

Vilas County Public Health Department

Food Service Construction Guide

January 2014



PURPOSE

The purpose of this guide is to provide prospective food establishment operators, construction contractors, and architects assistance in designing food-service establishments in Vilas County, Wisconsin.

PLANS, CONSULTATIONS AND INSPECTIONS

This document should provide prospective food facility operators with a summary of Wisconsin Food Code requirements. The Health Department will review plans and specifications prior to construction or remodeling at no additional cost to the operator.

The plans and specifications should include:

1. A full set of final State approved construction plans and material schedules.
2. Type and model of fixed equipment and fixtures;
3. Intended menu items.

In addition to review by the Health Department, plans and specifications must also be reviewed by the local or state building official. Please contact your Township Clerk or Chairman for information about whether local review is required. Used and new equipment should meet standards specified by the NSF and/or the American National Standards Institute (ANSI). Operators should look for NSF or ANSI stamps or labels on all equipment.

Consultations

Before opening, free onsite, office and telephone consultations are available from the sanitarian to ensure all health rules are met and the establishment opens on schedule. Consultations are usually requested weeks in advance of the scheduled opening.

Permit application

Prospective operators must complete Vilas County Permit Application and submit applicable fee(s) prior to opening the facility. Fees include both pre inspection and license fees. An application can be found on our website: www.vilascountypublichealth.com

Pre-licensing inspection

The sanitarian must conduct a pre-licensing inspection and complete a written report before a facility is issued a license or permit to operate. Generally, a license to operate will not be granted if there are any violations noted on the pre-licensing inspection report. Therefore, scheduling the pre-licensing inspection should be done as closely to the date of opening as possible, but should also allow enough time for correction of deficiencies. All license applications and fees must be submitted before or during the pre-licensing inspection. You may not operate until applications and fees are submitted and final approval is given by the Sanitarian.

To submit plans and schedule consultations and inspections, please contact:

Vilas County Public Health Department
Mailing address: 330 Court Street, Eagle River, WI 54521
Physical address: 302 W Pine Street, Eagle River, WI 54521

715.479.3656 office telephone

715.479.3741 fax

www.vilaspublichealth.com

Please allow at least 30 days for plan review approval. Plans must be reviewed before constructing, enlarging, altering, or converting any building for use as a food service establishment.

Plan submittal should include:

PLAN REVIEW CHECKLIST

	Completed plan review application
	One full set of State approved construction plans and material schedules
	Finish surfaces for walls, ceilings, floors and floor base for food processing and dishwashing areas
	Proposed menu
	If applicable, include water well number for privately owned wells
	Septic approval from Vilas County Zoning Department

CERTIFIED FOOD MANAGER

A Certified Food Manager (CFM) is required for meal service. A complete list of approved courses can be received by contacting the Food Safety and Recreational Licensing Section of the Division of Public Health. They can be reached at 608-266-2835, by mail at: P O Box 2659, Madison, WI 53701-2659 or by email at Katherine.Braumann@wisconsin.gov. Some of the courses that are approved are the Wisconsin Restaurant Association (WRA), Tavern League of Wisconsin and most of the Technical Schools in Wisconsin.

At least one CFM certificate is required for each facility. The health department recommends more than one CFM for each facility. The main purpose of the CFM is to provide the training necessary for all other food workers in order for food code requirements to be met. In the absence of the facility CFM, the “person-in-charge” must have the same knowledge in order for active managerial control to be in place at all times. Another general rule is in the absence of the CFM, the person-in-charge should be able to answer all questions on facility operation during an inspection.

HANDWASHING STATIONS

1. A minimum of one, easily accessible hand-washing sink must be located in EACH AND EVERY food preparation area, warewashing area and toilet room;
2. All handwashing sinks must be conveniently located, and should not used for any other purpose;
3. Each hand washing sink shall be provided with hot and cold water tempered by means of a mixing valve or combination faucet. The water must be between 80° and 120°F;
4. Self-closing or automatic faucets shall be designed to provide a flow of water for at least 15 seconds without the need to reactivate the faucet;
5. If unpackaged food and/or clean equipment and utensils are in close proximity to a hand washing sink, a splash shield must be installed;
6. There is no minimum size for a hand wash sink. However, a 10” x 14” is the minimum size recommended in order to reduce splash from hand wash activities;
7. In addition, each hand wash sink faucet must have a non hand operated faucet handles, such a “wrist-blade handles or electronic eye. Foot or knee pedals are acceptable, but not recommended due to several factors, including being difficult to maintain a consistent temperature.

EQUIPMENT

All food-service equipment must meet Commercial NSF or ANSI standards:

1. **Table-mounted equipment** should be installed on legs of sufficient height to ensure unobstructed clearance beneath the unit for cleaning and inspection;
2. **Floor-mounted equipment** should be a minimum of six inches off the floor and installed on casters, rollers, or gliders for ease of cleaning and inspection. We recommend installing cooking equipment with quick disconnect gas lines to facilitate cleaning.
3. A separate **food preparation sink** is required, if food will be washed or thawed. A drain board should be provided for each basin. Every food preparation sink must be plumbed with an air gap in accordance with state plumbing codes and rules.
4. **Mechanical refrigeration** needs to meet Commercial NSF standards for maintaining potentially hazardous food. All refrigeration units, including prep tables and salad bar units, have to maintain potentially hazardous food at 41°F or lower. Thermometers shall be designed in include and shall be equipped with at least one integral or permanently affixed temperature measuring device that is located to allow easy viewing of the device's temperature display.
5. **Walk-in refrigerators or freezers must** have a pre-approved floor and base-cove installed on a smooth concrete surface. An insulated floor is recommended for walk-in freezers.
 - ▶ Condensate from walk-in refrigeration units must be plumbed into a floor drain located outside the unit
 - ▶ Galvanized materials are not permitted in walk-in refrigerators and freezers
 - ▶ In beer refrigerators with no food storage, diamond aluminum tread-plate or an epoxy resin surface installed on a smooth concrete surface are acceptable finishes
 - ▶ A base should be stainless steel, manufacturers' pre-fabricated vinyl screed or a material matching the finish of the cooler floor. Vinyl bases are not recommended. A quarry tile base should only be used when placed against a rigid foam-filled cooler wall with the screed securely fastened to the floor. The base should provide a ¼-inch radius at the floor juncture and should be sealed to the floor
 - ▶ All joints and panel attachment areas should be sealed with food-grade silicone, caulk or equivalent
 - ▶ Shelving must meet NSF standards for cold storage use and be corrosion resistant. Chrome-plated, zinc, wood, and galvanized shelving cannot be in refrigeration units.
6. **Dipper wells** with flowing water should be provided, if bulk ice cream is dispensed. If provided, the dipper well shall be located adjacent to the proposed area of use. The water line shall have an air gap. The wastewater system must also be air gapped to a trapped waste pipe;
7. **Single-service articles** for consumer, self-service operations must be in the original, individual wrapper or contained within an approved dispenser;
8. **Consumer self-service facilities:** ▶ Beverage dispensers should be push-button operated. Any lever-activated dispensers shall be designed to protect the lip contact surface of the drinking container;
 - ▶ Salad bars and buffets should utilize mechanical refrigeration;
 - ▶ Approved food shields or sneeze guards must be provided;
 - ▶ Liquid drainage systems for salad bars and steam tables must have an air gap;
 - ▶ Salad bars and buffets should be located on a smooth, durable, easily cleanable floor, or equivalent,

which extends three feet beyond the edge of the salad bars or buffet.

FOOD PREPARATION AND DISHWASHING AREAS

1. **Floors** in food preparation and dishwashing areas must be constructed of material that is:

- ▶ Smooth
- ▶ Durable
- ▶ Easily cleanable
- ▶ Nonabsorbent

Tile grout should be water-resistant and not exceed ¼ inch in width. Food establishments that water flush or pressure wash should have floor/wall junctures coved and sealed to no larger than one millimeter (1/32 inch). The floors should be graded to drain;

2. **Walls** in splash zones or high moisture areas, such as dishwashing or sink areas must be finished with smooth, cleanable, durable and nonabsorbent materials. Block walls must be smooth and sealed with epoxy or enamel paint
3. **Ceilings** must be smooth, nonabsorbent, and capable of withstanding frequent cleaning. Fissured, perforated or rough acoustical tile is not permitted in food preparation or dishwashing areas;

DISHWASHING

Operators may choose to manually or mechanically wash utensils and equipment. In some cases, food establishments have both a multi-compartment sink for manually washing and a mechanical dishwasher. The advantage of having both a multi-compartment sink and a mechanical dishwasher is there is a back-up system if one fails to be of service. Therefore, installation of both manual and mechanical systems is encouraged.

Manual Dishwashing

1. A three or four-compartment sink with drain boards on each end is required. The sink should meet NSF standards. Ware washing sinks must not be used for any other purpose;
2. Each compartment of the multi-compartment sink shall be large enough to immerse half of the largest utensil or equipment used in the establishment;
3. Each drain board must be of sufficient size to accommodate soiled and clean utensils and equipment;
4. A test kit is required for verifying the effectiveness of the sanitizing step. Verification may be done through use of chemical test strips;
5. Spray arms at dishwashing stations must have an air gap or be fitted with an atmospheric vacuum breaker, in accordance with plumbing code;

Mechanical Dishwashing

1. A dish machine is recommended for reusable dishes, flatware or glassware. All spray-type dishwashing machines should conform to NSF Standard 3;
2. A table or drain board must be of sufficient size to accommodate soiled and clean utensils and equipment. The table or board for soiled utensils shall not drain into the washing compartment of the dishwashing machine;
3. Mechanical ventilation shall be provided over hot-water sanitizing dishwashing machines;
4. Chemical sanitizing machines may have an audio or visual alarm system that warns the user the sanitizer supply has been depleted;
5. A booster heater is required for hot-water sanitizing dishwashing machines;
6. Pressure measuring devices for the water supply must be marked in increments of one pound per square inch (1 PSI or 7 kPa) and must be accurate plus/minus 2 PSI (14 kPa). The device must measure the range up to at least 25 PSI (170 kPa);

7. Spray arms at dishwashing stations must have an air gap or be fitted with an atmospheric vacuum breaker, in accordance with plumbing rules;
8. A test kit is required for verifying the effectiveness of the sanitizing step through use of chemical test strips or thermolabels that indicate 160° F or greater for hot water sanitizing.

FOOD-RELATED STORAGE

1. Separate storage areas are required for clean equipment and utensils. The items must be stored on approved shelving that is at least six inches off the floor. Pegboard is not acceptable. Utensil racks may not be located in areas subject to contamination.
2. Food, beverages and single-service items shall be protected from contamination by storing them in a clean, dry location where it is not exposed to splash, dust, or other contamination. Food, beverages and single-service items shall not be stored:
 - ▶ In a locker room
 - ▶ In a toilet room
 - ▶ In a dressing room
 - ▶ In a garbage storage room
 - ▶ In a mechanical room
 - ▶ Under a sewer line that is not shielded to intercept potential drips
 - ▶ Under a leaking water line, including a leaking automatic fire sprinkler head
 - ▶ Under an open stairwell
 - ▶ Under any other source of contamination
3. Poisonous or toxic materials shall be stored in a manner to not contaminate food, equipment, utensils and single-use articles.

BAR SERVICE AREA

1. At least one, hands-free operated, hand washing sink is required in areas where alcoholic beverages are prepared or served
2. Ice bins shall be self-draining and air gapped into a wastewater system;
3. Ice for beverages shall be stored separately from ice used for cooling bottles, beverage lines and condiments. Beverage ice may not be stored in units that have drop-in cold plates for cooling beverage lines. Cold plates for beverage lines must be integrally formed into the ice bin unit, if the ice is used for beverages;
4. An approved, backflow preventer shall be installed on soda post-mix carbonators. The backflow preventer shall be located in the water line to the carbonator, preferably between the pump and the carbonator. No copper piping shall be installed downstream from the backflow preventer.

TOILET ROOMS

1. Wall finishes must be smooth, durable and easily cleanable, and should extend to at least 4 feet up;
2. The number of toilets shall be determined by State code;
3. At least one hand washing sink must be conveniently located within all toilet rooms;
4. One open top waste receptacle shall be located below the towel dispenser in each rest room;
5. One closed top waste receptacle shall be located in each women's rest room stall;
6. Handwashing signs must be posted in each restroom that an employee uses.

JANITOR STATION

1. At least one service/utility/mop sink or curbed cleaning facility must be provided and conveniently located for cleaning mops and disposal of wastewater. The station must have hot and cold water, under pressure that is connected to a mixing faucet;
2. Chemical dispensers at mop sinks must be installed in accordance with plumbing codes and rules;
3. Wall finishes should be smooth, durable and easily cleanable to a height of at least four feet;
4. Floors must be made of material that is smooth, non-absorbent, easily cleanable and durable;
5. An area should be designated for the proper storage of maintenance equipment and cleaning supplies;
6. The janitorial station should be conveniently located for maintenance of food service areas, but shall be separated from food preparation and food storage areas;
7. Facilities shall be provided to allow mops to air-dry without soiling walls, equipment or supplies. A mop hanger and broom rack should be provided to elevate items such as mops, brooms and dustpans off the floor.

UTILITIES

Plumbing

All plumbing for water and wastewater systems shall be installed in accordance with state plumbing code.

Utility Service Lines

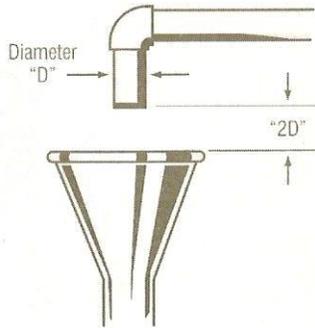
1. Utility service lines and pipes shall not be unnecessarily exposed;
2. Exposed utility service lines and pipes shall be installed to not obstruct or prevent cleaning of floors, walls, or ceilings;
3. Exposed utility service lines and pipes shall not be installed directly on walls or floors, except for quick disconnect gas hoses approved by the American Gas Association or NSF International.

Potable Water Backflow Protection

1. Water inlets shall have an air gap between the water inlet and the flood rim of the fixture. The air gap shall be two times the diameter of the water inlet pipe or faucet. Any water inlet or faucet that does not meet this requirement shall be considered a submerged inlet. Any water inlet to which a hose can be attached shall be considered a submerged inlet;
2. Vacuum breakers shall be installed on any submerged inlet such as toilets, urinals, dishwashers, garbage grinders, and any threaded water outlets. Toilets must have anti-siphon ball cock assemblies;
3. Double-check valves with atmospheric vents or reduced pressure zone backflow preventers are required on any water outlet on which a vacuum breaker cannot be installed after the last shut-off valve or solenoid switch (i.e. pressure spray hoses). Backflow prevention shall be located in the water line to the carbonator, preferably between the pump and the carbonator;
4. Chemical dispensing systems shall have approved backflow devices;

Indirect Wastewater Connections

An indirect waste connection discharges waste through a trap and an air gap into the sewer system.



1. Air gaps are required on walk-in refrigerators, walk-in freezers, ice machines, steam tables, steam cookers, ice bins, salad bars, dipper wells and other similar food equipment must be indirectly plumbed to the sewer system.
2. The air gap for fixtures subject to negative pressure between the indirect waste system and the building drainage shall be at least twice the effective diameter of the pipe, but no less than one inch. All other air gaps shall be at least one inch;
3. Indirect waste pipes shall not discharge into hand sinks, food-prep sinks or multi-compartment sinks.

Water Supply

An adequate supply of potable water shall be provided from a municipal water supply or non-community public water supply that meets state code.

Water Heater

1. A water heater for food service meeting NSF Standard 5 should be provided and appropriately sized for the operation of the establishment;
2. A water heater pressure relief valve is required and must end at least 18 inches above the floor. The relief valve shall be directed to the sanitary sewer;

PEST CONTROL

1. Outer openings shall be protected against the entry of insects, rodents and other pests by:
 - ▶ Eliminating holes and other gaps on exterior of building
 - ▶ Installation of tight-fitting windows and screens that have at least 16-mesh per square inch
 - ▶ Self-closing, tight-fitting doors
 - ▶ Properly designed and installed air curtains, or
 - ▶ Other effective means
2. Inside the establishment, hollow enclosures should be eliminated to prevent pest harborage environments, such as under cabinets, shelving and foundations for booth seating

SEWAGE DISPOSAL

1. Sewage shall be discharged into a municipal sewer system or an on-site sewage treatment system, which meets State plumbing code requirements. Contact the Vilas County Planning and Zoning Department for information on septic system requirements.
2. Grease removal devices shall be installed in accordance with State plumbing code. A grease trap should be easily accessible for cleaning.
3. Sewage and waste lines should not be located directly above food preparation, food display, food storage, or dishwashing and storage areas.

SOLID WASTE

1. Trash containers shall be insect/rodent resistant with tight-fitting lids;
2. Interior garbage storage rooms shall meet the same finish requirements as splash zones in food preparation areas;
3. Inside the establishment, an area of sufficient size shall be provided for the storage of solid waste and recyclable materials. The area shall be separate from food preparation and food storage areas;
4. Outdoor trash storage surfaces should be constructed of concrete, asphalt or other nonabsorbent material. The surface should be smooth, durable and sloped to drain;

EMPLOYEE AREAS

1. If employees routinely change clothes in the establishment, areas shall be designated for dressing;
2. If needed, lockers or other suitable facilities shall be provided for the orderly storage of employees' clothing and other possessions including smoking items, which should not be kept with a food worker in the kitchen;
3. Lockers or other suitable facilities shall be located in areas where contamination of food, equipment, utensils, linens, and single-use articles cannot occur;
4. Designated employee break areas shall be located where possible contamination of food, equipment, linens, and single-use articles is minimized.

LAUNDRY FACILITIES

1. If installed, a mechanical clothes washer shall be used where there is no exposed food, clean equipment, utensils or unwrapped, single-use articles;
2. If a mechanical dryer is provided, it shall be located where there is no exposed food, clean equipment, utensils or unwrapped, single-use articles.

LIGHTING

1. Food processing and preparation areas must be provided with at least 50 foot-candles of light on working surfaces. This requirement includes areas where there are ventilation hoods over cooking equipment, but does not include areas where alcoholic beverages are prepared;
2. Dishwashing and food storage areas must be provided with at least 20 foot-candles of light, which includes bar-service areas where glasses are washed;
3. Walk-in refrigerators and freezers must be provided with at least 10-foot candles of light;
4. All light bulbs in food preparation, food display, food service, food storage, dishwashing and utensil storage areas shall be shielded, coated or otherwise shatter resistant;
5. Infrared or other heat lamps shall be protected against breakage by a shield surrounding and extending beyond the bulb, leaving only the face of the bulb exposed.