927 unit is a "Propeller" type. Leffel has been in business since 1862 and is based in Springfield, Ohio.<sup>22</sup> Because the exact role of Fargo Engineering is unknown, the firm may have been involved in the replacement of the turbines in the 1920s also. By the 1930s, the water power provided by the Cedar River simply could not supply the community and the city prepared to augment it with diesel power.

### Diesel Wing and Office Addition (1938)

Despite the addition of the third new turbine unit in 1927, the city's demand for electricity outpaced what the facility could produce and officials were forced to fill the need through a contract with Iowa Public Service Co., not the first time that had happened.<sup>23</sup> By the late 1930s, the city decided to augment its own power plant by adding a large wing and installing three

<sup>&</sup>lt;sup>18</sup> Iowa State Historic Preservation Office architectural database, obtained January 9, 2013. Biographical information is contained in Wesley I. Shank, *Iowa's Historic Architects* (Iowa City: University of Iowa Press, 1999), at 134-136.

<sup>&</sup>lt;sup>19</sup> Michigan Historical Collections, Bentley Historical Library, University of Michigan, Finding Aid for Fargo Engineering Company records, 1897-1951 (obtained online on June 18, 2009 at http://guod.lib.umich.edu/).

<sup>(</sup>obtained online on June 18, 2009 at http:quod.lib.umich.edu/).

<sup>20</sup> H.G. Thayer, Director, Waverly Light and Power, letter to Marti McCormick, November 30, 1977 (Waverly Light and Power Collection). Waverly Light and Power Collection.

<sup>&</sup>lt;sup>21</sup> "Municipal Electric Plant in Operation Since 1904," Bremer County Independent, Centennial Edition, March 7, 1956.

<sup>&</sup>lt;sup>22</sup> The James Leffel & Co., Manufacturers of Hydraulic Turbines (obtained on June 17, 2009 at http://www.leffelcompany.com/)

<sup>&</sup>lt;sup>23</sup> "Municipal Electric Plant in Operation Since 1904."

## NATIONAL REGISTER OF HISTORIC PLACES CONTINUATION SHEET

Waverly Municipal Hydroelectric Powerhouse name of property

Bremer County, Iowa county and state

Section 8 Page 9

diesel electric generating units. The contract for both the building and the units was awarded to the Worthington Pump and Machinery Corporation in 1937, and the new units were put into service in 1938.<sup>24</sup> In appearance, the new addition was sympathetic to the 1909 building. It employed red brick walls and was detailed with cast stone or stone trim consisting of faux quoins (both brick and stone in different places) and keystones on flat lintels. Tall windows filled with glass block, a building material popular in the 1930s for industrial facilities, let in sunlight. Yellow brick interior walls helped keep the interior brighter. Closing off the original east façade windows, however, likely prompted the addition of new windows in the blank west wall (seen in an early postcard view of this elevation) of the original structure to compensate for the loss of interior light. At some point, pumps to draw from the deep wells under the original building were installed in the large room between the turbine wing near the dam and the new diesel addition. These are nonextant today, as are the diesel units. During the second half of the twentieth century, the city moved away from relying solely on its downtown dam and power plant, building two new power-generating facilities on the west side of town, north of the dam.<sup>25</sup>

### Hydroelectric Plants in Iowa

A 1979 statewide study of Iowa's low-head dams found only five hydroelectric dams and generating plants operating on interior streams and rivers, located at Maquoketa, Iowa Falls, Amana, Ottumwa, and Waverly (Table 1). The first two were commercially owned; the latter three were owned by the local governments. All of these facilities were east of Des Moines. Only Iowa Falls and Waverly were located farther than about 50 miles upriver from the Mississippi River, suggesting the operating flow and fall necessary to sustain a hydroelectric facility is generally unavailable on all but the state's largest rivers. By 2007, the Iowa Department of Natural Resources indicated Amana had dropped (or was dropped) from this list of active hydroelectric facilities, while Anamosa and Cedar Rapids had been added (Table 2). By 2013, one more plant, in Bettendorf, had been added to the list.

Table 1. Hydroelectric Dams & Generating Plants on Interior Waterways in 1979 Location River Ownership Year Capacity Built Amana lowa **Amana Colonies** 300kw, 1 unit Iowa Falls Iowa Iowa Electric Light & 1925 540kw, 1 unit Power (Cedar Rapids) Maquoketa Maquoketa Iowa Electric Light & 1923 1200kw, 2 units Power (Cedar Rapids) Ottumwa Des Moines City of Ottumwa 3,000kw, 3 units 1931 Waverly Cedar City of Waverly 1913\*\* 495kw, 3 units

<sup>\*</sup>The Amana Race is seven miles long and was dug between 1865 and 1869. The extant diversion dam is concrete and therefore probably of 20<sup>th</sup> century construction (American Canal Society Canal Index for "Amana Mill Race" obtained at www.americancaanals.org on June 21, 2009). The Amana facility would seem quite different, technically, from dams across rivers and their associated powerhouses. SOURCE: Iowa's Low-Head Dams, 4-22.

<sup>\*\*</sup>The powerhouse was built in 1908, the dam in 1915.

<sup>&</sup>lt;sup>24</sup> Ibid.

<sup>&</sup>lt;sup>25</sup> Ibid., 13-15.

<sup>&</sup>lt;sup>26</sup> See generally Jan Olive Nash and Jennifer A. Harris, "Ottumwa Hydro Plant & Dam Relicensing: Intensive Level Historical/Architectural Survey" (unpubl. report to the Ottumwa Water and Hydro trustees, May 2007), 44. Copy available at the office of the Iowa SHPO.

## NATIONAL REGISTER OF HISTORIC PLACES CONTINUATION SHEET

Waverly Municipal Hydroelectric Powerhouse name of property

Bremer County, Iowa county and state

Section	8	Page	10	

Table 2. Hydropower Plants on Interior Waterways in 2013

Table 2. Hydropower Plants on Interior Waterways in 2013						
Location	River	Ownership	Year Built	Capacity		
Anamosa	Wapsipinicon	Alliant Energy	1912	250kw		
Cedar Rapids	Cedar	City of Cedar	1975, 1985	2,100kw		
		Rapids				
Iowa Falls	lowa	Alliant Energy	1925	540kw		
Maquoketa	Maquoketa	Alliant Energy	1923	1,200kw		
Mitchell County	Cedar	Mitchell Mills	1920s	600kw		
Ottumwa	Des Moines	City of Ottumwa	1931	3,250kw		
Waverly	Cedar	City of Waverly	1913*	495kw		
Bettendorf	Mississippi	White Hydropower	Not listed	600kw		

<sup>\*</sup>Actually, the powerhouse was built in 1909 and the dam in 1915. This 1913 date is incorrect on the website. SOURCE: Iowa DNR Energy: Renewable Energy, Hydropower (http:///www.iowadnr.gov/energy/renewable/hydro.html on April 29, 2007); Roy Hesemann, Mgr. Cedar Rapids Water Treatment Plant, verbal communication, April 30, 2007. Updated information on Bettendorf was obtained at http://energy.nstl.gov.cn/MirrorResources/5220/hydro.html, obtained on May 20, 2013.

Reading the two tables together illustrates the salient facts about the historic importance of hydroelectric power generation in Iowa. While water power served a tremendously important role in the settlement era, providing direct power for the belts that turned the machinery of early industries and the stones that ground the corn and wheat produced by early farmers, the state has not much relied on hydroelectric power. Its rivers simply were too erratic in seasonal flow and coal too available once the railroad systems were developed across the state and nation. Further, municipal ownership of hydroelectric plants in Iowa is unusual, and while there were probably many more interior cities operating their own plants early in the twentieth century, the number of cities owning and operating historic hydroelectric plants today is down to two—Ottumwa and Waverly—each representing very different historical, if not technological, eras. Waverly's plant is the oldest municipally owned hydroelectric facility still operating in the state and represents the earliest era of Iowa's municipal hydroelectric utility development.

### Recent Developments and Future Plans

Following the great flooding of 2008, the historic 1915 concrete dam was replaced by an inflatable dam. Construction proceeded first on the east half using a cofferdam, and then the west half was completed. Construction began in late 2010 and was finished about a year later. Since the record 2008 flooding, the damage to the Powerhouse and its surrounding landscaping has been repaired also. Because there was federal funding involved in the project, this nomination was included as part of the mitigation for the loss of the dam historically associated with the Powerhouse and was sponsored by the Economic Development Administration. The Powerhouse continues in its role of providing part of the City's electric needs.

The Powerhouse is located within the proposed boundaries of the Waverly eastside commercial historic district, another flood-related National Register project currently in-progress and expected to be completed within the current year.

United States Department of the Interior National Park Service

# NATIONAL REGISTER OF HISTORIC PLACES CONTINUATION SHEET

Waverly Municipal Hydroelectric Powerhouse name of property

Bremer County, Iowa county and state

Section	9	Page	11

### 9. Major Bibliographic References

"Bad Waverly Fire." The Clarksville Star, September 24, 1908.

Bremer County Atlas, 1875. Collection of the Waverly Public Library.

Bremer County Historical Society Photograph Collection.

Bremer County History Book Committee. Bremer County History. Dallas: Taylor Publishing Company, 1985.

Bremer County Independent, June 15, 1905; October 9, 1946; April 9, 1947; October 9, 1984. Collection of the Waverly Public Library.

Fargo Engineering Records, 1897-1951. Michigan Historical Collections, Bentley Historical Library, University of Michigan. Accessed at http://quod.lib.umich.edu/ on June 18, 2009. Follow up emails and telephone calls, multiple dates, 2012.

Fish, F.A., and H.W. Wagner. *Electric Central Station Operation in Iowa*. Bulletin 38. Engineering Experiment Station. Ames: Iowa State College of Agriculture and Mechanical Arts, 1914.

Fredrick, David Walter. "A Rationale for Municipal Power Generation." M.A. thesis in Economics, Clark University [Worchester, Mass.], n.d. but ca. 1967.

Grahame, Russell C. Collection of Public Utilities (Iowa) records, correspondence, water plant questionnaires, 1928-29. State Historical Society of Iowa, Iowa City.

Grawe, J. F. History of Bremer County, Iowa. Volume 1. Chicago: The S.J. Clarke Publishing Company, 1914.

History of Bremer County, Accessed at http://www.co.bremer.ia.us/new/history.htm on May 1, 2009.

History of Butler and Bremer Counties, Iowa, 1883. Collection of the Waverly Public Library.

History of Waverly Dam. Timeline, 1853-2001, compiled by the Waverly Public Library.

Hyde, Charles K. Croton Hydroelectric Plant, Powerhouse. Historic American Engineering Record [HAER No. MI-81-B], 1994. Accessed at http://memory.loc.gov/ on June 18, 2009.

The James Leffel & Co., Manufacturers of Hydraulic Turbines. Accessed at http://www.leffelcompany.com/home.htm on June 17, 2009.

"Municipal Electric Plant In Operation Since 1904." Bremer County Independent, Centennial Edition, March 7, 1956.

Mutel, Cornelia F. "Water-Powered Mills in Iowa: A Forsaken Technology." In *Iowa Heritage Illustrated* 77(Winter 1996)4: 157-171.

# NATIONAL REGISTER OF HISTORIC PLACES CONTINUATION SHEET

Waverly Municipal Hydroelectric Powerhouse name of property

Bremer County, Iowa county and state

Section <u>9</u>	Page <u>12</u>		

Nash, Jan Olive [now Jan Olive Full]. "Shell Rock Bridge: Architectural/Historical Intensive Level Survey of the Adjacent Buildings." Unpubl. report prepared for Calhoun-Burns and Associates and the City of Shell Rock, April 2009.

\_\_\_\_\_. "Waverly Municipal Hydroelectric Powerhouse & Dam." Unpubl. report prepared for the City of Waverly, June 2009.

Postcard collection of the author, Waverly scenes.

Prior, Jean C. Landforms of Iowa. Iowa City: University of Iowa Press, 1991.

Ralston, John G., Records. Architect Search in Iowa State Historic Preservation Office architectural database, obtained January 9, 2013.

Records, correspondence, and plan sheets, undated and 1917-1990. Collection of Waverly Light and Power.

Reflections of Our Past. Waverly: Waverly Light and Power, 1994.

Sanborn Map Co., fire insurance maps of Waverly, 1885, 1892, 1897, 1905, 1915, 1927, 1927-46.

Shank, Wesley I., Iowa's Historic Architects. Iowa City: University of Iowa Press, 1999.

Site Inspection and photography, by the author. May 4, 2009.

State Historic Preservation Office, Iowa Site Inventory Forms, site number 09-00092 and 09-00093, filed in 1989.

Waverly Democrat, January 31, 1913; August 7 and 21, 1913; September 4 and 25, 1913; October 23, 1913; January 21, 1915; April 7, 1933; August 18, 1933; August 18, 1944; January 11 and 25, 1946; February 1 and 13, 1946; March 8 and 1, 1946; May 22, 1946; May 19, 1966; June 2, 1988; September 27, 1988. Collection of the Waverly Public Library.

Waverly Journal, November 9, 1944. Collection of the Waverly Public Library.

Waverly Public Library Photograph Collection.

Waverly Republic, February 19, 1857. Collection of the Waverly Public Library.

Waverly: Rich in Heritage. Volume I. Marceline, MO: Heritage House Publishing, 1996.

NPS Form	10-900-a
(8-86)	

OMB No. 1024-0018

United States Department of the Interior National Park Service

# NATIONAL REGISTER OF HISTORIC PLACES CONTINUATION SHEET

Waverly Municipal Hydroelectric Powerhouse name of property

Bremer County, Iowa	_
county and state	

Section	10	Page	13

#### 10. Geographical Data

### **Verbal Boundary Description**

The nomination includes the publically-owned parcel of riverside land fully occupied by the building's footprint. This irregular parcel is located in Block F.B. 2 of the Waverly Original Town plat. The building is bordered on the north by a paved parking lot used by municipal vehicles; on the east by 1<sup>st</sup> Street Northeast; on the south by a drainage swale that has been landscaped since 2008 with young specimen trees, a winding paved sidewalk, and boulders; and on the west by the Cedar River and the downstream tail race channel. None of these adjacent features are included in the nomination.

### **Boundary Justification**

The boundary is the entire land parcel historically associated with the building.

United States Department of the Interior National Park Service

# NATIONAL REGISTER OF HISTORIC PLACES CONTINUATION SHEET

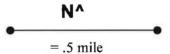
Section Additional Documentation Page 14

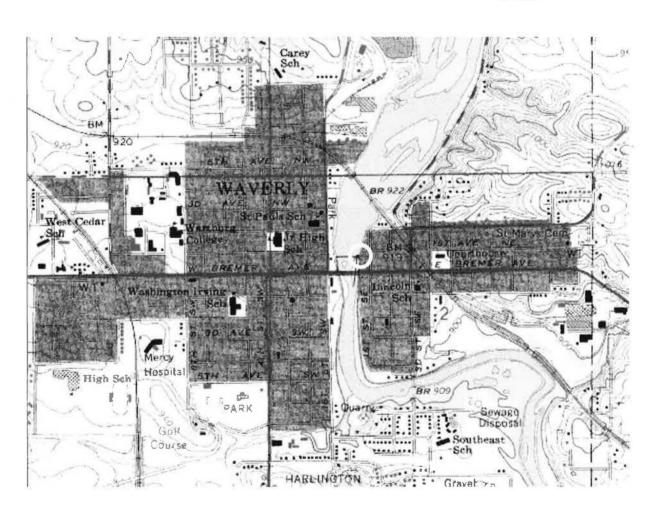
Waverly Municipal Hydroelectric Powerhouse name of property

Bremer County, Iowa county and state

Location of the property in central Waverly, lowa.

Source: http://ortho.gis.iastate.edu/ on May 7, 2013





# NATIONAL REGISTER OF HISTORIC PLACES CONTINUATION SHEET

Waverly Municipal Hydroelectric Powerhouse name of property

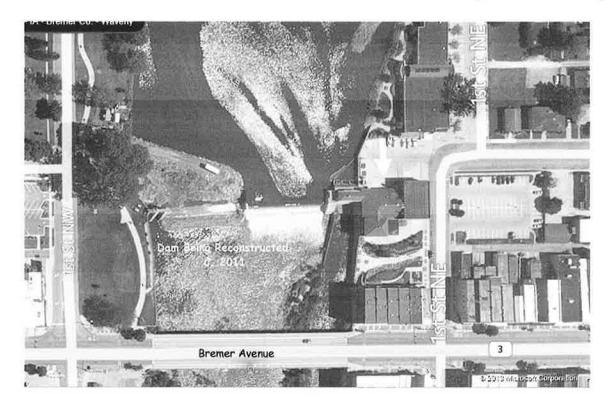
Bremer County, Iowa county and state

Section	Additional Documentation	Page	15

Site Plan - Aerial Photo (Source: Bing.com on May 7, 2013)

N^ no scale

The nominated Powerhouse on the east bank of the Cedar River in central Waverly, Iowa is marked by an arrow.



At the time of this photograph, the 1915 concrete dam was being replaced with a new inflatable dam. The east half had already been replaced; the west half of the dam project was still in progress. The new dam was prompted by the extreme flooding in 2008 in central Waverly (see the last photograph of this section).

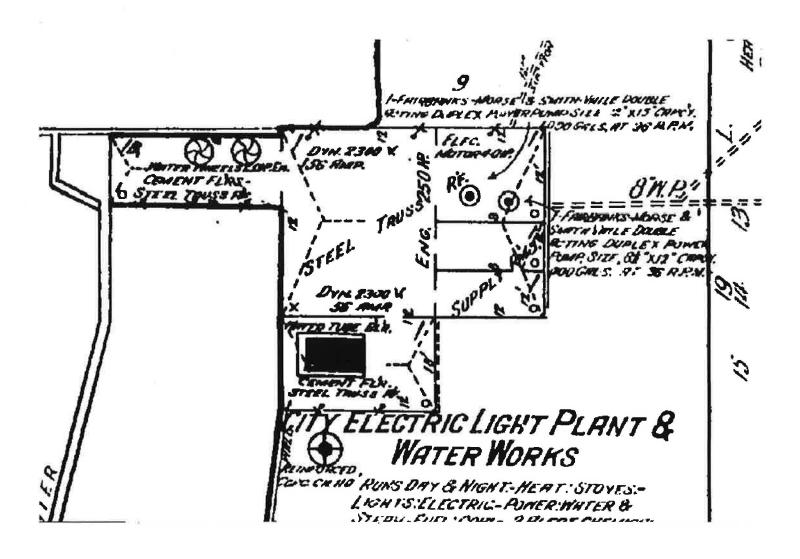
# NATIONAL REGISTER OF HISTORIC PLACES CONTINUATION SHEET

Waverly Municipal Hydroelectric Powerhouse name of property

Bremer County, Iowa county and state

Section Additional Documentation Page 16

Floor plan as built, 1909 (Source: Sanborn fire insurance map, 1915) N^ (no scale)



### NATIONAL REGISTER OF HISTORIC PLACES **CONTINUATION SHEET**

Waverly Municipal Hydroelectric Powerhouse name of property

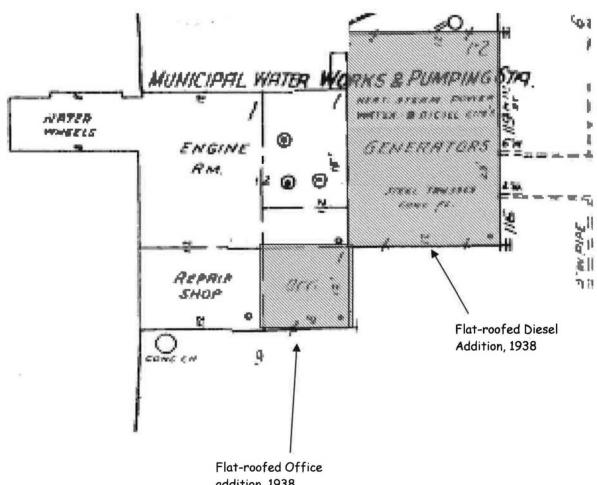
Bremer County, Iowa county and state

Section Additional Documentation Page \_\_17\_

### Floor plan -original construction from 1909 with 1938 additions shaded

(Source: Sanborn fire insurance map, updated to 1946)

N^ (no scale)



addition, 1938

# NATIONAL REGISTER OF HISTORIC PLACES CONTINUATION SHEET

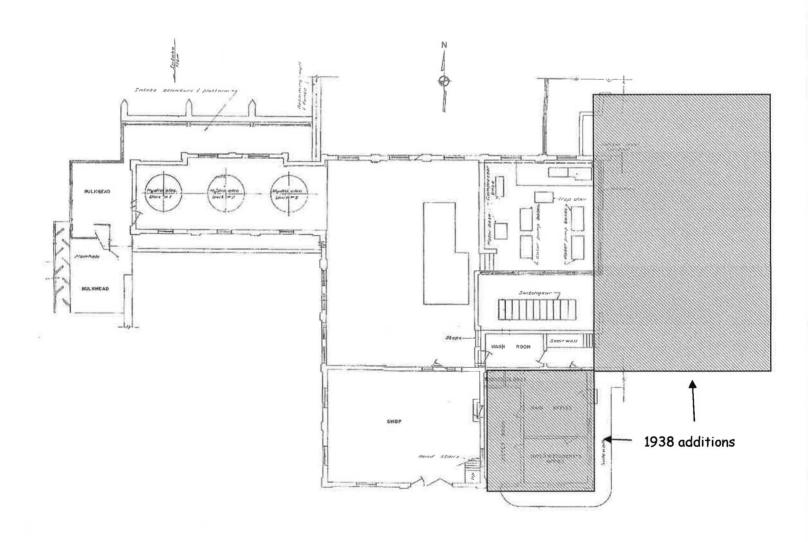
Waverly Municipal Hydroelectric Powerhouse name of property

Bremer County, Iowa county and state

Section Additional Documentation Page 18

### Floor plan - current (Source: Waverly Light and Power, c. 2009)

N^ (no scale)



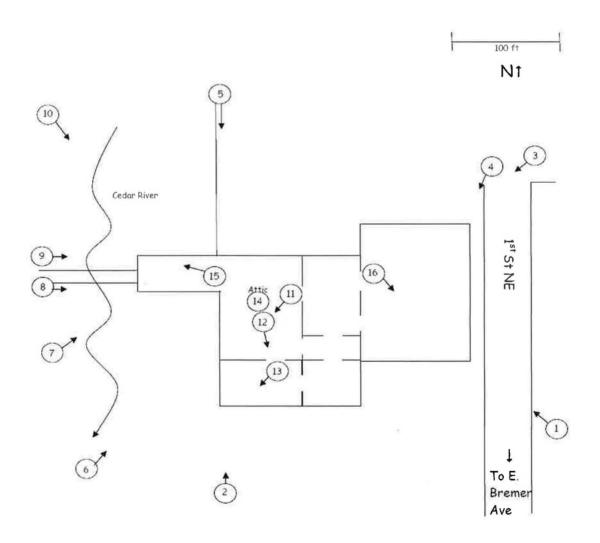
# NATIONAL REGISTER OF HISTORIC PLACES CONTINUATION SHEET

Waverly Municipal Hydroelectric Powerhouse name of property

Bremer County, Iowa county and state

Section Additional Documentation Page 19

### **PHOTOGRAPH LOCATIONS**



# NATIONAL REGISTER OF HISTORIC PLACES CONTINUATION SHEET

Waverly Municipal Hydroelectric Powerhouse name of property

Bremer County, Iowa county and state

N 41	Additional Description	D	00
Section	Additional Documentation	Page	20

### PHOTOGRAPH LABEL INFORMATION (items 1, 2, and 6-7 also written on the back of prints)

- 1. Waverly Municipal Hydroelectric Powerhouse
- 2. Bremer County, Iowa
- 3. Tallgrass Historians L.C.
- 4. April, 2009 (interiors), 2013 (exteriors)
- 5. N/A (digital photographs)
- 6.-7. Photo view # and direction camera is facing
  - 1. Exterior, looking NW
  - 2. Exterior turbine wing (I) and shop (r), looking N
  - 3. Exterior diesel wing, looking SW
  - 4. Exterior diesel wing and turbine wing, looking SW
  - 5. Exterior engine room, turbine wing, and head gates, looking S
  - 6. Landscape, dam and Powerhouse [from Bremer Avenue bridge], looking NE
  - 7. Landscape, dam and Powerhouse [from west bank], looking NE
  - 8. Exhibit on historic dams with Powerhouse beyond, looking E
  - 9. Powerhouse, looking E
  - 10. Upstream pool with Powerhouse and downtown buildings beyond, looking ESE
  - 11. Interior former engine room, looking SW
  - 12. Interior former engine room, looking S toward repair shop
  - 13. Interior repair shop, looking SW
  - 14. Interior, peak of engine room roof, looking up
  - 15. Interior turbine wing and hydroelectric generators, looking W
  - 16. Interior diesel wing, looking SE

# NATIONAL REGISTER OF HISTORIC PLACES CONTINUATION SHEET

Waverly Municipal Hydroelectric Powerhouse name of property

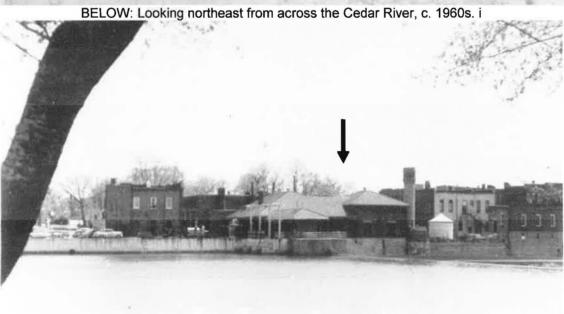
Bremer County, Iowa county and state

Section	Additional Documentation	Page	21
COCHOIL	ridditional Doddiniontation		

ADDITIONAL PHOTOGRAPHS - UNLESS OTHERWISE NOTED, ALL HISTORIC PHOTOS COURTESY CITY OF WAVERLY -- PUBLIC LIBRARY AND/OR MUNICIPAL UTILITIES OFFICE

Looking northeast from across the Cedar River: top view circa 1880. William Harmon's tall mill is clearly visible here, at the foot of the Bremer Avenue bridge, as is G.D. Stowell's feed mill on the far left. Stowell eventually acquired and operated Harmon's mill too. The iron bridge was erected in the fall of 1871.





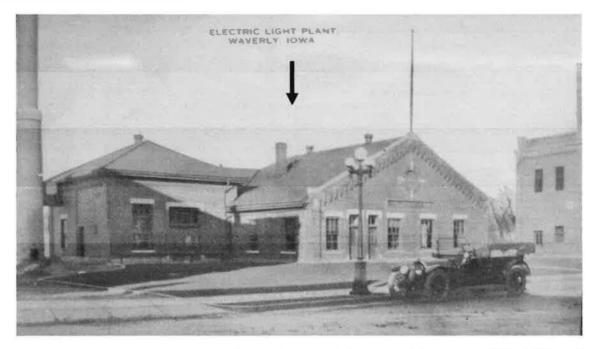
# NATIONAL REGISTER OF HISTORIC PLACES CONTINUATION SHEET

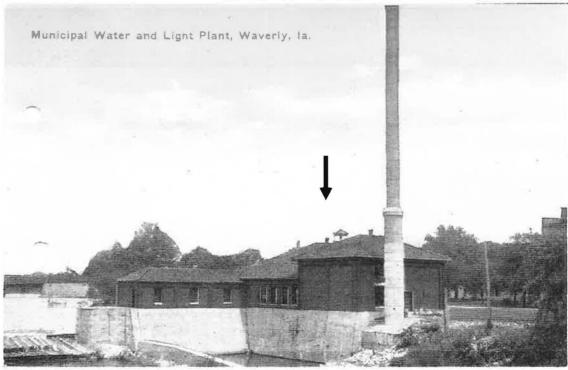
Waverly Municipal Hydroelectric Powerhouse name of property

Bremer County, Iowa county and state

Section Additional Documentation Page 22	<b>~</b>	A 1 100 1 15 1 10	-	-
	Section	Additional Documentation	Page	22

Postcard views of powerhouse before 1938 wings were added, both circa 1912-1914. The tall smokestack seen in the bottom view was rebuilt and/or shortened sometime before 1961 and is nonextant today. Compare the top view with the Croton, Michigan powerhouse on page 25.





# NATIONAL REGISTER OF HISTORIC PLACES CONTINUATION SHEET

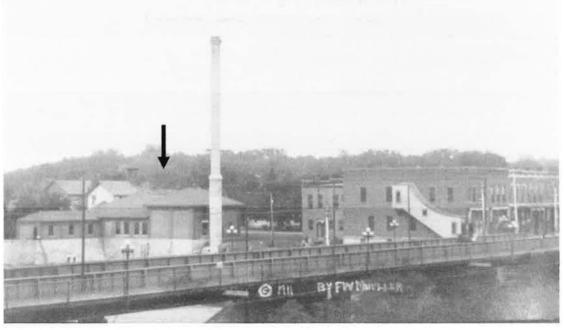
Waverly Municipal Hydroelectric Powerhouse name of property

Bremer County, Iowa county and state

Section Additional Documentation Page 23

The top view of the old timber dam dates between 1909 when the powerhouse was built and 1911 when the wood-frame city hall (with belfry) was replaced with a brick building. Present city hall sits on approximately the same site today. The bottom view, dated 1911, shows the close proximity of the powerhouse to the eastside downtown shops.





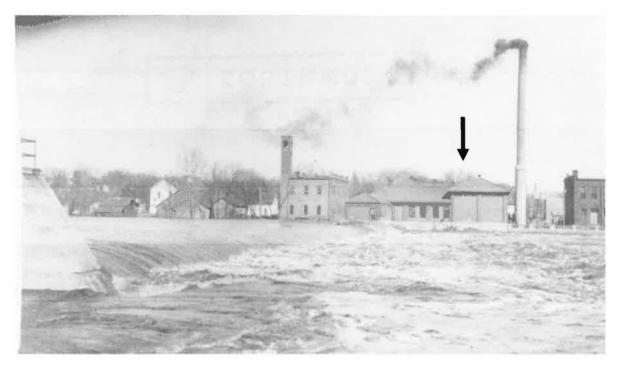
# NATIONAL REGISTER OF HISTORIC PLACES CONTINUATION SHEET

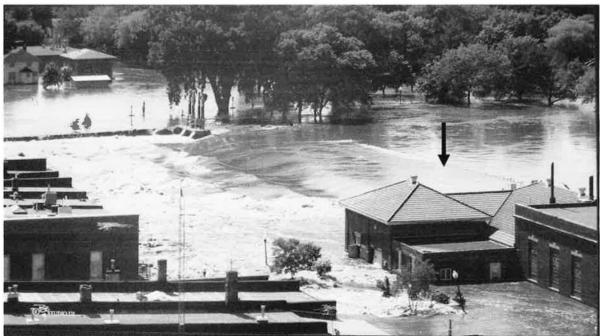
Waverly Municipal Hydroelectric Powerhouse name of property

Bremer County, Iowa county and state

Section	Additional Documentation	Page	24

High water and flooding on the Cedar River has been an ever present threat for the city. The top view is undated but may represent the flood of 1925; the bottom view records the historic flood of 2008 (which swamped the powerhouse and eventually prompted this nomination).





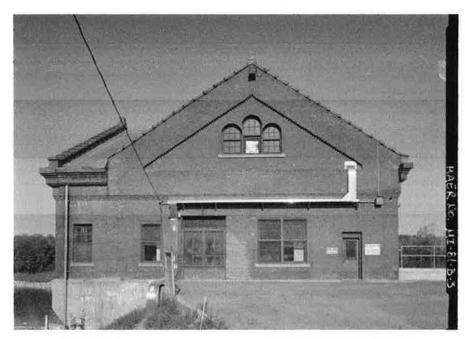
# NATIONAL REGISTER OF HISTORIC PLACES CONTINUATION SHEET

Waverly Municipal Hydroelectric Powerhouse name of property

Bremer County, Iowa county and state

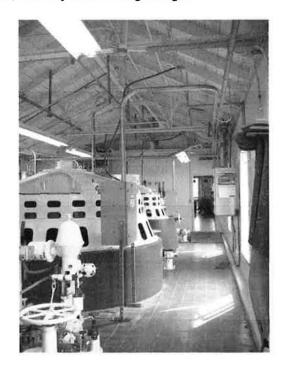
Section Additional Documentation Page 25

Croton, Michigan powerhouse designed by William G. Fargo in 1906-08. The HAER narrative on it indicates Fargo "specialized in the design of small and mid-sized hydroelectric plants in the Midwest in the early Twentieth Century." It was modified in 1915 to accommodate two new generators. The original terra cotta roof tiles have been replaced by a metal roof. *Croton Hydroelectric Plant, Powerhouse, HAER No. MI-81-B, p. 2* 



BELOW: Croton interior on left; Waverly turbine wing on right.





Waverly Municipal Hydroelectric Powerhouse

United States Department of the Interior National Park Service

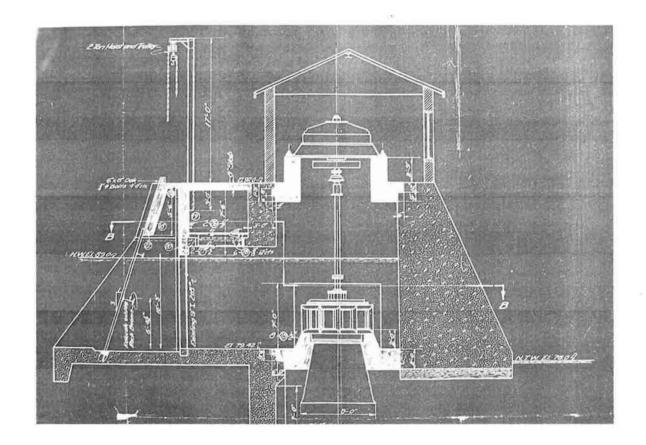
# NATIONAL REGISTER OF HISTORIC PLACES CONTINUATION SHEET

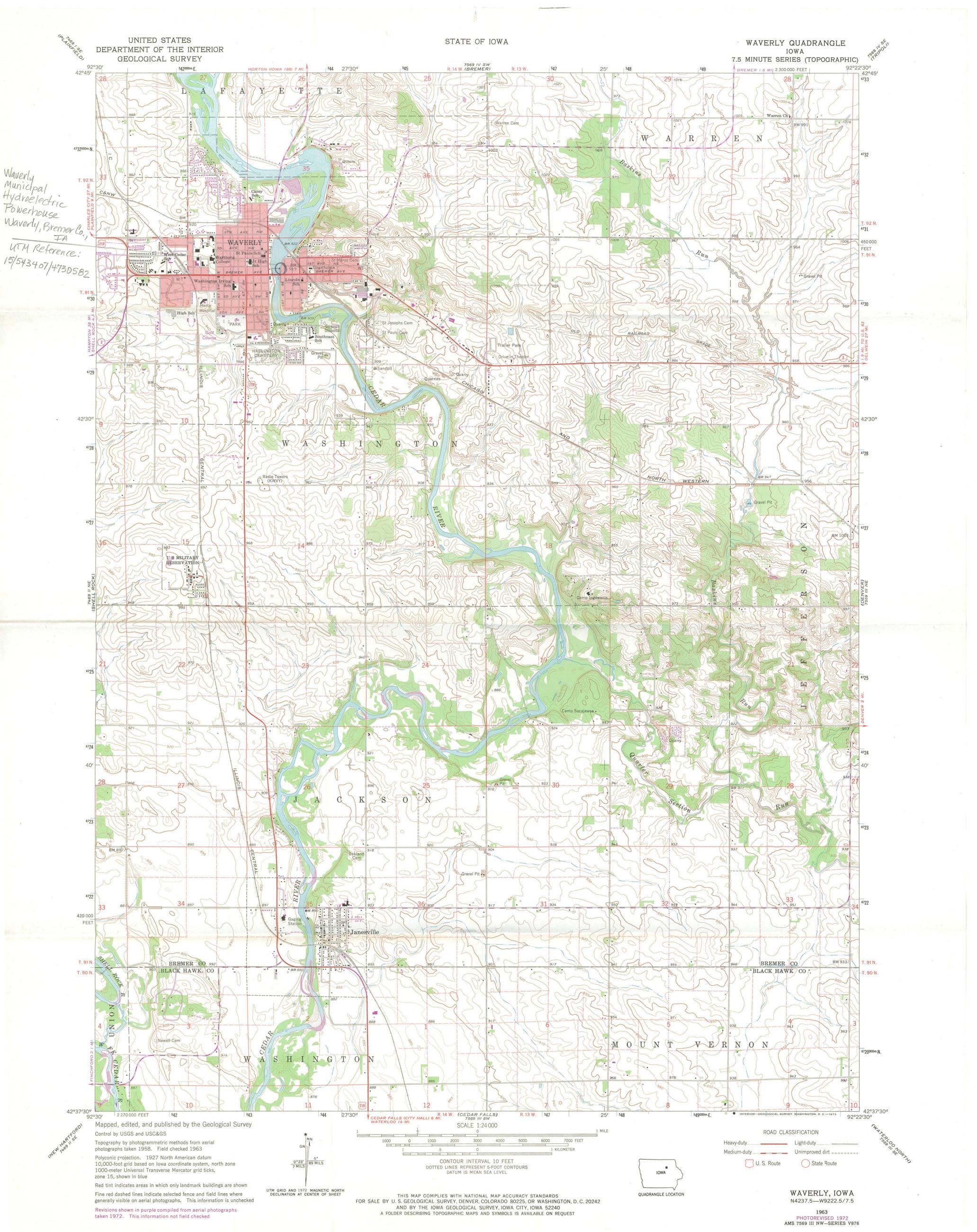
name of property

Bremer County, Iowa county and state

Section	Additional Documentation	Page	26

This cross-section shows a vertical shaft turbine unit positioned atop a concrete foundation, Waverly Powerhouse. Water flows from left to right in this plan. As built, this view would be facing east. Though not dated or attributed, the blueprint format and handwriting style is the same as other plan sheets that are labeled "Fargo Engineering Company." The turbine represented by this plan sheet was replaced in the 1920s. Waverly Light and Power Collection





































## UNITED STATES DEPARTMENT OF THE INTERIOR NATIONAL PARK SERVICE

## NATIONAL REGISTER OF HISTORIC PLACES EVALUATION/RETURN SHEET

REQUESTED ACTION: NOMINATION	
PROPERTY Waverly Municipal H	ydroelectric Powerhouse
MULTIPLE NAME:	
STATE & COUNTY: IOWA, Bremer	
DATE RECEIVED: 11/01/13 DATE OF 16TH DAY: 12/10/13 DATE OF WEEKLY LIST:	DATE OF PENDING LIST: 11/25/13 DATE OF 45TH DAY: 12/18/13
REFERENCE NUMBER: 13000923	
REASONS FOR REVIEW:	
OTHER: N PDIL: N P	ANDSCAPE: N LESS THAN 50 YEARS: N ERIOD: N PROGRAM UNAPPROVED: N LR DRAFT: N NATIONAL: N
COMMENT WAIVER: N	
✓ACCEPTRETURNR	EJECT <u>12.19.13</u> DATE
ABSTRACT/SUMMARY COMMENTS:	
Entered in The Hational Register of	
Historic Places	
RECOM./CRITERIA	
REVIEWER	DISCIPLINE
TELEPHONE	DATE
<del>_</del>	ments Y/N see attached SLR Y/N
If a nomination is returned to the nominating authority, the nomination is no longer under consideration by the NPS.	

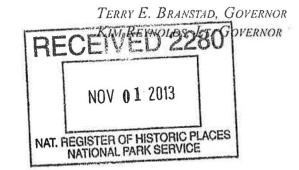
## **CLG NATIONAL REGISTER REVIEW**

CLG Name Waverly Date of Public Meeting **Property Name** Wayerly Municipal Hydroelectic Powerhouse, 121 1st Street NE, Wayerly, Bremer County 1. For Historic Preservation Commission: Kecommendation of National Register eligibility ☐ Recommendation of National Register ineligibility Waverly Historic Preservation Commission Reason(s) for recommendation: Humersing the Power of the Cedar Rever helpcel clevelose the town and became important to the Recommendation of National Register eligibility ☐ Recommendation of National Register ineligibility Date Bob Brunkhovet Mayce of WAUERLY Reason(s) for recommendation: 3. Professional Evaluation: 園、Recommendation of National Register eligibility Recommendation of National Register Ineligibility 10/10/13 Signature

**RETURN TO:** State Historical Society of Iowa, ATTN: National Register Coordinator, 600 E. Locust, Des Moines, IA 50319

Reason(s) for recommendation:







SUSAN KLOEWER ADMINISTRATOR



October 31, 2013

Carol Shull, Chief National Park Service National Register of Historic Places 1201 Eye Street, N.W.-- 8th Floor Washington, D.C. 20005

Dear Ms. Shull:

The following National Register nomination(s) are enclosed for your review and listed if acceptable.

- Waterloo Masonic Temple, Waterloo, Black Hawk County, Iowa
- Bethel African Methodist Episcopal Church, Cedar Rapids, Linn County, Iowa
- Waverly Municipal Hydroelectric Powerhouse, Waverly, Bremer County, Iowa
- Sexton Hotel, Stuart, Guthrie County, Iowa

Sincerely,

Elizabeth Foster Hill, Manager

Elizabeth Faster Hill

National Register and Tax Incentive Programs

STATE HISTORICAL BUILDING 600 EAST LOCUST DES MOINES, 10WA 50319

T. (515) 281-5111 F. (515) 242-6498

WWW,CULTURALAFFAIRS.ORG