

SF-35 Addendum
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Mid-Ohio Valley Health Department

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Plan Review Information Packet
For
Food Service Establishments

Plan Review Information Packet for Food Service Establishments

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Please remember to consult with you local health department Sanitarian to determine if there are local ordinances in place that may change any of the information in this guidebook. Also, the Sanitarian will be able to assist you if questions arise during the planning, construction, or renovation phase of your project.

INTRODUCTION

This food establishment Plan Review document has been developed for the purpose of assisting both regulatory and industry personnel in achieving greater uniformity in the plan review process.

Plan review of food service establishments, retail food stores, and all other food operations, must be maintained as a high priority by all regulatory food agencies for both new and existing facilities.

This document has been developed to serve as a guide in facilitating greater uniformity and ease in conducting plan review whether your position is a regulator or an industry person wishing to build or to expand. You need not be an expert to effectively complete this process.

A good review of plans helps to avoid future problems. By listing and locating equipment on floor plans and diagramming specifications for electrical, mechanical and plumbing systems, potential problems can be spotted while still on paper and modifications made BEFORE costly purchases, installation and construction.

Food establishment plan review is recognized as an important food program component that allows:

- Regulatory agencies to ensure that food establishments are built or renovated according to current regulations or rules.
- Industry to establish an organized and efficient flow of food.
- Regulatory agencies to eliminate code violations prior to construction.

The 2005 Food Code (which contains the recommendations of the United States Public Health Service, FDA and consists of model requirements for safeguarding public health and ensuring food is unadulterated and honestly presented when offered for sale to the consumer), is used as a reference in completing this guide.

Questions to Consider:

1. *Will the menu offer food that requires extensive preparation (washing, cutting, mixing, etc.)?

The number and placement of hand sinks becomes more important with more complex food preparation. A culinary sink is needed for washing fruits and vegetables and for other preparation.

2. *What hours will the food service be open?... lunch and dinner?... 24 hours per day?

Increased equipment capacity and storage space should be considered for establishments with extended hours of operation. Highly durable floor, wall and ceiling finishes should be considered.

3. *How much food will be cooked and immediately served, or prepared in advance for later service?

Preparing food in advance requires more refrigeration space for thawing foods, cooling hot foods, and storing of cold foods.

4. *How often will supplies be delivered?

The delivery frequency is important in determining the amount of refrigerated, frozen and dry food storage space.

5. *What is the maximum number of employees working on one shift?

The number of employees is necessary to determine work/aisle space and the number of lockers to provide.

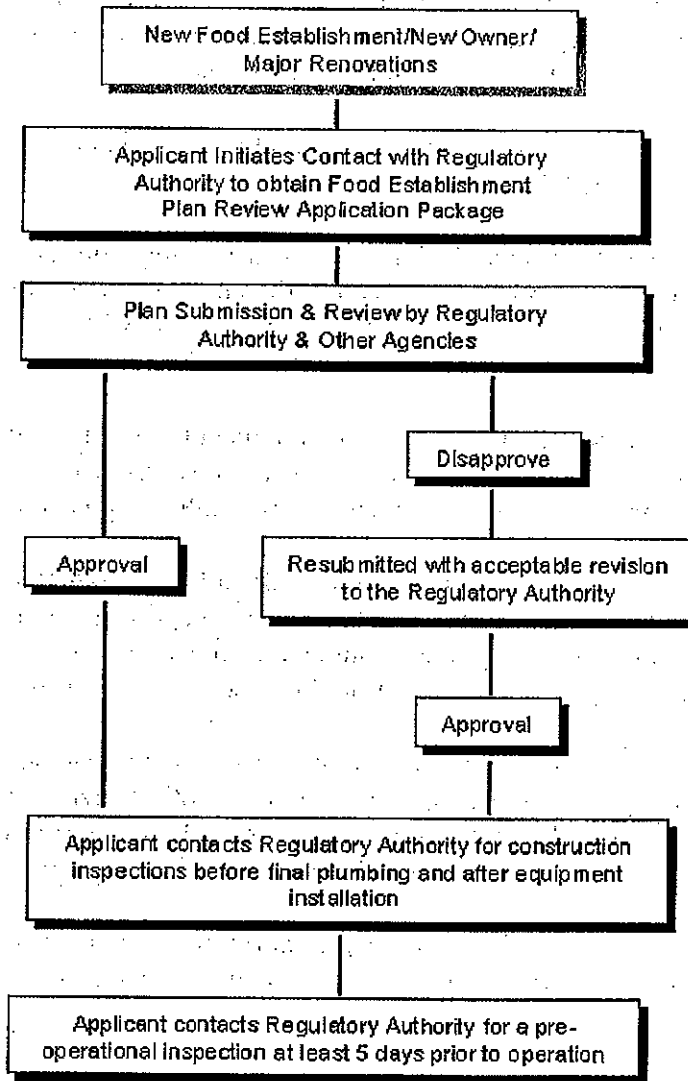
6. *Have you or any of your employees been trained in food safety or Hazard Analysis Critical Control Point (HACCP) concepts?

Training in both food safety principles and HACCP principles provides you and your employees with insight into the numerous hazards encountered in a food establishment.

Specific Instructions to Applicants:

1. Fill out Section I.
2. Provide blueprints & equipment specification sheets.
3. Include proposed menu.
4. Provide site plan.
5. Keep copy for personal records.
6. Submit to Regulatory Authority for review.

PLAN REVIEW PROCESS FLOW CHART



- DEFINITIONS

"Acceptable food equipment" means food equipment that is deemed to be in conformance with Food Code provisions such as equipment that is certified or classified for sanitation by an American National Standards Institute (ANSI)-accredited certification program. Such equipment is deemed to comply with Parts 4-1 and 4-2 of the Food Code.

Under ANSI document CA-1 ANSI Policy and Criteria for Accreditation of Certification Programs, it has been stipulated that:

"For food equipment programs, standards that establish sanitation requirements shall be specified government standards or standards that have been ratified by a public health approval step. ANSI shall verify that this requirement has been met by communicating with appropriate standards developing organizations and governmental public health bodies."

The term "certified" is used when an item of food equipment has been evaluated against an organization's own standard. The term "classified" is used when one organization evaluates an item of food equipment against a standard developed by another organization.

"Air Break" means a piping arrangement in which a drain from a fixture, appliance, or device discharges indirectly into another fixture, receptacle or interception at a point below the flood level rim. The connection does not provide an unobstructed vertical distance and is not solidly connected but precludes the possibility of backflow to a potable water source

"Air Gap" means the unobstructed vertical distance through the free atmosphere between the lowest opening from any pipe or outlet supplying fixture, or other device, and the flood level rim of the receptacle. The vertical physical separation shall be at least two times the inside diameter of the water inlet pipe above the flood rim level but shall not be less than one inch.

"Approved" means acceptable to the regulatory authority based on a determination of conformity with principles, practices, and generally recognized standards that protect public health.

"Backflow" means the flow of water or other liquids, mixtures, or substances into the distributing pipes of a potable supply of water from any source or sources other than its intended source. Back-siphonage is one type of backflow.

"Backflow Preventer" means a device or means to prevent backflow.

"Back-siphonage" means the flowing back of used, contaminated, or polluted water from a plumbing fixture or vessel or other sources into a potable water supply pipe due to a negative pressure in such pipe.

"Corrosion-resistant material" means free of cracks or other openings that allow the entry or passage of moisture.

"Easily Disassembled Equipment" means equipment that is accessible for cleaning and inspection by:

- (a) Disassembling without the use of tools, or
- (b) Disassembling with the use of handheld tools commonly available to maintenance and cleaning personnel such as screwdrivers, pliers, open-end wrenches, and Allen wrenches.

"Easily Movable" means:

- (a) Weighing 14 kg (30 pounds) or less; mounted on casters, gliders, or rollers; or provided with a mechanical means requiring no more than 14 kg (30 pounds) of force to safely tilt a unit of equipment for cleaning; and
- (b) Having no utility connection, a utility connection that disconnects quickly, or a flexible utility connection line of sufficient length to allow the equipment to be moved for cleaning of the equipment and adjacent area.

"Equipment"

(a) **"Equipment"** means an article that is used in the operation of a food establishment such as a freezer, grinder, hood, ice maker, meat block, mixer, oven, reach-in refrigerator, scale, sink, slicer, stove, table, temperature measuring device for ambient air, vending machine, or warewashing machine.

(b) **"Equipment"** does not include items used for handling or storing large quantities of packaged foods that are received from a supplier in a cased or overwrapped lot, such as hand trucks, forklifts, dollies, pallets, racks, and skids.

"Facility" See **"Physical facilities"**

"Food Employee" means an individual working with unpackaged food, food equipment or utensils, or food-contact surfaces

§64-17-4. West Virginia Definition of Food Establishment.

4.1. Food establishment -- An operation that stores, prepares, packages, serves, vends, or otherwise provides food for human consumption:

4.1.a. Such as a restaurant; satellite or catered feeding location; catering operation if the operation provides food directly to a consumer or to a conveyance used to transport people; market; vending location; conveyance used to transport people; institution; or food bank; and

4.1.b. That relinquishes possession of food to a consumer directly, or indirectly through a

delivery service such as home delivery of grocery orders or restaurant takeout orders, or delivery service that is provided by common carriers;

4.2 Food establishment includes;

4.2.a. An element of an operation such as transportation vehicle or a central preparation facility that supplies a vending location or satellite feeding location unless the vending or feeding location obtains a permit to operate in accordance with part 8-3 of the Food Code;

4.2.b. An operation that is conducted in a mobile, stationary, temporary, or permanent facility or location; where consumption is on or off the premises; and regardless of whether there is a charge for the food; and

4.2.c. An operation that offers cooking demonstrations or instruction, with or without student participation, and the food is then consumed on or off premises.

4.3. Food establishment shall not include:

4.3.a. An establishment that offers only prepackaged foods that are not potentially hazardous and does not provide reusable tableware to the consumer;

4.3.b. A produce stand that only offers whole, uncut fresh fruits and vegetables;

4.3.c. A food processing plant;

4.3.d. A kitchen in a private home if only food that is not potentially hazardous is prepared for sale or service at a function such as a religious or charitable organization's bake sale and if the consumer is informed by a clearly visible placard at the sales or service location that the food is prepared in a kitchen that is not subject to regulation and inspection by the Commissioner;

4.3.e. An area where food that is prepared as specified in subdivision 4.3.d. of this subsection is sold or offered for human consumption;

4.3.f. A kitchen in a family child care home; or

4.3.g. A private home that receives catered or home-delivered food.

"HACCP Plan" means a written document that delineates the formal procedures for following the Hazard Analysis Critical Control Point principles developed by The National Advisory Committee on Microbiological Criteria for Foods.

"Highly susceptible population" means a group of persons who are more likely than other populations to experience foodborne disease because they are immunocompromised or older adults and in a facility that provides health care or assisted living services; such as a hospital or nursing home; or preschool age children in a facility that provides custodial care, such as a day care center.

"**Linens**" means fabric items such as cloth hampers, cloth napkins, table cloths, wiping cloths, and work garments including cloth gloves.

"**Physical facilities**" means the structure and interior surfaces of a food establishment including accessories such as soap and towel dispensers and attachments such as light fixtures and heating or air conditioning system vents.

"**Plumbing fixture**" means a receptacle or device that:

(a) Is permanently or temporarily connected to the water distribution system of the premises and demands a supply of water from the system; or

(b) Discharges used water, waste materials, or sewage directly or indirectly to the drainage system of the premises.

"**Plumbing system**" means the water supply and distribution pipes; plumbing fixtures and traps; soil, waste, and vent pipes; sanitary and storm sewers and building drains, including their respective connections, devices, and appurtenances within the premises; and water-treating equipment.

"**Potentially Hazardous Food**" (PHF)

(a) "**Potentially hazardous food**" means a food that is natural or synthetic and that requires temperature control because it is in a form capable of supporting:

(i) The rapid and progressive growth of infectious or toxigenic microorganisms;

(ii) The growth and toxin production of *Clostridium botulinum*; or

(iii) In raw shell eggs, the growth of *Salmonella enteritidis*.

(b) "**Potentially hazardous food**" includes an animal food (a food of animal origin) that is raw or heat-treated; a food of plant origin that is heat-treated or consists of raw seed sprouts; cut melons; and garlic and oil mixtures that are not acidified or otherwise modified at a food processing plant in a way that results in mixtures that do not support growth as specified under Subparagraph (a) of this definition.

(c) "**Potentially hazardous food**" does not include:

(i) An air-cooled hard-boiled egg with shell intact;

(ii) A food with an a_w value of 0.85 or less;

(iii) A food with a pH level of 4.6 or below when measured at 24°C (75°F);

(iv) A food, in an unopened hermetically sealed container, that is commercially processed to achieve and maintain commercial sterility under conditions of nonrefrigerated storage and distribution; and

(v) A food for which laboratory evidence demonstrates that the rapid and progressive growth of infectious or toxigenic microorganisms or the growth of *S. enteritidis* in eggs or *C. botulinum* can not occur, such as a food that has an a_w and a pH that are above the levels specified under Subparagraphs (c)(ii) and (iii) of this definition and that may contain a preservative, other barrier to the growth of microorganisms, or a combination of barriers that inhibit the growth of microorganisms.

(vi) A food that may contain an infectious or toxigenic microorganism or chemical or physical contaminant at a level sufficient to cause illness, but that does not support the growth of microorganisms as specified under Subparagraph (a) of this definition.

"Premises" means:

(a) The physical facility, its contents, and the contiguous land or property under the control of the permit holder; or

(b) The physical facility, its contents, and the land or property not described under Subparagraph (a) of this definition if its facilities and contents are under the control of the permit holder and may impact food establishment personnel, facilities, or operations, if a food establishment is only one component of a larger operation such as a health care facility, hotel, motel, school, recreational camp, or prison.

"Refuse" means solid waste not carried by water through the sewage system.

"Regulatory Authority" means the local, state, or federal enforcement body or authorized representative having jurisdiction over the food establishment.

"Safe material" means:

(a) An article manufactured from or composed of materials that may not reasonably be expected to result, directly or indirectly, in their becoming a component or otherwise affecting the characteristics of any food;

(b) An additive that is used as specified in ? 409 or 706 of the Federal Food, Drug, and Cosmetic Act; or

(c) Other materials that are not additives and that are used in conformity with applicable regulations of the Food and Drug Administration.

"Sealed" means free of cracks or other openings that allow the entry or passage of moisture.

"Sewage" means liquid waste containing animal or vegetable matter in suspension or solution and may include liquids containing chemicals in solution.

"Smooth" means:

(a) A food-contact surface having a surface free of pits and inclusions with a cleanability equal to or exceeding that of (100 grit) number 3 stainless steel;

(b) A nonfood-contact surface of equipment having a surface equal to that of commercial grade hot-rolled steel free of visible scale; and

(c) A floor, wall, or ceiling having an even or level surface with no roughness or projections that render it difficult to clean.

"Vacuum Breaker" See **"Backflow Preventer"**

Acknowledgements:

FDA and CFP Plan Review Guide Team

WV Food Safety and Defense Task Force

SECTION 1 – MENU AND FLOW

The menu review and the flow of food through the facility are integral parts of the plan review process. The menu or a listing of all of the food and beverage items to be offered at the food establishment must be submitted by the applicant to the regulatory authority with the submission of all other Plan Review application documents.

As with the inspection process, the plan review process should focus on the food and its flow through receipt, storage, preparation and service. The source and quantity of food to be served should be reviewed along with the preparation and post-preparation operations. It is imperative to have a knowledge of this information so that a proper assessment of the physical facilities can be made.

Layout, flow and menu (including food preparation processes) should be major considerations to help facilitate an operator's Active Managerial Control (AMC) of the risk factors for foodborne illness. Strategic layout and placing of facilities and equipment will separate different food preparation processes, a major step towards preventing contamination of food that may result from poor personal hygiene, contaminated equipment, and improper holding temperatures. Adequate and convenient storage will also enhance operations. The menu and methods of food preparation are the key elements in the layout and flow of the establishment.

Food preparation processes should be evaluated to determine the types and volumes of foods to be prepared. Special attention should be given to the review of complex food processes which involve:

- Multiple ingredients being assembled or mixed
- Potentially hazardous foods (time/temperature control for safety foods)
- Foods which will be prepared or held for several hours prior to service
- Foods requiring cooling and reheating
- Multiple step processing (passing through the critical temperature zone, 135°F - 41°F more than once)

The process approach can be described as dividing the many flows in an establishment into broad categories, analyzing the risks, and placing manager controls on each grouping. These groupings will also impact the facility design; food flow; and the numbers, types, function and placement of equipment.

The food that flows through retail food establishment operations can be placed into the 3 following processes:

- **FOOD PROCESSES WITH NO COOK STEP**
 - **Receive – Store - Prepare – Hold – Serve**
(Other processes may occur, but there is **NO cooking step**)
 - **Examples: Salads, deli meats, cheeses, sashimi, raw oysters**
- **FOOD PREPARATION FOR SAME DAY SERVICE**

- **Receive – Store - Prepare - Cook – Hold – Serve**
(Other processes may occur, including thawing)
- Examples: Hamburgers, fried chicken, hot dogs

- **COMPLEX PROCESSES**
 - **Receive – Store - Prepare – Cook – Cool – Reheat – Hot Hold – Serve**
(Other processes may occur, but the key is repeated trips through the temperature danger zone)
 - Examples: Refried beans, leftovers

The system is very useful since the critical control points for each process remain the same regardless of the individual menu ingredients.

The menu for a food establishment dictates the space and equipment requirements for the safe preparation and service of various food items. The menu will determine if the proposed receiving and delivery areas, storage area, preparation and handling areas, and thawing, cooking and reheating areas are available and adequate to handle the types and volumes of foods being prepared and served.

When reviewing the menu, it is important to evaluate the flow patterns for the preparation of the food to be sure that the lay-out of the facility provides an adequate separation of raw ingredients from ready-to-eat foods, and that the traffic patterns are not crossing paths with waste items and other sources of contamination. Cross contamination can be minimized when the flow of food is considered during plan review.

With a proper understanding of the menu and flow, the plans for food establishments can be reviewed to help assure that the food items being considered can be protected during all aspects of the food operation.

Equipment and facilities can be evaluated by following the food flow processes.

Food Flow Process with NO COOK STEP	Receive	Store	Prepare	Hold	Serve
Equipment & Facilities that may be used	Thermometers	Dry Storage Refrigerated Storage Frozen Storage Thermometers	Preparation Tables Cutting Boards Utensils Handwash Sinks Preparation Sinks Refrigerators	Refrigerators Ice Cold Holding Facilities Thermometers Handwashing Sinks	Cold Holding Facilities at the Service Area Thermometers Handwashing Sinks

Food Preparation for SAME DAY SERVICE	Receive	Store	Prepare	Cook	Hold	Serve
Equipment & Facilities that may be used	Thermometers	Dry Storage Refrigerated Storage Frozen Storage Thermometers	Preparation Tables Cutting Boards Utensils Handwash Sinks Preparation Sinks Refrigerators	Cooking Equipment -Fryers -Ovens -Broilers -Grills -Cook Tops -Griddles -Other Thermometers Handwashing Sinks	Refrigerators Ice Cold Holding Facilities Hot Holding Facilities Food Warmers Preparation Worktops/Tables Thermometers Handwashing Sinks	Cold Holding Facilities at the Service Area Thermometers Handwashing Sinks

Complex Processes	Receive	Store	Prepare	Cook	Cool	Reheat	Hold	Serve
Equipment & Facilities that may be used	Thermometers	Dry Storage Refrigerated Storage Frozen Storage Thermometers	Preparation Tables Cutting Boards Utensils Handwash Sinks Preparation Sinks Refrigerators	Cooking Equipment -Fryers -Ovens -Broilers -Grills -Cook Tops -Griddles -Other Thermometers Handwashing Sinks	Preparation Sinks Ice Baths Blast Chillers Shallow Pans Refrigerators Chill Sticks Thermometers Handwashing Sinks Preparation Tables Other	Fryers Ovens Grills Burners Griddles Other Handwashing Sinks	Refrigerators Ice Cold Holding Facilities Hot Holding Facilities Food Warmers Preparation Worktops/Tables Thermometers Handwashing Sinks	Cold Holding Facilities at the Service Area Thermometers Handwashing Sinks

SECTION 2- FACILITIES TO MAINTAIN PRODUCT TEMPERATURE

Hot-holding and cold-holding facilities must be designed, constructed and installed to comply with Chapter 4 of the FDA Food Code. Food equipment that is certified or classified for sanitation by an ANSI accredited program is deemed to comply with Parts 4-1 and 4-2 of the FDA Food Code.

REFRIGERATION SIZING AND DESIGN

Plan review must consider the need to provide adequate refrigeration facilities for the proper storage, transportation, display, and service of PHF(TCS) food. Specific refrigeration needs are based on the menu, number of meals, frequency of deliveries, and food to be prepared in advance of service. All refrigerators must be capable of maintaining PHF(TCS) food at 41°F or below.

If PHF(TCS) foods are prepared a day or more in advance of service, a rapid cooling procedure capable of cooling PHF(TCS) foods from 135°F to 41°F within 6 hours (135°F to 70°F within 2 hrs.) must be provided. The capacity of the rapid cooling facilities must be sufficient to accommodate the volume of food required to be cooled to 41°F within 6 hours. The location of the rapid cooling facilities (e.g., sinks for ice baths, freezer storage for ice wands, blast chillers) must be identified. Refrigerators and freezers at work stations for operations requiring preparation and handling of PHF(TCS) foods should be considered. For example, it may be necessary to locate a freezer near the fryer where frozen products will be deep-fried. Refrigeration units, unless designed for such use, should not be located directly adjacent to cooking equipment or other high heat producing equipment which may adversely impact the cooling system's operation.

CALCULATING REFRIGERATED STORAGE NEEDS

To plan refrigeration storage, the following items should be considered: menu, type of food operation, number of meals per day, number of deliveries per week, and adequate ventilation in the areas where the refrigeration systems will be located.

One formula that can be used to establish required walk-in refrigeration storage is:

Total Interior Storage Volume Needed:

$$\frac{\text{Volume per meal}^1 (\text{ft.}^3) \times \text{number of meals between deliveries}}{.40^2}$$

For example, if a food establishment serves 1,000 meals between deliveries, the following refrigerated walk-in storage capacity would be needed:

$$\frac{0.1 \text{ ft.}^3/\text{meal} \times 1000 \text{ meals}}{.40} = 250 \text{ cubic feet}$$

¹ Volume per meal is estimated to be 0.1 cubic feet

² Only 40% of any walk-in unit actually provides usable space.

The following charts are based on the volume of the meals, number of meals served and frequency of delivery.
Note: To calculate the interior floor area (ft²) required for walk-in refrigeration units using the following charts, divide the storage volume by the height of the unit.

COLD STORAGE CHART FOR WALK-IN UNITS
 0.10 Cu.Ft. per meal for all cold storage products

Number of meals served between deliveries	Storage volume of walk-in Cu.Ft.	Number of meals served between deliveries	Storage volume of walk-in Cu.Ft.	Number of meals served between deliveries	Storage volume of walk-in Cu.Ft.
200	50.00	1050	262.50	2050	512.50
250	62.50	1100	275.00	2100	525.00
300	75.00	1150	287.50	2150	537.50
350	87.50	1200	300.00	2200	550.00
400	100.00	1250	312.50	2250	562.50
450	112.50	1300	325.00	2300	575.00
500	125.00	1350	337.50	2350	587.50
550	137.50	1400	350.00	2400	600.00
600	150.00	1450	362.50	2450	612.50
650	162.50	1500	375.00	2500	625.00
700	175.00	1550	387.50	2550	637.50
750	187.50	1600	400.00	2600	650.00
800	200.00	1650	412.50	2650	662.50
850	212.50	1700	425.00	2700	675.00
900	225.00	1750	437.50	2750	687.50
950	237.50	1800	450.00	2800	700.00
1000	250.00	1850	462.50	2850	712.50
		1900	475.00	2900	725.00
		1950	487.50	2950	737.50
		2000	500.00	3000	750.00

One formula that can be used to establish required reach-in refrigeration storage is:

Total Interior Storage Volume Needed:

$$\frac{\text{Volume per meal}^3 (\text{ft.}^3) \times \text{number of meals between deliveries}}{.75^4}$$

For example, if a food establishment serves 1,000 meals between deliveries, the following reach-in refrigerated storage capacity would be needed:

$$\frac{0.1 \text{ ft.}^3/\text{meal} \times 1000 \text{ meals}}{.75} = 133 \text{ cubic feet}$$

³ Volume per meal is estimated to be 0.1 cubic feet
⁴ Only 75% of any reach-in unit actually provides usable space.

STORAGE CHART FOR REACH-IN UNITS
0.10 Cu.Ft. per meal for all cold storage products

Number of meals served between deliveries	Storage volume of reach-in Cu. Ft.	Number of meals served between deliveries	Storage volume of reach-in Cu. Ft.	Number of meals served between deliveries	Storage volume of reach-in Cu. Ft.
200	26.67	1050	140.00	2050	273.33
250	33.33	1100	146.67	2100	280.00
300	40.00	1150	153.33	2150	286.67
350	46.67	1200	160.00	2200	293.33
400	53.33	1250	166.67	2250	300.00
450	60.00	1300	173.33	2300	306.67
500	66.67	1350	180.00	2350	313.33
550	73.33	1400	186.67	2400	320.00
600	80.00	1450	193.33	2450	326.67
650	86.67	1500	200.00	2500	333.33
700	93.33	1550	206.67	2550	340.00
750	100.00	1600	213.33	2600	346.67
800	106.67	1650	220.00	2650	353.33
850	113.33	1700	226.67	2700	360.00
900	120.00	1750	233.33	2750	366.67
950	126.67	1800	240.00	2800	373.33
1000	133.33	1850	246.67	2850	380.00
		1900	253.33	2900	386.67
		1950	260.00	2950	393.33
		2000	266.67	3000	400.00

ADDITIONAL REQUIREMENTS AND RECOMMENDATIONS FOR
REFRIGERATED AND FROZEN STORAGE FACILITIES

- A. All refrigeration units must have numerically scaled indicating thermometers accurate to $\pm 3^{\circ}\text{F}$. Temperature sensing devices must be located in the unit to measure air temperature in the warmest part of the refrigerator (usually near a door opening). Refrigerators and freezers shall be capable of maintaining required temperatures.
- B. Air circulation within refrigeration and freezer units should not be obstructed and should allow for an even and consistent flow of cold air throughout the units.
- C. Interior and exterior floor/wall junctures of walk-in refrigerators and freezers must have approved coved junctures.
- D. The use of galvanized metal in refrigerated storage facilities is subject to rust that may lead to cleaning and durability issues.
- E. Gaps and openings around walk-in refrigerator and freezers must be properly sealed to the walls or properly spaced to allow for cleaning behind and around the units. Reach-in refrigerators and freezers that are fixed in place shall be spaced to allow for cleaning along all sides of the unit or sealed to adjoining equipment or walls. Refer to Section 6 of this document.
- F. Refrigeration and freezer units should not be installed with access from the exterior of the building unless food can be protected when transported from the unit into the food establishment.
- G. If the walk-in floors will be water-flushed for cleaning or receive the discharge of liquid waste or excessive melt water, the floors should be sloped to drain. If the structure of the walk-in is integral with the building, properly installed floor drains may be installed inside the unit.
- H. Each walk-in unit shall be equipped with lighting that provides 10 foot candles of light throughout the unit when it is full of product. Lights must be properly shielded or shatter resistant.
- I. Lockable casters are recommended for reach-in refrigerators and freezers.

RAPID CHILL REFRIGERATION UNITS

Construction and installation of rapid chill refrigeration units (i.e., blast chillers) shall be similar to refrigerated and frozen storage facilities. Rapid chill

refrigeration units must be capable of cooling cooked PHF(TCS) food from 135°F to 41°F within 6 hours (135°F to 70°F within 2 hrs.).

COOKING FACILITIES

A. The types and location of cooking facilities must be based upon the types and methods of food preparation.

B. Cooking facilities must be capable of heating PHF(TCS) food to the minimum time/temperature requirements:

beef roasts	130°F (112 min)	
cooked fruits and vegetables being hot held		135 °F
solid seafood pieces	145°F (15 sec)	
other PHF(TCS) food	145°F (15 sec)	
eggs:		
Immediate service	145°F (15 sec)	
pooled*	155°F (15 sec)	
(*pasteurized eggs must be served to a highly susceptible population)		
pork	145°F (15 sec)	
comminuted meats/fish	155°F (15 sec)	
poultry	165°F (15 sec)	
reheated PHF(TCS) food	165°F (15 sec)	
stuffed fish, meat, pork	165 °F (15 sec)	

C. Cooking equipment must be constructed and installed in accordance with Chapter 4 of the FDA Food Code.

D. Lockable casters with flexible utility lines are recommended to facilitate cleaning. Refer to Section 6 of this document.

E. If cooking equipment uses water or steam, methods for filling and draining the units must be identified.

HOT HOLDING AND REHEATING FACILITIES

- A. Hot holding facilities must be capable of maintaining PHF(TCS) food at an internal temperature of 135°F or above during display, service and holding periods.
- B. Reheating equipment must be capable of raising the internal temperature of PHF(TCS) food rapidly (within a maximum of 2 hours) to at least 165°F. Appropriate product thermometers will be required to monitor the food temperature.
- C. Hot holding and reheating facilities must be constructed and installed in accordance with Chapter 4 of the FDA Food Code.
- D. Lockable casters with flexible utility lines are recommended to facilitate cleaning. Refer to Section 6 of this document.
- E. If hot holding units use water or steam, methods for filling and draining the units must be identified.

SECTION 3 - FACILITIES TO PROTECT FOOD

Adequate facilities must be provided to protect food, promote good hygienic practices, and minimize the potential of cross contamination between ready-to-eat food and raw products.

GENERAL FOOD PROTECTION

Food preparation areas for handling, washing and preparing raw meat, fish, and poultry must be identified. Procedures for cleaning and sanitizing food contact surfaces, equipment, and utensils between use must be identified during plan review.

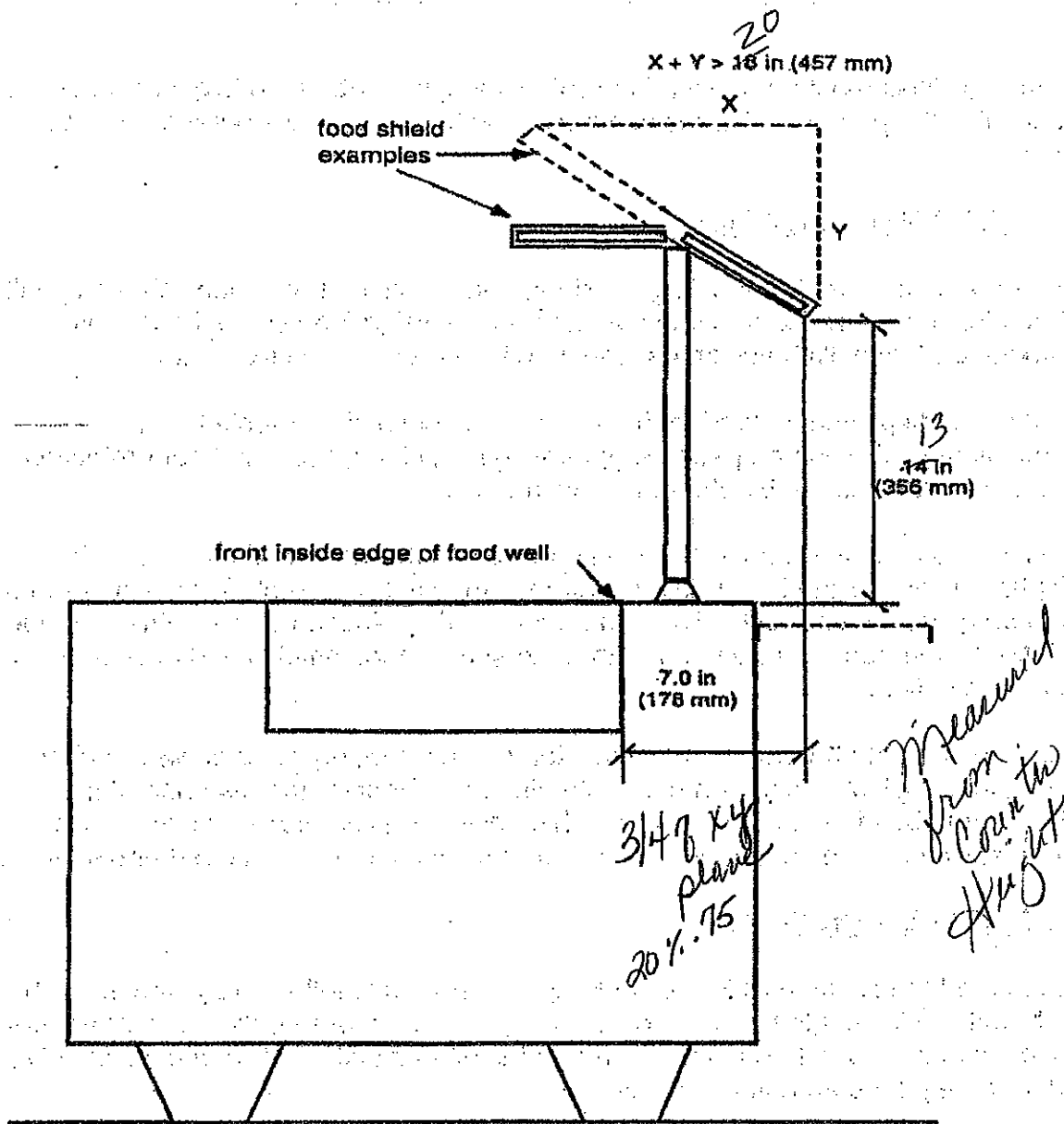
All food being displayed, served, or held must be adequately protected from contamination by the use of: packaging; serving line, storage or salad bar protection devices; display cases; or by other effective means.

Food shields should intercept the direct line between the customer's mouth and the food on display. The average height of a customer's mouth is 4'6" to 5'. This average may have to be adjusted for small children in educational institutions and for other special installations. Figures 3-1 through 3-3 are examples of food shields and how to measure them for protection.

Cleaned equipment and utensils shall be stored in a clean, dry location where they are not exposed to splash, dust, or other contamination. Clean equipment and utensil storage should be identified at utensil-washing areas, plating areas, service areas, salad bars, wait stations and other areas where cleaned items are stored or dispensed.

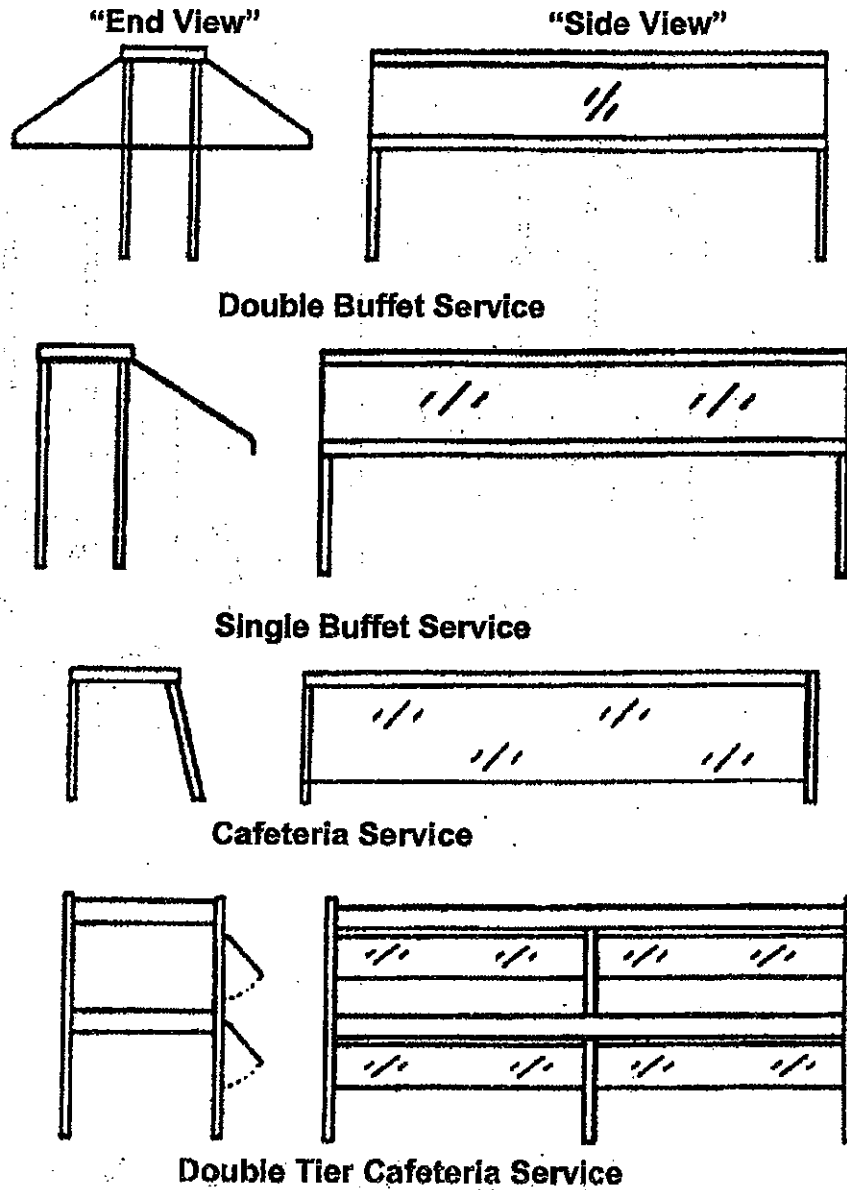
FOOD PREPARATION SINKS

Separate food preparation sinks for working with raw foods followed by working with ready-to-eat foods should be considered. If separate food preparation sink(s) are not proposed, written procedures for cleaning and sanitizing sinks between uses should be provided during the plan review process.



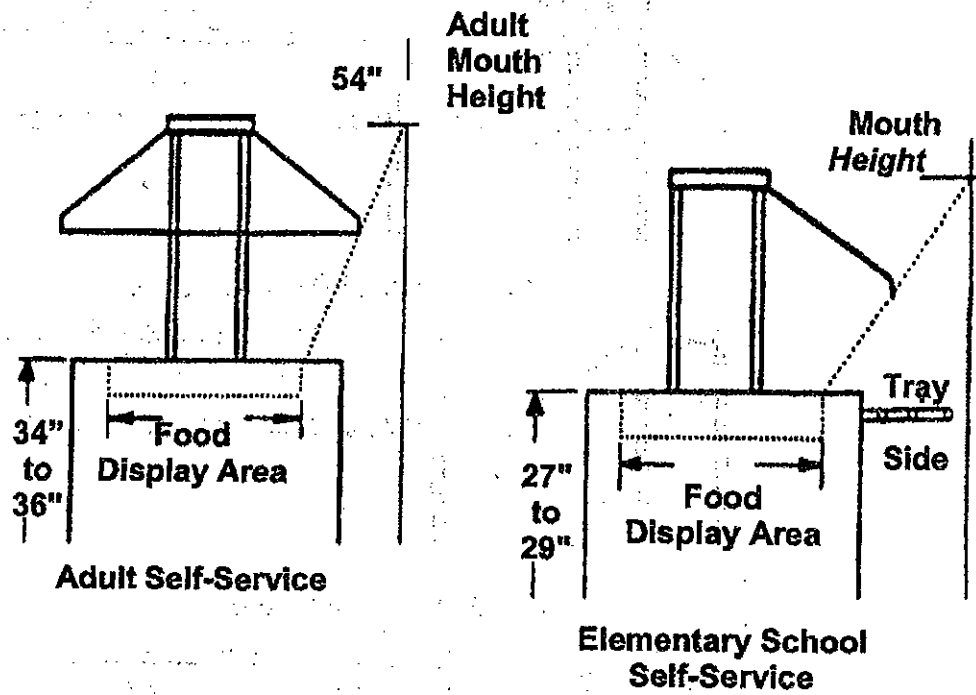
Buffet Food Shields Measured from Counter Top

Figure 3-1



Buffet Food Shields

Figure 3-2



Buffet Food Shields Measured from Floor

Figure 3-3

SECTION 4 – HYGIENE FACILITIES

HANDWASHING

Handwashing is a critical factor to prevent contamination of foods. Proper handwashing reduces the amount of pathogens that can be transmitted via cross contamination from raw foods to ready-to-eat foods. Many employees fail to wash their hands as often as necessary due to the lack of conveniently located handwashing sinks. It is important that handwashing be done only at properly equipped handwashing sinks to help ensure that employees effectively clean their hands and minimize contamination of food and food contact surfaces.

A handwashing sink, hand drying device or disposable towels, hand cleanser and waste receptacle shall be located for convenient use by employees who work in food preparation, food dispensing, and warewashing areas. Nothing must block the approach to a handwashing sink. Handwashing sinks must also be located in or immediately adjacent to toilet rooms. Handwashing sinks shall be of sufficient number and conveniently located for use by all employees in food preparation, food dispensing, and washing areas. Handwashing sinks shall be easily accessible and may not be used for purposes other than handwashing. Sinks used for food preparation or for washing equipment or utensils shall not be used for handwashing.

Each handwashing sink shall be provided with hot and cold water tempered by means of a mixing valve or a combination faucet to provide water at a temperature of at least 100°F. If used, self-closing, slow-closing or metering faucets shall be designed to provide a flow of water for at least 15 seconds without the need to reactivate the faucet.

Splash from use of a handwashing sink may not contaminate food, food contact surfaces, clean equipment or utensils. A washable baffle or barrier may be needed if the handwashing sink is located next to a food preparation or food contact surface and if the space between the handwashing sink and food, food preparation, food contact surfaces, and clean utensils does not provide adequate protection.

Similarly, the location of soap and paper towel dispensers at handwashing sinks must be reviewed during plan review so that their use does not contaminate food and food contact surfaces. In addition, the distance that employees would have to reach the faucet handles, soap and paper towels must be reviewed during plan review to assure that they will have proper access to the handwashing sinks and will not have to reach across dirty surfaces while washing their hands.

TOILET ROOMS

Properly functioning toilet facilities must be accessible to employees at all times.

If required by federal, state, local or tribal laws and regulations, toilet facilities must be made available to the customers. If the public toilet facilities are used by employees, separate toilet facilities may not have to be installed for the employees. Toilet facilities must be made accessible in accordance with the Americans with Disabilities Act (ADA) of 1990.

The floors, walls, and ceiling in toilet rooms shall be smooth and easily cleanable. The walls around toilets, urinals, toilet paper dispensers, soap dispensers, and paper towel dispensers should be water resistant and durable for frequent cleaning.

The minimum requirements for toilet facilities shall include:

Toilet

At least one toilet and not fewer than the number of toilets required by law shall be provided. If authorized by law, urinals may be substituted for toilets in men's toilet rooms.

Handwashing facility

Each handwashing sink shall be provided with hot and cold water tempered by means of a mixing valve or a combination faucet to provide water at a temperature of at least 100°F. If used, self-closing, slow-closing or metering faucets shall be designed to provide a flow of water for at least 15 seconds without the need to reactivate the faucet.

Handwashing cleanser

Each handwashing sink or group of two adjacent handwashing sinks shall be provided with hand cleaning liquid, powder or bar soap. A dispenser shall be provided for handwashing cleanser provided in liquid or powder form.

Hand drying facility

Each handwashing sink or group of adjacent handwashing sinks shall be provided with individual, disposable towels; a continuous towel system that supplies the user with a clean towel; or heated-air hand drying device.

Toilet paper

A supply of toilet paper shall be provided in a dispenser at each toilet.

Waste receptacle

If disposable towels are used, a waste receptacle shall be located at each sink or group of sinks. At least one covered waste receptacle shall be provided in toilet rooms used by females.

Ventilation

Toilet rooms must be vented to the outside.

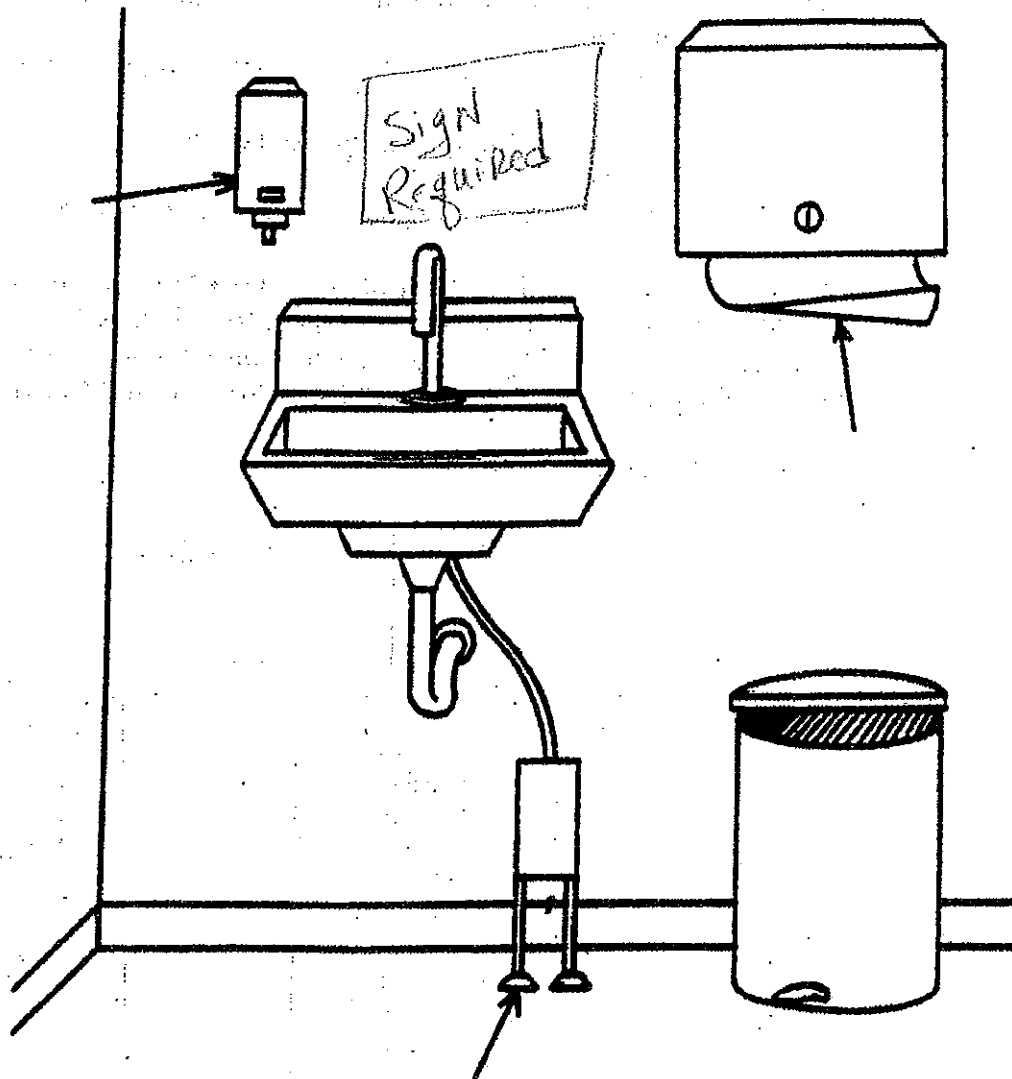
Mechanical ventilation shall be installed in toilet rooms according to law. If allowed by law, openable screened windows may be used in lieu of mechanical ventilation devices.

Toilet room doors

Toilet room doors shall be tight-fitting and self-closing.

Lighting

At least 215 lux (20 foot candles) shall be provided in toilet rooms.



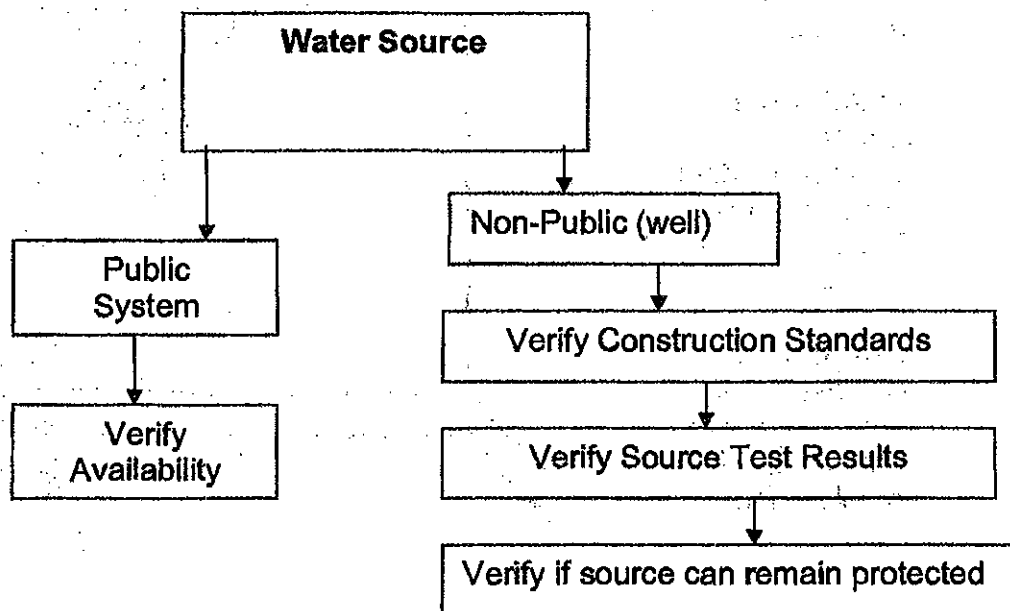
SECTION 5 – WATER SUPPLY AND SEWAGE DISPOSAL

The primary concerns relative to the water supply and sewage disposal in a retail food establishment are to:

- 1) Ensure the facility is supplied with a safe and adequate water supply;
- 2) Verify that the water can remain safe while it is in the facility; and
- 3) Ensure the facility is disposing wastewater properly.

Safe Source: Start at the water source. Determine if the water is potable or non-potable. The availability of an approved public water supply must be verified. Any use of a non-public water source (well water) shall comply with local, state, and/or federal laws, and construction and testing standards.

What you need to review:



Sufficient potable water: Potable water shall be provided from a source constructed and operated according to law that meets the peak water demands of the food establishment.

Hot Water Temperature: The hot water supply shall be sufficient to satisfy peak hot water demands of the establishment. Hot water for handwashing and most food establishment uses shall be at least 100°F. Hot water for mechanical warewashing must be boosted up to 150°F-165°F for washing and 165°F-180°F for sanitizing or according to the manufacturer's data plate on the machine. The temperature of the wash solution for spray-type warewashers that use chemicals