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NPS Form 10-900
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OMB No. 10024-0018

OCT - 7 2005

United States Department of Interior
National Park Service

National Register of Historic Places Registration Form

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 an 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 Fort Atkinson Water Tower
other names/site number N/A

2. Location

street & number	South High and Fourth Streets						N/A	**not for publication**	
city or town	Fort Atkinson						N/A	**vicinity**	
state	Wisconsin	**code**	WI	**county**	Jefferson	**code**	055	**zip code**	53538

3. State/Federal Agency Certification

As the designated authority under the National Historic Preservation Act, 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/Title — Date 10/3/05

State Historic Preservation Officer-WI

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 official/Title — Date

State or Federal agency and bureau

Fort Atkinson Water Tower	Jefferson County	Wisconsin
Name of Property	County and State	

4. National Park Service Certification

I hereby certify that the property is:

- V entered in the National Register.
  - ___ See continuation sheet.
- __ determined eligible for the National Register.
  - ___ See continuation sheet.
- __ determined not eligible for the National Register.
  - ___ See continuation sheet.
- __ removed from the National Register.
- __ other, (explain:)

Edson R. Beall — 11.15.05

for

Signature of the Keeper — Date of Action

5. Classification

Ownership of Property (check as many boxes as as apply)

- Private
- x public-local
- public-State
- public-Federal

Category of Property (Check only one box)

- building(s)
- district
- x structure
- site
- object

Number of Resources within Property (Do not include previously listed resources in the count)

contributing	noncontributing	
		buildings
		sites
1		structures
		objects
1	0	total

Name of related multiple property listing:
(Enter "N/A" if property not part of a multiple property listing.

N/A

Number of contributing resources is previously listed in the National Register

0

6. Function or Use

Historic Functions (Enter categories from instructions)	Current Functions (Enter categories from instructions)
INDUSTRY/PROCESSING/EXTRACTION/waterworks	VACANT/not in use

7. Description

Architectural Classification (Enter categories from instructions)	Materials (Enter categories from instructions)	
NO STYLE	Foundation	Limestone
	walls	Brick
	roof	Metal
	other	Metal

Narrative Description

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

8. Statement of Significance

Applicable National Register Criteria
(Mark "x" in one or more boxes for the criteria qualifying the property for the National Register listing.)

x A Property is associated with events that have made a significant contribution to the broad patterns of our history.

_ 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.

_ 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 purposes.

_ B removed from its original location.

_ C a birthplace or grave.

_ D a cemetery.

_ E a reconstructed building, object, or structure.

_ F a commemorative property.

_ G less than 50 years of age or achieved significance within the past 50 years.

Areas of Significance
(Enter categories from instructions)

Architecture
Community Planning and Development

Period of Significance

1901-1955

Significant Dates

1901

Significant Person
(Complete if Criterion B is marked)

N/A

Cultural Affiliation

N/A

Architect/Builder

E. Kuhnert Company

Narrative Statement of Significance
(Explain the significance of the property on one or more continuation sheets.)

9. Major Bibliographic References

(Cite the books, articles, and other sources used in preparing this form on one or more continuation sheets.)

Previous Documentation on File (National Park Service):
- 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 #
- recorded by Historic American Engineering Record #

Primary location of additional data:
X State Historic Preservation Office
- Other State Agency
- Federal Agency
- Local government
- University

x Other
Name of repository: Fort Atkinson Historical Society

10. Geographical Data

Acreage of Property less than one acre

UTM References (Place additional UTM references on a continuation sheet.)

	Zone	Easting	Northing
1	16	350421	4754002
2			
3			
4			

☐ See Continuation Sheet

Verbal Boundary Description (Describe the boundaries of the property on a continuation sheet)

Boundary Justification (Explain why the boundaries were selected on a continuation sheet)

11. Form Prepared By

name/title	Carol Lohry Cartwright				
organization	For the City of Fort Atkinson			**date**	May 18, 2005
street & number	W7646 Hackett Rd.			**telephone**	262-473-6820
city or town	Whitewater	**state**	WI	**zip code**	53190

Site Description

The Fort Atkinson Water Tower sits on a strip of green space attached to a parking lot in a largely residential area of Fort Atkinson, a small city located in southeastern Wisconsin. The parking lot and green space was once the site of an elementary school and its large grounds. Because it is a high point in the city, part of the school's green space was used at a site for the water tower in 1901. Across the street to the south is the large Fort Atkinson Middle School Complex, once the high school. The paved parking area to the north of the tower is used for school-related parking. The land the tower sits on has always been school district land and remains so today. The City of Fort Atkinson owns the tower, but the school district is the official owner of the land.

The residential neighborhood around the tower is one of the four large historic residential neighborhoods of the city that are divided by the Rock River and the downtown commercial district. This area is several blocks southeast of the city's downtown historic district. It is about two blocks east of the Merchants Avenue Historic District, which was listed in the National Register of Historic Places in 1986.

The land immediately around the tower slopes gently down on all sides. The land remains generally flat to the north on the site of the parking lot, but the slope is steeper on the other sides. The green space surrounding the tower is punctuated with some large trees and shrubs, giving the site a park-like appearance. The only other structure near the tower is a modern service building.

Water Tower Description

The water tower is a tall, conical, structure constructed of cream bricks topped by a large steel water tank. The entire structure is 112 feet high with a slightly over 78 foot high masonry base topped with a 33 foot high steel tank. The tower has a diameter of slightly over 25 feet above the base. A recent condition study of the tower includes details that will be used for this section of the nomination.[1]

A small portion of the tower's underground foundation was recently excavated to determine its composition. It is made up of cast-in-place concrete that extends out from the base of the tower, then drops in three equal steps to about eight feet below grade. Above ground, the base of the tower is slightly flared and only a very small part of the concrete foundation can be seen above ground. The

[1] Art Chadek Architectural Services, *The Fort Atkinson Water Tower A Condition Study for Restoration and Rehabilitation*, July 2004, on file with the Fort Atkinson Historic Preservation Commission, Fort Atkinson, Wisconsin.

walls of the masonry section of the tower are constructed of cream brick in a common bond with a header bond course every sixth course. There are three string course bands roughly located below the sill level of each of the three wall openings. Each stringcourse is made up of two corbelled bond courses with three flat courses in between. At the top of the tower, there is a cornice of brick corbelling that suggest very large brackets. Eight steel bands were erected around the brick walls in 1938 because it was thought the cracks needed additional support.

There are four round-arched openings in the tower. The main entrance sits on the west side of the tower at the base. It is partially enclosed with concrete blocks but its large segmental round brick arch is extant. Two window openings also have round segmental brick arches and are enclosed on the exterior. On the interior it can be seen that one of these openings is filled with a four-light round-arched double-hung sash. Near the top of the tower is a round arched entrance with a metal platform that is attached to the curved metal staircase leading to a metal catwalk at the base of the tank. The floor of the catwalk is not extant, only the meal railing still circles the tank.

The tank is constructed of steel panels riveted together. Originally, a wide cornice sat between the tank structure and its roof, but it is no longer extant and only a metal eave remains. The unusual roof starts as a 45 degree cone shape, but then dramatically increased to a 60 degree angle up to the finial. According to the above-mentioned report, the roof skin is not original and may have been replaced when the cornice was removed.

The interior of the tower is not decorated. A wooden staircase and four landings rise to the bottom of the tank. The underside of the lower wooden framing for the tank and frost jacket is exposed. The staircase is 24 inches wide, as are the landings. It appears that most of the staircase is original.

The condition of the tower is fairly good, according to structural engineers who examined it in 2004. The engineers noted the vertical cracks but stated that the steel bands were not necessary. The bricks are in need of tuck pointing and are soft and absorbent. The interior staircase is in poor condition and should be replaced, and the exterior metal staircase also does not meet present codes. The tank is in need of repair and painting, as well. The engineer concluded that the tower could be easily restored as long as public access is not permitted.[2]

End of Description of Physical Appearance

[2] *Ibid.*

Insert Statement of Significance

Significance Statement[3]

The old Fort Atkinson Water Tower is eligible for the National Register of Historic Places under two criteria. It is architecturally significant under criterion C, as a good example of a type of a property type, the turn of the twentieth century, small town water tower. The tower is a fine example of the type of water tower construction popular in Wisconsin during this period. It is distinctive in its overall height and its intact original steel tank. The tower also has fine brick construction making it a masonry landmark in Fort Atkinson.

The old Fort Atkinson Water Tower is also eligible for the National Register of Historic Places under criterion A. It is locally significant for community development because it represents the establishment of a municipal water system in Fort Atkinson, a milestone event in the history of the community. The development of a municipal water system in Fort Atkinson was fraught with considerable political debate. For almost 10 years, the issue of a municipal water works was debated and strongly opposed by a vocal minority. When the water works was finally built, it was both a political and historical event. That it happened in 1901, the beginning of a new century, was symbolic in that it was part of the overall growth and development of utilities that dramatically changed the way people in the community lived in the twentieth century. The water tower is the largest and most prominent symbol of the development of the Fort Atkinson water works, a symbol of the history of this important public service.

Historical Background

Vermont native and government surveyor Milo Jones came to the Fort Atkinson area in1834 and later settled in the southwestern part of what is now the city. But, the first official white settler was Dwight Foster, who came to the area in November of 1836. More Yankee settlers came to the fledgling settlement after the government officially offered the land for sale in 1839. In 1847, Foster and Jones made the original plat of the city and, by 1853, the community had 750 residents.[4]

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[3] This footnote references the period of significance, significant dates, and builder for Fort Atkinson Water Tower and its water tank. The references for the date of construction are; *Jefferson County Union*, 25 October 1901, p. 7; 8 November 1901, p. 7. The period of significance begins with the completion of the tower in 1901 and extends to 1955 the 50 year cut off year. The water tower functioned as part of the water works system during this entire time.

[4] Carol Lohry Cartwright, *City of Fort Atkinson Architectural and Historical Residential Survey Report*, Fort Atkinson: Fort Atkinson Historic Preservation Commission, 2002, pp. 47-48.

A railroad link that came to Fort Atkinson in 1859 ushered in an early industrial boom in the village that was incorporated in 1860. A grist mill was established in 1860 and eventually turned into one of the largest in the area. In 1866, a chair and bedstead factory came to town and eventually grew into the Northwestern Manufacturing Company, one of the largest nineteenth century employers in the city. In 1867, a tannery was established and in 1868, a small cheese factory was built. In 1870, a lumber company began making butter churns to support the locally growing diary industry. This company eventually became the large Creamery Package Company. These industries were largely responsible for the growth and development of Fort Atkinson into a community with a five to six block downtown commercial district surrounded by four large residential neighborhoods.[5]

At the time the Fort Atkinson Water Tower was constructed in 1901, the community was beginning its second industrial boom, spurred by the dairy industry that was rapidly growing, in part, due to the heavy promotion of the local Hoard family. The growth of the Creamery Package Company was directly related to the growth of the dairy industry. The James Manufacturing Company developed diary cow stalls and other dairy barn equipment and created a large industry in the city. Other agricultural-related industries that became important in the early twentieth century included the Jones Dairy Farm, makers of pork products, and the Fort Atkinson Canning Company.[6]

Fort Atkinson Water Tower and Water Works History

By the late nineteenth century, Fort Atkinson had developed into a thriving small city with an air of progressiveness about it. The Hoard family members were leaders in the development of the dairy industry in Wisconsin. In fact, William Dempster Hoard was one of the nine men who formed the Wisconsin Dairymen's Association in 1872 in nearby Watertown, a seminal event in the history of Wisconsin dairying. Hoard promoted dairying not only in *Hoard's Dairyman*, but also in his local newspaper, the *Jefferson County Union*. The next generation of Hoards continued to promote dairying and also promoted a progressive agenda in the *Union*.[7]

In 1878, Fort Atkinson received its city charter and pioneer Milo Jones became the first mayor. Subsequent mayors in Fort Atkinson came primarily from the families of the city's most prominent businessmen. But these businessmen did not necessarily promote improvements in city services. The *Union* was a tireless promoter of improved city services. The editor railed about the unpaved streets

[5] *Ibid.*, pp. 48-50.
[6] *Ibid.*, pp. 50-55.
[7] *Ibid.*, p. 52.

and poor sidewalks. The *Union* was, in particular, a supporter of municipal water systems. Nearby Whitewater had a water system installed in 1889 and between1890 and 1900, the *Daily Union* was filled with editorial comments about the need for a water system.[8]

It is surprising that Fort Atkinson did not build or franchise a water system around the same time as Whitewater, given that its industrial and commercial base was similar or better than Whitewater's. The answer is also found in the newspaper, which reported that a group of influential people was opposed to such a system. This group supported the idea that the system of private wells was adequate and that a water works system would be expensive and would raise city taxes.[9]

By 1900, Fort Atkinson was about 10 years behind other communities in the development of a water works and the subject was reaching a boiling point. The *Union* was dogged in its almost weekly promotion of a water works. In promoting its own point of view, it reviewed the arguments from the opposition, which was equally convinced that they were right. Finally, a referendum was scheduled for February 1901 and two lengthy circulars on both sides of the issue were published. The mayor, who was opposed to the water works, argued his case that the water works would be too expensive and get the city into too much debt. He argued that fire insurance rates would not go down and that it was better for building owners to get good fire insurance, rather than have better access to water for fire fighting. He did not believe that a water works would give better health because there was no plan for a sewer system and that the city was growing without having a water works. He concluded that tax money used to pay water bonds would be better spent elsewhere.[10]

A circular published by members of the city council (who were in favor of the water works) quickly challenged the mayor's circular. The council's circular pointed out that a majority of voters in the city petitioned for a referendum and had done so largely because they were in favor of a water works. They indicated that they had researched the costs thoroughly and felt the city could handle the debt. They strongly pointed out that fire protection was inadequate without a water works system and fire hydrants. They brought up the fact that almost every other city of the same size in Wisconsin had a water works plant and their citizens were very satisfied, especially if the works are owned by the community and not a private company. The council members disputed the suggestion that a water works system did not lower fire insurance and did not improve health. Even without a sewer system,

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[8] *Ibid.*, pp. 65-66; 68.
[9] *Ibid.* p. 68.
[10] "About Waterworks. To the Voters of Fort Atkinson," circular on file in the archives of the Fort Atkinson Historical Society, Hoard Historical Museum, Fort Atkinson, Wisconsin.

the pure water from a deep well would improve the health and limit epidemics of diphtheria and typhoid.[11]

In early February 1901, the city held the water works referendum. Eighty percent of the voters approved the water works question. The *Union* reported that the election had a large turnout and that with a secret ballot, the vast majority of voters publicly expressed their desire to have this long-needed public service. The city council immediately issued the bonds and arranged for the contractors. By the end of March, the city had a contract for a well, for plans and for specifications for the system, which included a pump house and water tower. The *Union* reported that the tower would be constructed of brick, 75 feet high, with a 35-foot tank that could hold 100,000 gallons of water. The E. Kuhnert Company of Watertown received the contract for the water tower and pump house, while the Phoenix Construction Company of Chicago got the contract for the mains.[12]

During the summer and fall of 1901, the construction of Fort Atkinson's water works system progressed. By the end of August, the brickwork on the tower was completed and quickly became a tourist attraction. The local newspaper reported that may people were using the interior staircase to enjoy the view from the top of the tower. It was reported that people could see 15 miles in the distance, including the buildings of Jefferson to the north and Whitewater to the south. The tall metal tank took two more months to complete and apparently was fabricated on site. The newspaper reported the noise associated with riveting the metal panels together.[13]

In early November, the water tower and tank was tested and it was reported that over 30 households and businesses were hooked up to the water works system and that 10 new connections were being made every day. The water works system was working satisfactorily in December and the city council authorized that the contractors be paid. Fort Atkinson had finally joined the ranks of most other cities its size in having a public water works system for the convenience and health of the general public and for improve fire protection.[14]

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[11] "A Reply to Mayor Bullock's Circular on Waterworks," circular on file in the archives of the Fort Atkinson Historical Society, Hoard Historical Museum, Fort Atkinson, Wisconsin.

[12] "Victory for Waterworks," *Jefferson County Union*, 15 February 1901, p. 7; "Waterworks Progress," *Jefferson County Union*, 29 March 1901, p. 7; "Contracts Awarded," *Jefferson County Union*, 26 March, 1901, p. 7.

[13] *Jefferson County Union*, 30 August 1901, 13 September 1901, 20 September 1901, 4 October 1901, 11 October 1901, 18 October 1901, all page 7; "A Fine View of the Country," *Jefferson County Union*, 25 October 1901, p. 7.

[14] "Now Using City Water," *Jefferson County Union*, 6 November 1901, p. 7; "Common Council Proceedings," *Jefferson County Union*, 6 December 1901, p. 7.

Area of Significance: Architecture

The Fort Atkinson Water Tower is architecturally significant because it represents an important type of construction, a turn-of-the-twentieth century masonry water tower with elevated water tank, a type of construction commonly built for small town water systems in Wisconsin. Water towers with elevated tank had less capacity than a large standpipe, but for small communities, it was sufficient for consumer and fire fighting needs for many years. This type of water tower was not discussed much in engineering references of the time. It was only mentioned as an alterative to the recommended standpipe. However, this alternative, probably because it was less expensive, became such a popular choice for small communities that by the 1910s, it was discussed in the engineering manuals. In the twentieth century, the water tower with elevated tank became the most common water storage method in Wisconsin and these early towers and tanks represent the formative years of this type of construction.

The Development of Water Works

Clean, fresh, water is so important to sustaining life that in ancient times water and its conveyances were often worshipped or were the center of festivals and ceremonies. The technology to draw fresh water from the ground or to bring water from a distant place was an important step in allowing humans to exist away from natural water sources such as rivers and lakes. The earliest technology was the well, but, as early as the eighth century B.C., a system of bringing water through a pipe to Jerusalem is discussed in the Bible.[15]

The Romans were, of course, famous for their aqueducts constructed above ground, but the Greeks also built a system of open or subterranean channels to convey water. The immense masonry bridges of the Roman aqueduct system took water conveyance to a new level. The first Roman aqueduct was opened in 312 B. C., bringing water to Rome from a distance of 11 miles. By the first century, A.D., the system conveying water to Rome consisted of 255 miles of aqueducts that had a capacity of 200,000,000 gallons per day. Eventually, the Roman aqueducts could convey almost 400,000,000 gallons of water per day to serve the reservoirs, fountains, and public baths of the city.[16]

During the medieval period, the French in the province of Artosis began obtaining water from natural

[15] William R. Hill, "Some of the Early Methods of Collecting, Storing and Distributing Water," *Proceedings of the Eighteenth Annual Meeting of the American Water Works Association*, New York: American Water Works Association, 1898, pp. 37-38.
[16] *Ibid.*, pp. 38-39.

hydrostatic pressure by drilling small holes into the ground water, which is raised by the pressure of the water source. This type of well became known as an "Artesian" well, after the ancient name for Artosis, Artesium. Although the French were the first to make this type of well popular in the western world, there is evidence that artesian wells were dug during ancient times in Asia and the Middle East.[17]

During the European Renaissance, there was a return to the idea of building aqueducts to carry water from a distance. In the mid-1600s, the Bridge of Maintenon, a three-tiered arched structure over 4,000 feet long and 200 feet high, was constructed to bring water to the French city of Marseille. In 1613, an 18-foot wide channel brought water to London from natural springs about 20 miles away. The earliest use of pumps to raise and store water for public systems was documented in Germany in the mid-1500s. London used pumps in 1582 to raise water from the Thames for this purpose.[18]

The use of pumps, both water-powered and steam-powered, continued during the 1700s in Europe, as water systems became larger and more complex. In the new United States, pumps were used in the early water works system in Philadelphia in 1801. In that system, water was pumped from the Schuylkill River into a brick aqueduct that led to a building with two wood and copper tanks on the roof. Pumps at the building brought the water up into the tanks. From the tanks, the water was distributed to the city in either crude pipes or bored logs. The use of bored logs was common before pipe technology improved. The Romans used lead or earthenware pipes that were not suitable for water under pressure. In London's early water system, the distributing pipes were made of bored trunks of elms about six to seven inches in diameter. Because of their small size, additional lines needed to be laid side-by-side to provide enough capacity. At the end of the eighteenth century, London switched to cast iron pipes.[19]

During the 1800s, waterworks systems became more and more standardized. In 1956, E. Sherman Chase presented a paper to the American Water Works Association that discussed the progress in water works systems during the previous 75 years. Sherman indicated that the basic principles of water works engineering had not radically changed during those years (1871-1956). He stated, "the fundamentals of mechanics and hydraulics had already been discovered and formulated by scientists and engineers [by 1871]." Rather, the major improvements in water works systems came from advanced technology in the acquisition and distribution of the water.[20]

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[17] *Ibid.*, p. 40.
[18] *Ibid.*, pp. 40-41
[19] *Ibid.*, pp. 41-43.
[20] E. Sherman Chase, "75 Years of Progress in Water Supply Engineering," *Journal American Water Works Association,*

Chase stated in his paper that the sources of water supply in 1956 were similar to what was available in 1871; lakes, streams, reservoirs, and ground water. What had improved by 1956 was the means to construct better reservoirs and more efficient ways get water from above or below ground sources. In the 1800s, Chase indicates that the use of pumps and pipes was common, but the types and materials had dramatically changed by 1956. In the 1800s, distribution pipes were often constructed of cast iron, but were usually too small in size. Other types of pipes and inadequate joints often failed under pressure. By 1956, larger pipes and better joints had solved this problem, and the use of reinforced concrete for large transmission mains had drastically improved the capacity of water works systems.[21]

Much of the change in water works between the nineteenth and mid-twentieth century involved the improvement of pumps. Prior to 1900, steam-driven plunger pumps were common. The development of the multistage centrifugal pumps made them obsolete. Electric power provided a more consistent energy source for pumping and allowed for the development of automatic controls. Better-designed pumps, more powerful engines, and a steady power source dramatically improved the ability of municipal water works systems to provide adequate water pressure to customers after 1900.[22]
In reviewing several sources on water works systems from the late nineteenth century, the conclusions that Chase made in1956 were valid. The basic components of a water works system at the end of the nineteenth century was similar to the system developed in Philadelphia in 1801: a water source, a water storage and pumping system to provide water pressure, and a distribution system of underground pipes. Above ground reservoirs, standpipes, and water towers with elevated tanks were the most common methods of providing water pressure and storage to meet peak demand. Pumps were generally enclosed in pump houses. Since this nomination is for an historic water tower, the discussion will now concentrate on that component of a water works system.

Standpipes and Water Towers

By the 1880s, it was common for municipalities or water districts that had no hills or mountains nearby that were suitable for raised reservoirs, or where the water needed did not justify the expense of construction of a raised reservoir, to build wide standpipes or water towers with tanks that could hold an extra supply of water that provided water pressure and capacity to the system during times of peak demand. The standpipes and water towers were located at the highest practical elevation to maximize the water pressure.

Vol. 48, No. 8, August, 1956, p. 915.
[21] *Ibid.*, pp. 916-921.
[22] *Ibid.*, pp. 923-924.

J. T. Fanning, one of the foremost late nineteenth century authorities on water-supply engineering, laid out specific plans for water works in his 1886 book, *A Practical Treatise on Hydraulic and Water-Supply Engineering*, an update of his seminal 1877 book called *A Practical Treatise on Water-Supply Engineering*. This volume provides information on water systems that is typical of other books and papers published during this period and provides a context for which water works components from that period can be analyzed.[23]

Fanning, along with other engineers during this period, promoted the construction of tall standpipes that would provide extra capacity and water pressure, particularly for fire departments. A standpipe is essentially a tall, conical structure that can store water. The standpipe adds water pressure and supply for improved fire fighting and serves as a back-up for when water use is at peak demand or the pumps are not running. These large structures needed firm foundations to withstand the weight of the water and the force of the wind. Fanning recommended that narrow standpipes be enclosed because they were particularly vulnerable to high winds and tornadoes.[24]

Fanning's description of standpipes was "state of the art" for providing water storage and pressure at that period, but such structures were costly. Fanning briefly indicates that smaller tanks were being constructed on masonry towers or iron trestles and that in small villages of the "middle states," wooden tanks were sometimes constructed on wooden trestles.[25]

At the turn of the twentieth century, John Goodell published *Water-Works for Small Cities and Towns.* By this time, many southern Wisconsin communities had installed or would soon be installing water works systems. Like Fanning, Goodell suggested wide conical standpipes as the best reservoirs for communities that are relatively level or where the amount of water needed would not justify the expense of a large, raised, reservoir. But, he also noted that in flat areas, the water in the lower part of a standpipe does not provide any pressure, and that this factor had led to the construction of water towers either as tanks sitting on metal trestles or on top of masonry shafts. He also noted that this form of

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[23] The author undertook a review of several books and numerous articles published in the*Proceedings of the American Water Works Association* for the 1880s and the 1890s and found that information on water towers and tank reservoirs was very similar from resource to resource. The author is using J. T. Fanning, *A Practical Treatise on Hydraulic and Water-Supply Engineering*, New York: Van Nostrand, 1886 and John Goodell, *Water-Works for Small Cities and Towns*, New York: The Engineering Record, 1899, as the best and most comprehensive sources for information on water towers and tanks of this period.

[24] Fanning, pp. 585-590.

[25] *Ibid.*, p. 602.

water tower construction was more economical.[26]

As an example of this type of water tower, Goodell described a structure in Oberlin, Ohio, where a steel reservoir tank was supported by a tall masonry pedestal or tower. The tower had a six-foot rubble stone foundation topped with a six inch water table. The limestone-constructed tower stood about 40 feet high and held a 35-foot steel tank that was not enclosed. A window was placed in the tower about half way up and a door with a small iron balcony sat near the top from which a ladder then rose to the tank. This description is remarkably like many water towers in Wisconsin's small towns in the late nineteenth century. Goodell appears to favor the standpipe, but apparently finds this type of tower an acceptable example of a water tower structure.[27]

By the 1910s, the cost effectiveness of water towers made them so popular, the engineering literature began to address them in more detail. A water works engineering manual from 1910 gives elevated tanks or water towers equal standing with standpipes. The manual states that elevated tanks could be made of steel, wood, or reinforced concrete, supported by a "suitable tower." The manual goes on to state that an elevated tank on a trestle is less expensive, and that it was even less "objectionable in appearance" than a standpipe. A key feature for Wisconsin's climate was that this type of structure had less trouble from ice.[28]

The 1910 manual highly recommended supporting water tanks with masonry structures because "this form of construction readily lends itself to effective architectural treatment. . ." The statement is made within the context that erecting masonry structures was not usually done. This is interesting because in Wisconsin by that time, the use of masonry structures to support water tanks was common. The manual also indicated that wooden water tanks were frequently used because of their low cost, but that construction problems sometimes led to dangerous failures. The manual states that a few reinforced concrete tanks had been designed but that there were problems.[29]

In a 1918 water works engineering manual, water towers with elevated water tanks were finally recommended as service-reservoirs for small communities or for large factories. Standpipes were still addressed as being a good choice for places with suitable elevated sites, but in flat regions, the elevated tank was actually recommended over the standpipe. The wooden water tank was still discussed as an option, but it was indicated that serious failures had occurred when the hoops holding the tank together

[26] Goodell, pp. 235-244.
[27] *Ibid.*, p. 245.
[28] F. E. Turneaure and H. L. Russell, *Public Water-Supplies*, New York, John Wiley & Sons, 1910, pp. 711, 723.
[29] *Ibid.*, pp. 734-735.

failed or corroded. The manual highly recommended steel tanks and stated that when "properly designed, they can resist safely any wind pressure to which they may be subjected. They are easily inspected, cleaned, and painted. . ." Steel tanks were especially recommended for capacities of over 40,000 gallons of water.[30]

Earlier in this discussion, the paper presented by E. Sherman Chase to the American Water Works Association in 1956 was used to summarize developments in water works during the later nineteenth century and the first half of the twentieth century. Chase also summarized the development of water storage facilities. He indicated that historic standpipes were generally constructed of steel or wrought-iron and that reinforced concrete standpipes had been tried in the early twentieth century. He also stated that elevated tanks on towers had been used for a long time, but that the tall, narrow tanks of the nineteenth century had given way to more shallow and wide tanks with ellipsoidal bottoms.[31]

During the second half of the twentieth century, two types of water towers began to supplement and/or replace the old standpipes and masonry water towers for municipal water systems. These tank styles included the ellipsoidal elevated tank sitting on a metal tower structure and the large single pedestal spherical tanks that remind people of mushrooms. A taller and narrower ellipsoidal tank was a popular choice for industrial and institutional use. These styles remain popular today. The internet web site for the Pittsburgh Tank and Tower Company, a manufacturer of water and other liquid storage tanks, makes both ellipsoidal tanks elevated on a metal tower structure and single pedestal spherical water towers. A newer popular design is a large pillar with a circular tank. The pillar allows for storage, pumping equipment, and even office space below the elevated tank.

The Fort Atkinson Water Tower is an example of late nineteenth century type of water tower construction. It was not necessarily "state of the art" when it was built, but became so popular that it eventually became the leading type of water storage structure in small towns of the late nineteenth and early twentieth centuries. This type of construction was economical and well-suited to small communities with early water systems. Although late nineteenth century engineers recommended standpipes, their cost limited their construction to larger cities like Milwaukee, Racine, and Janesville. The masonry tower and elevated water tank may not have been the engineer's first choice, but it was a successful adaptation of the standpipe that became the best choice for communities with limited water pressure and storage needs. Its lower cost, no doubt, played a major role with the water company entrepreneurs, who built most of the late nineteenth century water works systems in small towns for

[30] Edward Wegmann, *Conveyance and Distribution of Water for Water Supply*, New York: Van Nostrand, 1918, pp. 377, 384.
[31] Chase, p. 921.

profit. These types of towers allowed for the development of high-quality water works systems in small towns.

In manuals from the 1910s, when the tower and elevated water tank became standard for small communities and industries, it was recommended that the masonry or metal structures of these water towers have strong foundations and high-quality construction to withstand the wind and water pressure. Metal or wooden towers were often built during the late nineteenth and early twentieth centuries, but for community water systems, a masonry structure was either the first choice of builders or quickly replaced the non-masonry towers. Fort Atkinson's water system was built over 10 years after the early systems in the area, and by that time, the brick masonry structure was the standard. Because the method had been well-tested in other communities, Fort's water tower could be built with the knowledge that it would be a solid structure. Indeed, it has held up to Wisconsin's varied rough weather (wind, snow, ice, etc.) for over 100 years.

The Fort Atkinson Water Tower has a high level of turn-of-the-twentieth-century brick and metal construction. The brickwork and the quality of bricks make for an attractive, as well as sturdy, structure. The round arches, corbelled cornice, and brick stringcourses add a decorative quality to the tall structure. The original metal tank is a fine example of metal fabrication done prior to the era of standardized water tanks built by specialty manufacturers. The conical roof is particularly attractive. These features add to the architectural distinctiveness of this particularly example of a water tower.

Adding interest to the water tower construction is its builder, the E. Kunert Manufacturing Company of nearby Watertown. Ernest and Frank Kunert started the Kunert Brothers machine shop in 1875. By 1890, the company, now known as the E. Kunert Manufacturing Company had moved into a substantial sized factory building and specialized in constructing high and low steel truss bridges and manufacturing brewing equipment, boilers, and engines. The Kunert Company had experience in the manufacturing of boilers and other large metal tanks, so the size and design of the water tank on the tower was in keeping with the company's expertise.[32] By 1915, the company was known as the Dornfeld-Kunert Company was located in a larger factory building. A victim of the Great Depression of the 1930s, in 1938, the company was taken over by the Otto Biefeld Company.[33]

Fort Atkinson's water tower is locally architecturally significant as a good example of a type of

[32] Carol Lohry Cartwright and Joan Rausch, *City of Watertown, Wisconsin Architectural and Historical Intensive Survey Report*, Watertown, WI: Architectural Researches, Inc., 1987, p. 177.
[33] Carol Lohry Cartwright and Joan Rausch, *City of Watertown, Wisconsin Architectural and Historical Intensive Survey Report*, Watertown, WI: Architectural Researches, Inc., 1987, p. 177.

construction that, at first, was an economical adaptation for a more costly standpipe, but quickly became the standard for water tower construction for small town water works. This water tower represents the continued growth and development of this type of structure at the turn of the twentieth century, a type of structure that would dominate water works systems in Wisconsin. It has a high level of integrity, with its brick construction and original openings intact. In particular, the tall, original water tank, with its attractive construction methods and materials, adds to the architectural significance of this tower. The water tower is not only an important historic resources, but an architectural landmark in Fort Atkinson.

Area of Significance: Community Planning and Development

The Fort Atkinson Water Tower is locally historically significant because it represents the establishment of the city water system, an event that was critical in the development of Fort Atkinson into a modern community. The water system was also a significant political achievement in a community that had debated the water works issue for 10 years and had a very powerful and vocal opposition. By 1901, Fort Atkinson had access to other utilities, but its lack of a water system made some in the community feel that the city was "backward" in comparison to others. The vote for the water system was the result of a community effort to override powerful political forces for the good of the public. In that sense, it was one of the most important political events in the history of community development in the city.

Historic Development of Water Works Systems

Prior to 1880, there were 598 public water works systems in the United States, but there were 929 municipalities with a population of 2,500 or more, meaning that only 64 percent of substantial-sized communities in the country had municipal water systems. And, most of that 64 percent were installed between 1870 and 1880. These water works systems were generally installed not because of a desire for clean drinking water, but for fire protection. In fact, many of the early water systems used polluted water from lakes, rivers, and streams. Although some people rushed to take advantage of municipal water, statistics from several communities in Pennsylvania show that at the turn of the twentieth century, the vast majority of people had not hooked up to water systems that had been in operation for as many as 20 years.[34]

Often because of the poor quality of the water, most people felt that they could get as good or better

[34] John H. Murdoch, Jr., "75 Years of Too Cheap Water," *Journal American Water Works Association*, Vol. 48, No. 8, August, 1956, pp. 925-926.

quality of water from their wells or cisterns. Most people did not understand until after 1900 that there were problems associated with this water. If the water pumped from backyard wells looked and smelled good, it was assumed to be good. People did not understand that their well's proximity to their outhouses, often quite close, resulted in contaminated ground water, and very few people associated common diseases like dysentery and typhoid with poor water.[35]

Since people were generally content with their private wells, the push for municipal water works systems came from other community concerns. The most important of these was fire protection with controlling dust in the streets in summer another popular concern. Fire fighting was often the concern that "sold" a water works system. Bucket brigades, pumping from private wells or cisterns, or even pumping from public cisterns or wells in the local business district had limited success in controlling fires, which often turned into multi-building conflagrations. Broad support could usually be found for improved water availability for fire fighting and controlling dust, but most people could not see a personal need to connect with a water works system. Because of this, some water systems took a long time to be built, while others failed when an insufficient number of people subscribed to them. Only when people could see the convenience of indoor plumbing and when water works prices were kept low did public water works become successful.[36]

In Wisconsin, the earliest water works system came to the state's largest city. In 1872, Milwaukee began its system, which it owned and operated. But, the Milwaukee experience was far from the norm. The development of the water works in Madison was, initially, more typical of water works development in small towns in Wisconsin. In 1881, a private company offered to build a water works in Madison in exchange for a 20-year franchise agreement. City leaders were eager to accept this offer and the private company established the Madison City Waterworks Company. Some citizens balked at the idea of a privately-owned water works system and before the private company could be officially contracted to build the system, the city council passed a resolution prohibiting private ownership of a water works. In 1882, the city of Madison contracted for wells, a pumping station, and 12 miles of pipe, which was the beginning of their public system.[37]

Most other communities in Wisconsin granted franchises to private companies to build water works systems, just as they granted franchises with private companies for electric and telephone services.

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[35] *Ibid.*, p. 926-927.
[36] *Ibid.*, pp. 928-929.
[37] John D. Buenker, *The History of Wisconsin Volume IV The Progressive Era, 1893-1914*, Madison: State Historical Society of Wisconsin, 1998, p. 153; David V. Mollenhoff, *Madison A History of the Formative Years*, Dubuque: Kendall/Hunt Publishing Company, 1982, pp. 208-211.

But, while electric and telephone services tended to remain private, it was not long before municipalities began to take over water works systems. The reasons were that in some cases, there were conflicts with poor service and high rates, or, the water companies did not make the profits they had anticipated, possibly because of the slow rate of customer hook-ups, and asked the municipal governments to buy or take over the service. In any event, by 1900, most water works systems were built by municipalities.[38]

Utilities like electricity, water, and telephone service, combined with paved streets, parks, and public amenities like bandstands were a part of the changes in the late nineteenth century that brought communities into the modern era. Since many of these services were operated or regulated by the local government, they expanded local government's role in the lives of its citizens. Taxpayers eventually expected more and more services in the twentieth century, a trend that has yet to end. Early water systems were a part of this trend, even though they often began as private enterprises. They had to be built with the cooperation of the local government and after the turn of the twentieth century, they were often built and operated by the local government.

The Fort Atkinson Water Tower was built at a time when it had become clear that having privately-owned water works systems was problematic. Because it was already 1901 when Fort Atkinson citizens approved their water works, a private system was not considered. In fact, one of the arguments for not having a water works was that nearby Whitewater, whose system was built in 1889, had an unsatisfactory relationship with their private water works company. Therefore, in Fort Atkinson, the water works was, from the start, a publicly-owned utility.

As the historical background indicates, the construction of this, the first major public works project in the city, was an event that was not without controversy. Proponents of the system stressed the health, fire fighting, and economic benefits that would come from a water system. Opponents stressed the higher taxes that would come with it and that other city projects might not be funded because of the water works. When the community voted in favor of the water works, it was an important political event in the history of community development in Fort Atkinson. It illustrated that by 1901, local citizens were willing to pay extra taxes for a public improvement that they felt was worth the cost. As the twentieth century progressed and the public desired more and more public works improvements and better private utilities, they would continue to approve measures directing their local government to respond to these needs. The public water system in Fort Atkinson not only ushered in the era of

[38] Buenker, pp. 152-156.

modern conveniences, but also the era when the citizens of the community began to authorize their local government to take on an increasing role in providing public services.

The Fort Atkinson Water Tower is locally historically significant because it is the most important historic resource in the community related to the development of the city's water works system. The water works system was the city's biggest public works project to date and was a significant event in the development of the community. The political fight that preceded the building of the system adds historical significance to the event. This fight made the building of the water works system not just an important event in the development of public works, but an important event in the entire history of the city. The tower, as the most important historic resource related to this event, is an important historical landmark in the community.

End of Statement of Significance

Insert References

MAJOR BIBLIOGRAPHIC REFERENCES

"About Waterworks. To the Voters of Fort Atkinson." Circular on file in the archives of the Fort Atkinson Historical Society, Hoard Historical Museum, Fort Atkinson, Wisconsin.

Art Chadek Architectural Services. *The Fort Atkinson Water Tower A Condition Study for Restoration and Rehabilitation*, July, 2004. Report on file with the Fort Atkinson Historic Preservation Commission, Fort Atkinson, Wisconsin.

Buenker, John D. *The History of Wisconsin Volume IV The Progressive Era, 1893-1914.* Madison: State Historical Society of Wisconsin, 1998.

Cartwright, Carol Lohry. *City of Fort Atkinson Architectural and Historical Residential Survey Report.* Fort Atkinson: Fort Atkinson Historic Preservation Commission, 2002.

Cartwright, Carol Lohry and Joan Rausch. *City of Watertown, Wisconsin Architectural and Historical Intensive Survey Report.* Watertown, WI: Architectural Researches, Inc., 1987.

Chase, E. Sherman Chase. "75 Years of Progress in Water Supply Engineering." *Journal American Water Works Association*, Vol. 48, No. 8, August, 1956.

"Common Council Proceedings," *Jefferson County Union*, 6 December 1901, p. 7.

"Contracts Awarded," *Jefferson County Union*, 26 March, 1901, p. 7.

Fanning, J. T. *A Practical Treatise on Hydraulic and Water-Supply Engineering.* New York: Van Nostrand, 1886.

"A Fine View of the Country," *Jefferson County Union*, 25 October 1901, p. 7.

Goodell, John. *Water-Works for Small Cities and Towns.* New York: The Engineering Record, 1899.

Hill, William R. "Some of the Early Methods of Collecting, Storing and Distributing Water." *Proceedings of the Eighteenth Annual Meeting of the American Water Works Association,*

New York: American Water Works Association, 1898.

Jefferson County Union, 30 August 1901, 13 September 1901, 20 September 1901, 4 October 1901, 11 October 1901, 18 October 1901, 25 October 1901, 8 November 1901, all p. 7.

Mollenhoff, David V. *Madison A History of the Formative Years*. Dubuque: Kendall/Hunt Publishing Company, 1982.

Murdoch, John H., Jr. "75 Years of Too Cheap Water." *Journal American Water Works Association*, Vol. 48, No. 8, August, 1956.

"Now Using City Water," *Jefferson County Union*, 6 November 1901, p. 7.

"A Reply to Mayor Bullock's Circular on Waterworks." Circular on file in the archives of the Fort Atkinson Historical Society, Hoard Historical Museum, Fort Atkinson, Wisconsin.

Turneaure, F. E. and H. L. Russell. *Public Water-Supplies*. New York: John Wiley & Sons, 1910.

"Victory for Waterworks," *Jefferson County Union*, 15 February 1901, p. 7.

"Waterworks Progress," *Jefferson County Union*, 29 March 1901, p. 7.

Wegmann, Edward. *Conveyance and Distribution of Water for Water Supply*. New York: Van Nostrand, 1918.

Wyatt, Barbara, editor. *Cultural Resource Management in Wisconsin*. Madison: State Historical Society of Wisconsin, 1986.

End of References

Insert Boundary Descriptions

BOUNDARY DESCRIPTION

The boundary for this property is as follows: a line forming a circle 20 feet from the foundation of the tower entirely around the structure.

BOUNDARY JUSTIFICATION

This boundary was drawn to encompass some of the green space surrounding the tower, while drawing out the service building nearby and not encroaching into the parking lot.

End of Boundary Descriptions

United States Department of the Interior
National Park Service

National Register of Historic Places
Continuation Sheet

Insert Photo Descriptions

FORT ATKINSON WATER TOWER, Fort Atkinson, Jefferson County, Wisconsin. Photos by Carol Lohry Cartwright, February, 2005. Negatives on file in the Historic Preservation Division of the Wisconsin Historical Society, Madison, Wisconsin.
Views:

1 of 4: Site view, from the southwest.

2 of 4: View of tower from the southeast.

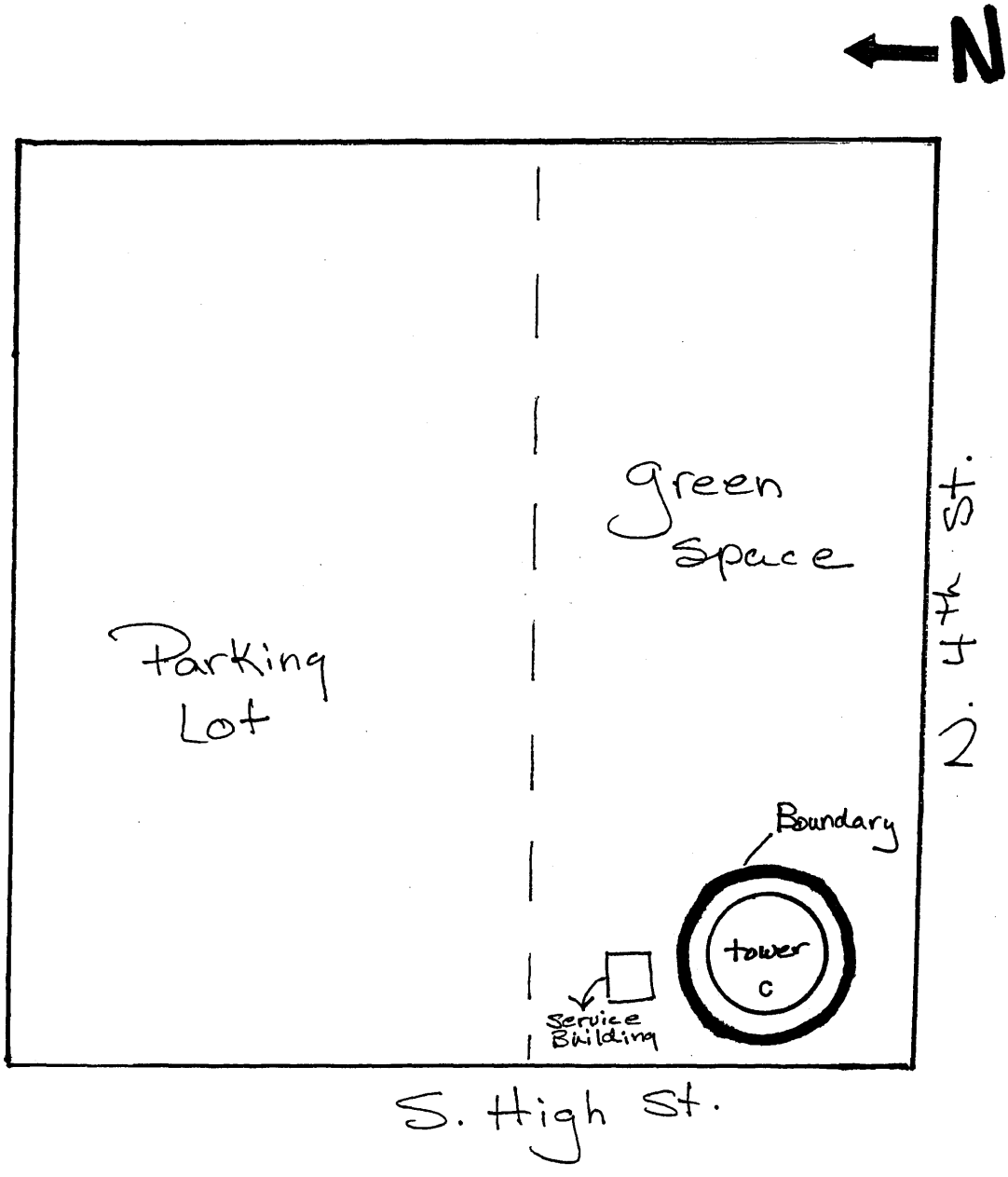
3 of 4: Close-up of tower cornice detail and upper entrance.

4 of 4: Interior of tower showing wooden staircase, frost barrier and tank support.

End of Photo Descriptions

FORT ATKINSON WATER TOWER
FORT ATKINSON, JEFFERSON COUNTY, WI

SITE MAP



Not to Scale

=Boundary

C=contributing