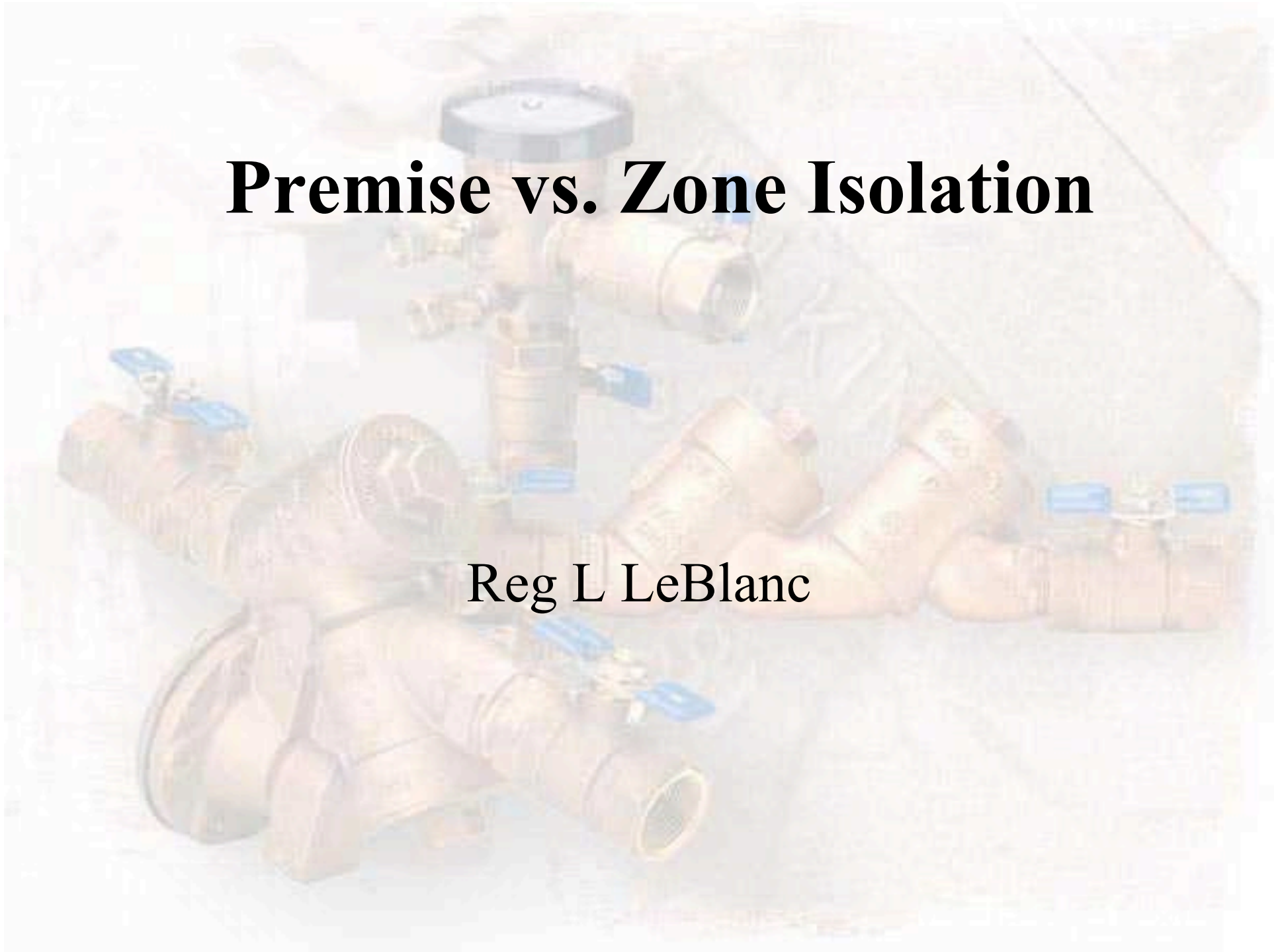


Premise vs. Zone Isolation

Reg L LeBlanc



Definitions

- **Premise Isolation:** Protection provided to protect the public or private water system from contamination that may occur within a user's premises.
- **Individual Protection:** Protection provided at the connection to a fixture or appliance.

Definitions

- **Area Protection:** Protection provided for a section of a piping system with potable and non-potable connections downstream of the backflow preventer.
- **Zone Isolation:** Protection provided for a section of a piping system with no potable connections downstream of the backflow preventer.



Definitions

- **Internal Protection:** Any combination of individual, area or zone protection.

NPC 2.6.2.1

- Connections to potable water systems shall be designed and installed so that non-potable water or substances that may render the water non-potable cannot enter the system.
- This means that *all* water connections/outlets must be properly protected.
- This type of protection is defined as **INDIVIDUAL PROTECTION.**

Definition of Premise Isolation

- NPC: None
- CSA: protection provided at the entrance to a building or [facility](#).
- AWWA CCCC Manual: Preventing backflow into the public water system from a user's premises by installing a suitable backflow preventer at the [user's connection](#).

Why Premise Isolation?

- Installed as protection to the Municipal Water Supply or Private Water Source from potential contamination.
- Does not provide any protection to the consumer within the building from potential contamination..

Code requirement prior to 2005

- **NPC 6.2.6** In addition to the backflow preventer required by this Article for buildings or *facilities* where a potentially severe health hazard may be caused by backflow, the *potable water system* shall be provided with premise or zone isolation by the installation of a *reduced pressure principle backflow preventer*.
(*See Appendix A.*)

Code requirements for Premise Isolation

- **NPC 2.6.2.6** In addition to the backflow preventer required by this Subsection for buildings or *facilities* where a potentially severe health hazard may be caused by backflow, the *potable water system* shall be provided with premise isolation by the installation of a *reduced pressure principle backflow preventer*.
(See Appendix A.)

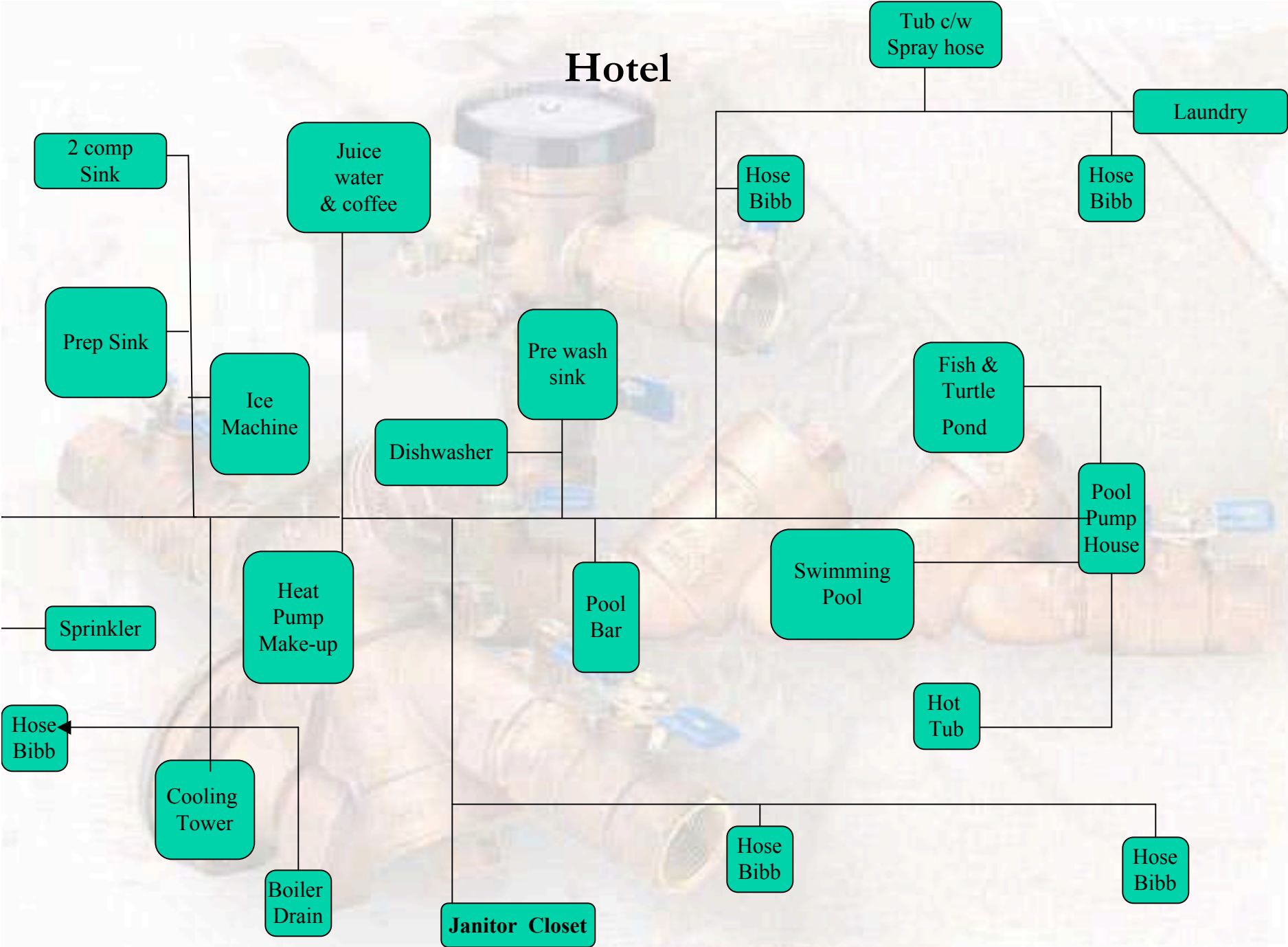
NPC possible wording

- **NPC 2.6.2.6** In addition to the backflow preventer required by this Subsection, for buildings where a potentially severe health hazard may be caused by backflow, premise isolation shall be provided with the installation of a *reduced pressure principle backflow preventer* on the water service pipe or as close as possible to where the water service pipe enters the building.
(See Appendix A.)

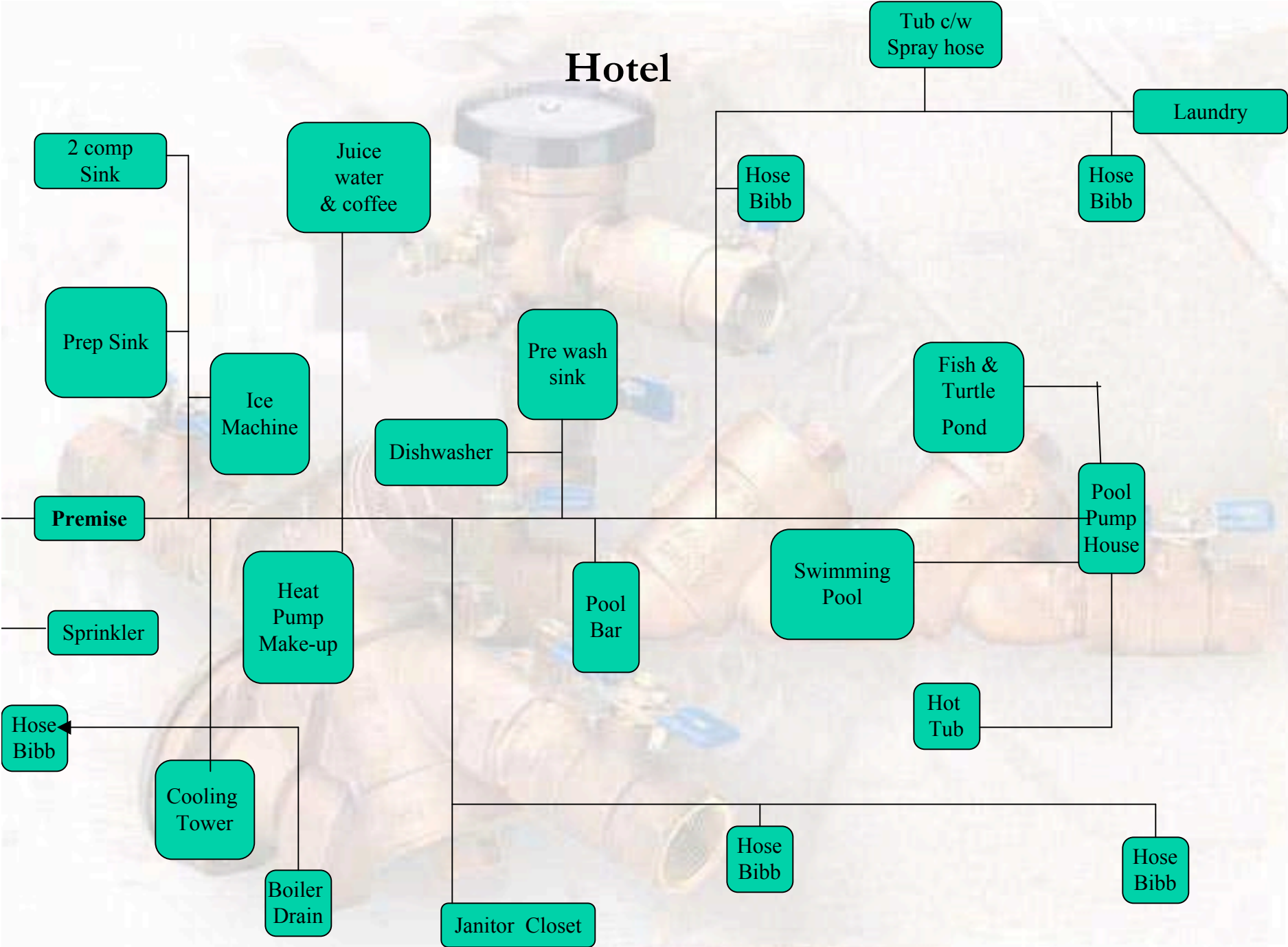
CSA Requirements for Premise Isolation

- 5.3.1.2 Premises isolation shall be provided by the installation of an RP on all water systems where a potentially severe hazard may be caused by backflow.
- 5.3.1.3 Premises isolation for all other water services shall be provided when required by a cross connection control program.

Hotel



Hotel



B & W Definition

- **Premise isolation**
- Protection from backflow installed on the water service pipe or as close as possible to where the water service pipe enters the building.
- **NPC should also carry a definition for Premise isolation**

Area Protection

- Area protection is defined by AWWA CCCManual as;
- Protection provided for a section of a piping system with potable and non-potable connections downstream of a backflow preventer.

Area Protection (CSA)

- Area protection is defined as;
- Protection provided for a section of a piping system with potable and non-potable connections (that may or may not be considered cross-connections) downstream of a backflow preventer.

Potable Water Connection



- Potable water connection is defined as a connection within a piping system that serves a fixture or device installed for human consumption
- Potable water is defined as water that is safe for human consumption.

What is a Non-Potable water connection

- Non-potable water connection is defined as a connection within a piping system that serves a fixture or device that is not intended for human consumption.
- Non-potable water is defined as water that is unsafe for human consumption.

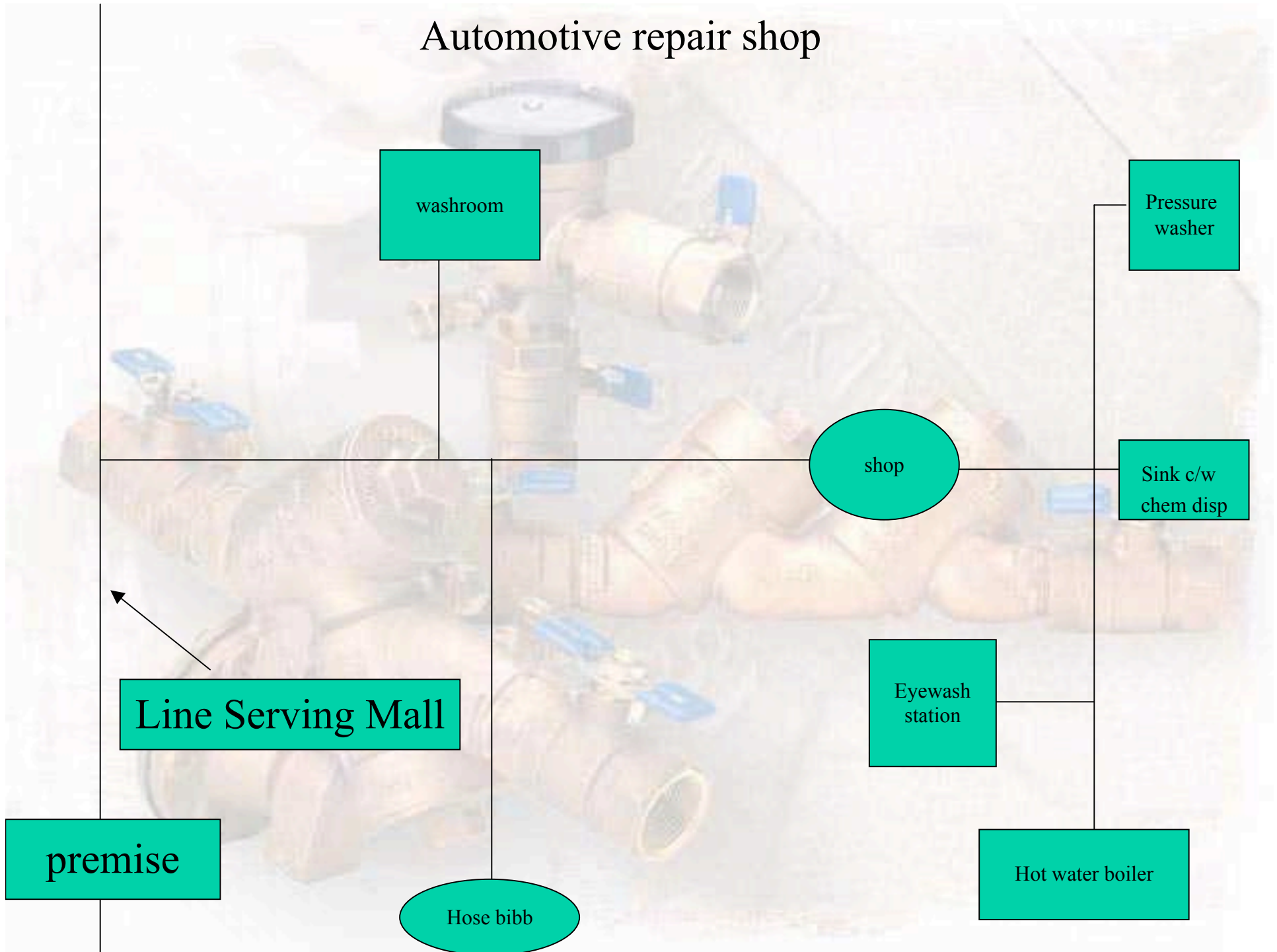
Area Protection

Area protection should be defined as Protection provided to a Section of a piping system within a specific designated group of rooms or facilities within a building that have potable and non potable water connections downstream of the designated backflow preventer.

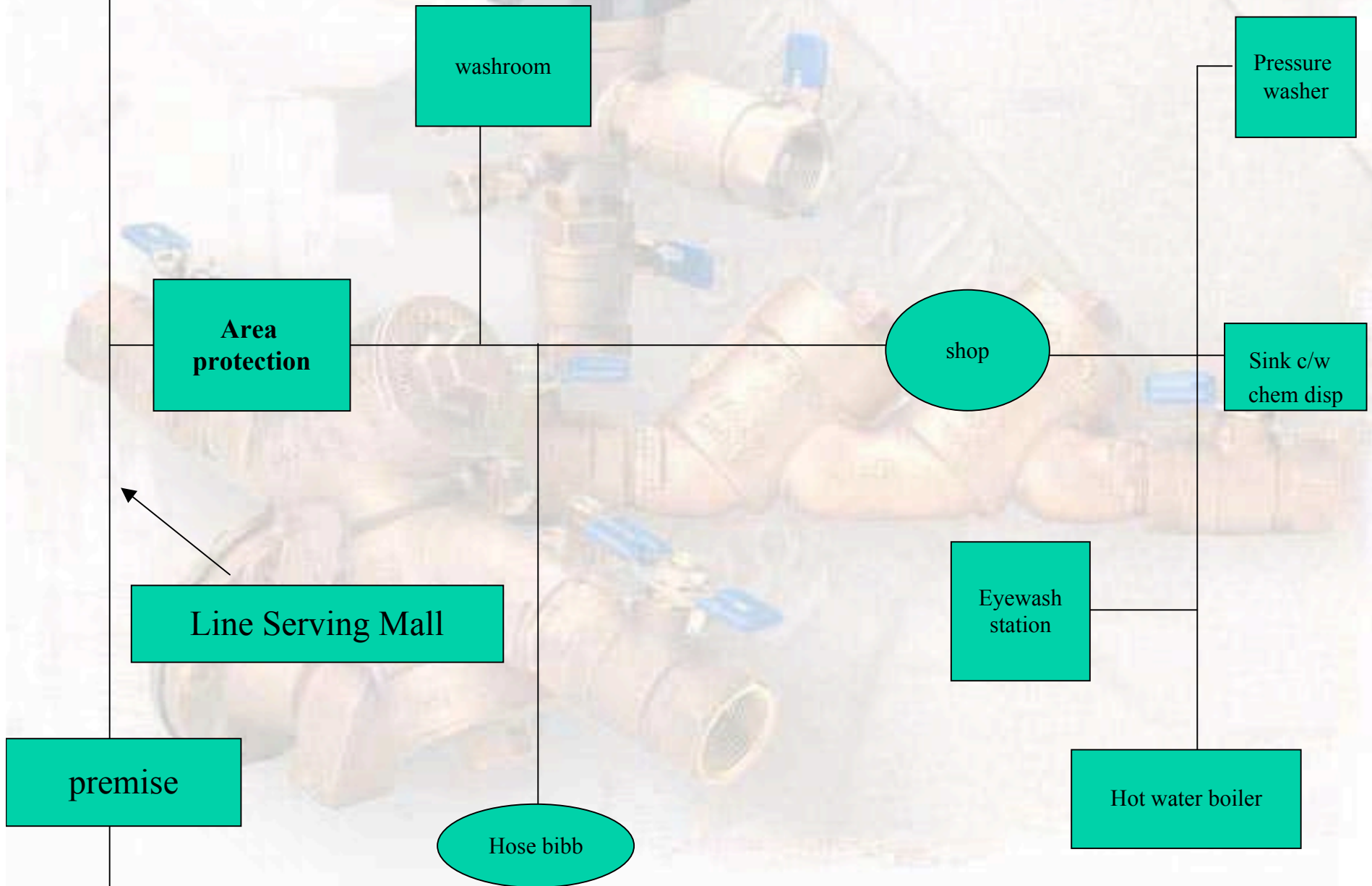
Area Protection

- Area Protection could be seen or compared to premise isolation that is located within a building or facility.
- All existing or potential individual and zone isolation connections located within this area must also be properly protected.

Automotive repair shop



Automotive repair shop



Area Protection

- Example of areas where Area Protection would be installed are;
 1. A surgeon's office that is equipped to perform minor surgery and the office is located inside an office building.
 2. A wing within a hospital.
 - 3.. A boiler room within a large complex where a kitchen facility, a washroom, drinking fountain, eyewash station etc. are available, but that area has been designated as a Severe hazard location.

Zone Protection

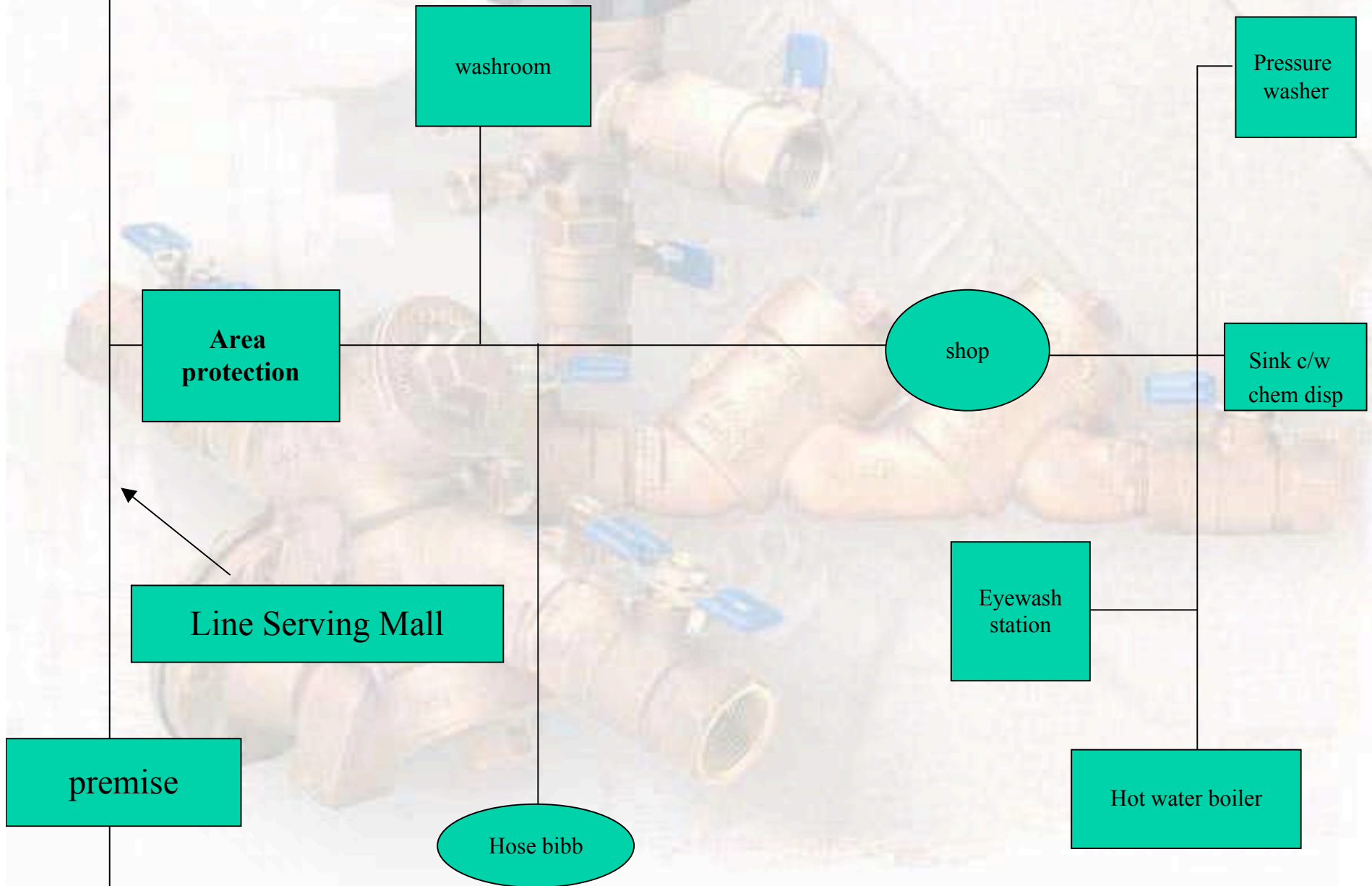
- Defined by AWWA CCCC Manual and CSA as:
- Protection provided for a section of a piping system with no potable water connections downstream of the backflow preventer.

Zone Protection

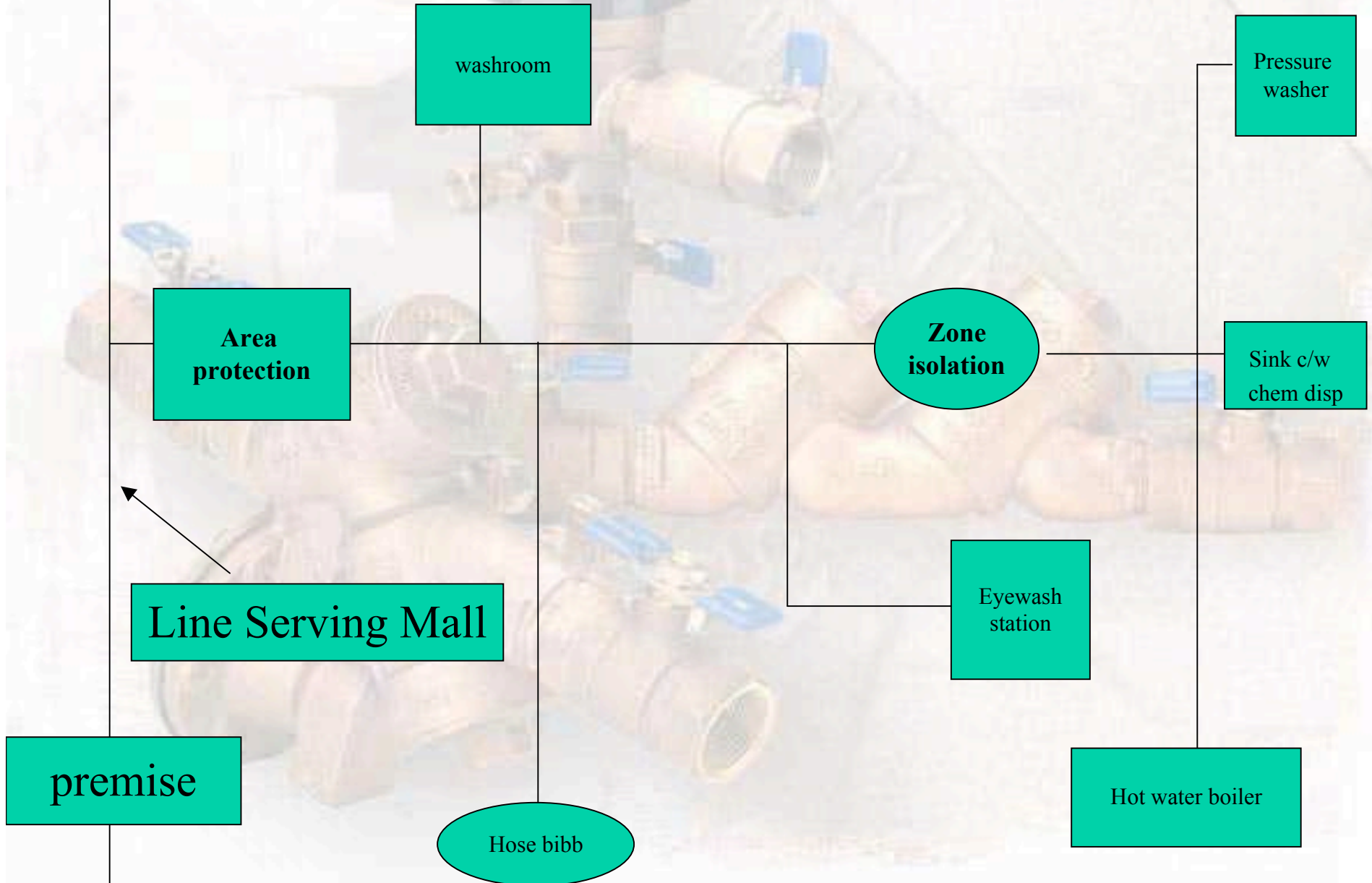
Better defined as:

Protection provided to a Section of a piping system within a specific designated room or facility within a building with **no** potable water connections downstream of the designated backflow preventer.

Automotive repair shop



Automotive repair shop



Zone Protection

- Example of areas where Zone Protection would be installed are;
- 1. Supply line to the vacuum pumps in a dental facility.
- 2. A laboratory with lab bench equipment.
- 3. A boiler room within a large complex with no potable water connections downstream of designated backflow preventer. Eye wash station connection is upstream of device.
- 4. The automotive repair section of an auto dealership.

Zone isolation



- CSA 5.3.3 Zone isolation:
- When zone isolation is provided, isolated **non-potable water systems** shall be clearly identified as required by CAN/CGSB-24.3

Why do cross-connections exist

There are basically three reasons why cross-connection exists. They are:

1. Too often, plumbing is installed by unqualified persons or by persons that are unaware of the inherent dangers of cross-connections.
2. Connections to the water system are made as a simple matter of convenience without due regard or the knowledge to the dangerous situation that might be created.
3. Reliance on inadequate protection such as single check valves, common shut-off valves or other mechanical devices.

Internal Protection

- **Internal Protection:** Any combination of individual, area or zone protection.





It is Evident!

We cannot eliminate the occurrence of
backflow conditions

And

We cannot prevent cross-connections from
being created



The Solution is Clear!

“We must provide a means of protecting drinking water systems from the hazards of backflow occurrences through cross-connections.”

The clear solution

- In order to provide proper protection of our water sources from potential contamination, every cross connection control program must include individual, zone, area and premise protection.
- Only then can we make the statement:
OUR WATER IS SAFE