

## Winsted Hinsdale Plumbing Observations & Recommendations

**Basement Boiler Room:** Due to damp conditions in the boiler room, corrosion is visible on metallic piping and equipment. Basement boiler room finish floor is in an area prone to flooding due to its elevation in comparison to a large storm culvert located under the building. **It is recommended to locate all equipment above the anticipated flood level elevation.** A sump pump in the basement boiler room was not observed operating but should be replaced based on visible condition.

**Domestic Water:** A 3" domestic water service with pressure reducing valve is provided and is adequately sized to handle the building's water demands. Main shut off valves should be cycled to determine proper operation. Backflow preventers, which protect against cross contamination between the municipal water system and the building's devices, have been provided on all required equipment (boilers, kitchen equipment, etc.), additionally on Water Heater #1, which technically is not required by code. Portions of the existing supply piping were likely joined with lead solder based on the age of the building and past renovations. **The water supply should be tested for lead content and if found to be unacceptably high action will be required.** Mandatory flushing of the lines each day may be permitted to reduce levels of lead, but replacement of piping would be more desirable.

**Water heater #1:** (in basement boiler room) non-condensing, gas fired, 100-gallon capacity water heater is adequate for the anticipated demand, installed in 2008 and is in fair serviceable condition, currently set to deliver 120 deg F hot water, with a 5-7 year life expectancy. Hot water recirculation pump and aquastat are in fair operating condition, 3-5 year life expectancy. **System will require a new NSF 61 compliant 1017 Thermostatic Mixing Valve (TMV) .**

**Water heater #2:** (in mechanical room) non-condensing, gas fired, 80-gallon capacity, which is adequate for the anticipated demand, installed in 2009 and is in good serviceable condition, currently set to deliver 150 deg F hot water, with a 10 year life expectancy. **Hot water recirculation pump is in poor operating condition and was observed leaking, replacement is recommended immediately. Currently the system is not provided with a thermostatic mixing valve, a new NSF 61 compliant 1017 thermostatic mixing valve is required to prevent the delivery of water capable of scalding the end user.**

**It is recommended to store hot water at 140 deg F (to avoid the growth of Legionella), then to prevent the delivery of scalding water distribute 120 deg F hot water to all plumbing fixtures via 1017 TMV throughout the building, all handwashing lavatories / sink's hot water temperature shall be limited to 85 – 110 deg F via 1070 TMV per code.**

**Plumbing Fixtures:** Fixtures in the original building consisting of floor mounted water closets are operational but should be replaced with compliant ADA and low flow/water saving types. **Existing floor mounted urinals shall be replaced with wall hung type with partitions per code.** Fixtures in the addition are comparatively modern consisting of wall hung urinals and water closets. All urinals and water closets are commercial grade flush valve type. **Some bathrooms are provided with non-ADA compliant wash stations, these should be replaced. All lavatories shall be provided with ADA compliant insulation on drain and supply lines per code and are required to have provisions to limit hot water delivery temperature between 80 to 110 deg F via 1070 thermostatic mixing valve.** Each classroom is provided with a sink and drinking fountain.

**DWV system:** The building is provided with a gravity sanitary system which drains to the municipal sewer system. All vents terminate to atmosphere accordingly.

**Roof drainage:** Primary roof drains are provided on flat roofs and should be regularly cleared of debris as a precaution. Secondary or emergency roof drainage is provided in some areas but was not apparent in other areas. **Means of secondary roof drainage should be provided to comply with code and to ensure the roof's structural integrity is intact in the event of excessive ponding or water accumulation caused by primary drain obstructions.** The culvert which has most likely been provided to act as a buffer for the Mad River's 100-year flood plain level has now become a source of humidity and water / infiltration and has caused basement flooding in the past. All storm drains in the addition are routed to the municipal storm system via gravity while storm in the original building appears to be routed to the culvert.

**Gas service:** A 2 PSI gas service and meter assembly is provided, the current meter is rated at 5,000 CFH while building demand is approximately 6,250 CFH, this is adequately sized after considering load diversity. It is additionally beneficial to have a 2 PSI service in the event new or additional gas fired equipment will be installed, at which point a new meter assembly rated at a higher capacity maybe required.

**Kitchen:** Two Automatic Grease Recovery Units (AGRU) have been provided to serve grease producing equipment (3 bay sink & dish washer) per code. It is recommended to maintain AGRU's per manufacturer's requirements. Point of use thermostatic mixing valves have been provided on all hand washing sinks per code. All prep sinks spill to floor sinks with air gaps accordingly. Gas appliances located under the range hood are provided with a remote emergency gas shut off system and automatic chemical fire suppression system.