City of White Bear Lake
Building Department
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RESIDENTIAL ADDTIONS

This handout is a summary the permit & inspection process as well as standard requirements based on State Building Code and White Bear Lake City Zoning regulations regarding Residential Additions. Information contained herein does not contain all of the specific codes for construction, and shall only be used as a guide.

Permit Submission Requirements:

- Completed building permit application, including valuation (materials & labor costs).
- Two complete sets of plans drawn to scale. Plans shall include plan views of each level, cross-sections, and elevations and must give specific detail regarding footings, foundation, framing, insulation, finishes and any other pertinent information applicable to specific project.
- Two copies of a survey or site Plan (which includes lot lines and dimensions, the locations and ground coverage area (size) of all existing structures, the location and ground coverage (size) of the proposed structure, indicate setbacks from property lines and any additional information which may be required).
- Residential Energy Efficiency Certificate. Additions to existing structures must meet the current Minnesota Energy Code. The completed certificate must be provided detailing the insulation types and proposed R-values as well as window and skylight U-values.

Energy Code R-value Minimums							
Foundations	Slabs	Floors	Rim Joists	Walls	Attic	Windows	Skylights
R-15	R-10	R-30	R-21	R-21	R-49	U-0.32	U-0.60

- If any portion of the Addition is located in the rear yard, the rear yard coverage worksheet is required.
- If the property is located in the shoreland overlay district, impervious area calculation worksheet is required.

Residential Addition Permit Fees: See the White Bear Lake Fee Schedule at www.whitebearlake.org

Licensing Requirements:

- Contractors must be licensed in the State of Minnesota if performing more than one single trade. Minnesota State license number must be provided on permit application.
- Contractors working on a structure built prior to 1978 are required to provide their Lead Certification Number (see permit application for exceptions.)
- Property owners may perform building related trades on property they own. Property owners may perform mechanical trades, such as plumbing, heating & electrical on property they own and occupy, otherwise a licensed contractor is required. Property owners doing their own work will be required to sign the Property Owner Waiver acknowledging their responsibilities to the Minnesota State Building Code, to Zoning Ordinances and to other applicable rules and regulation when they are acting as general contractor.
- Rental property owners may perform building trade work. However, all plumbing, HVAC and electrical work on rental property shall be performed by a licensed contractor.
- Property owners renovating dwellings with the intent to sell must be state licensed if performing work on more than one property in a two-year period.

Inspection Requirements: The inspection card must be on site upon the start of work until the final inspection has been performed and passed. All construction work shall remain accessible and exposed for inspection purposes until approved by the Building Inspections Department.

All required inspections will be listed on the permit card. A final inspection is required upon completion of project and approvals for all other inspectors have been complete; please call 651-429-8518 to schedule an appointment. A 24-hour notice is required for all inspections (period is subject to change during busy times).

Typical Inspections:

Footing: All footings shall be placed on undisturbed natural soil or on compacted fill. The overall load imposed and the soil bearing capacity determine the size of the footing. A common footing for smaller additions is an 8" x 16". For larger structures, the footing is typically increased to an 8"x20" dimension. Care should be taken to not pour concrete on frozen soil. If pouring concrete during freezing conditions concrete blankets or heaters should be used to ensure that the concrete properly cures.

Foundation: The building code allows various types of foundations such as concrete block, poured concrete, wood foundations. Regardless of the type, all foundation walls need to be inspected prior to backfilling. To avoid unnecessary cracking and displacement foundation walls should be adequately braced prior to backfilling. Foundations shall be water proofed and insulated prior to backfilling. Foundations enclosing habitable space shall be provided with a drainage system. Basements should be provided with an egress window or door leading directly to the exterior to ensure that occupants have a means of egress from the basement level.

Rough Electrical: A rough electrical inspection shall occur once all electrical wiring has been installed from the electric panel to outlets, lights or other devices served by the electrical system. All wiring shall be properly sized and supported in place prior to inspection. Protection plates shall be installed where electrical wiring runs closer than 1 ¼" to the face of the framing member. All circuit wiring shall be properly sized for the load. All 15 and 20 amp receptacles installed or replaced in dwelling units shall be tamper-resistant. A listed AFCI device shall protect all branch circuits supplying 15 and 20 amp outlets in kitchens, family rooms, dining rooms, living room, parlors, libraries, dens, bedrooms, sunrooms, recreation rooms, laundry rooms, closets, and hallways. Kitchen counter areas shall be provided with a minimum of two 20-amp branch circuits. A minimum 20-amp circuit shall protect outlets in laundry rooms and Bathrooms independently. Ground fault circuit interrupter protection shall be provided for all 15 and 20 amp receptacle outlets installed outdoors, in boathouses, crawlspaces, unfinished basements, laundry areas, garages, accessory buildings, bathrooms, kitchen counter tops, and within 6 feet of the outside edge of all sinks, bathtubs and shower stalls.

MAXIMUM OVER CURRENT PROTECTION OF WIRING		
Circuit Breaker Size	Copper	Aluminum
15 amp	14 gage	NA
20 amp	12 gage	NA
30 amp	10 gaga	8 gaga
40 amp	8 gage	6 gage
50 amp	6 gage	4 gage

An owner who files an electrical permit application must own and occupy the residence or own and intend to occupy the residence and shall personally perform all electrical work covered by the permit. It is illegal for a homeowner to install electrical wiring in a property that is rented, leased, or occupied by others. All wiring including underground cable and conduit shall be inspected before it is concealed by insulation, sheetrock, paneling or other materials.

Rough Plumbing: A rough plumbing inspection shall occur once all drain waste and vent piping have been installed. All drain waste and vent piping should be properly sized, slope, supported, protected and provided with all required cleanouts. Where new plumbing pipe is being installed, an air test shall be provided on all new piping. The air test shall hold 5 PSI for 15 minutes minimum. Protection plates shall be installed where plumbing runs closer than 1" to the face of framing members. All water supply lines should installed and shall be properly sized, supported and protected. All plumbing shall be installed such that it is protected from any potential freezing.

Rough Heating: A rough heating inspection shall occur once all ductwork has been installed. Ducts shall be properly sized, supported and sealed at all joints. Ductwork run through unconditioned space shall be properly insulated and provided with a vapor barrier is conveying air-conditioned air. When ducts run through unconditioned space, the energy code requires that duct blast testing be completed. If you want to avoid the duct blast testing requirement all ducts need to be kept within the building envelope. All exhaust ducts such as bathroom and dryer ducts shall be installed, supported, insulated and properly terminated at the exterior of the building with back draft dampers. Where exhaust hoods in excess of 300 cfm are installed, a make-up air calculation shall be provided. All in floor heating pipe zones shall be installed and secured in placed. Hydronic systems shall be tested hydrostatically at one and one half times the maximum system design pressure, but not less than 100 PSI. Prefabricated gas and wood burning fireplaces shall be set in place with all framing installed around the unit for verification of required clearances. Fireplace venting shall be properly sized and installed with all required clearances. Concealed chases constructed for fireplace venting shall be fire stopped every 10 maximum both horizontally and vertically.

Gas Line air Test: Gas lines shall be properly installed and supported in place. Sixteen (16) gage protection plates shall be provided where gas piping is run closer than 1-1/2" from the face of framing members. All gas piping installed outdoors shall be elevated not less than 3-1/2" above grade. Underground gas piping shall be installed a minimum of 12" below grade. Gas piping installed below ground beneath buildings is generally prohibited unless meeting special provisions. Non-metallic gas piping installed below grade shall be provided with a tracer wire. Before any gas piping is put into service or concealed, it shall be inspected and tested. Gas pipe testing shall hold 25 PSI for a minimum of 30 minutes. Minor alterations or repairs to gas piping may be tested with a leak detecting fluid where approved by the building official. Appliances served by gas piping shall be provided with a shut off valve placed within the same room as the equipment. The shut off valve shall be placed within six (6) feet of the equipment.

GAS PIPING SUPPORT			
Steel Pipe	Spacing	Smooth Wall Tubing	Spacing
½"	6'	½"	4'
¾" or 1"	8'	5/8" or ¾"	6'

Rough Framing: Rough framing shall occur after rough plumbing, rough heating and rough electrical have been approved. All rough framing shall be in place, properly nailed, with proper point load support installed. The exterior envelope (roof, wall and window openings) shall be weather tight. All anchor bolts shall be tightened in place. All narrow walls shall have proper strapping and shear wall nailing as required. All exterior sheathing at the roof and walls shall be properly nailed.

Weather resistive Barrier: The exterior wall envelope shall be constructed in a manner that prevents accumulation of water within the wall assembly by providing a water resistant barrier behind the exterior veneer. The weather resistive barrier shall be applied horizontally with the upper layer lapped over the lower layer not less than 2". Where joints occur in the water-resistive barrier they shall be lapped not less than 6".

Joints in the weather resistive barrier shall be taped as required by the manufacture. The weather resistive barrier is not required on detached accessory buildings (garages).

Insulation: Exterior walls and attic areas shall be properly insulated. The thickness of blown or sprayed roof/attic insulation shall be written in inches on markers that are installed at least one for every 300 square feet throughout the attic. U factor labels in glazing shall remain in place until the insulation inspection has been approved. Fiberglass batt wall insulation shall be provided with a vapor barrier. The vapor barrier shall be sealed to the framing with construction adhesive at the top and bottom planes and where the adjacent wall is insulated. The vapor barrier shall be sealed around utility boxes and penetrations. All seams in the vapor barrier shall be lapped at least 6" and sealed to create a continuous airtight air barrier.

Final Electrical: A final electrical inspection should occur once all lights, outlets and other fixtures have been permanently connected. All circuit wiring shall be properly sized for the load. The installer shall call for a final electrical inspection when all wiring is complete and before the wiring is utilized and the space occupied.

Final Plumbing: Final plumbing inspection should occur once all plumbing fixtures have been installed and caulked in place. After all plumbing fixtures have been set and their traps filled with water, their connections shall be tested and proven gastight and watertight by plugging the stack openings on the roof and the building drain where it leaves the building, and air introduced into the system equal to the pressure of 1-inch water column. Such pressure shall remain constant for 15 minutes or the duration of the inspection without the introduction of additional air.

Final Heating: A final heating inspection shall occur once all HVAC work has been completed. All supply and return registers shall be in place and functional. All exhaust duct housings shall be properly terminated at the exterior of the building. All gas piping shall be installed, supported and properly controlled by shut off valves. Furnace and air conditioning equipment should be set, connected and in a functioning state. Combustion air where required shall be installed. Make up air if required shall be installed. If powered make up air is required, it shall be electronically interconnected with the exhaust device.

Final Building: Final building inspection shall occur after final plumbing, heating and electrical have received final approvals. All finish work shall be fully completed. The space shall not be occupied or used until a final building inspection approval has been given. All exterior finishes shall be weather tight, caulked, painted etc. Address numbers 4" minimum in height and placed on a contrasting background shall be posted on the front of the home. All smoke detectors shall have been installed to upgrade the newly remodeled and existing area of the home. All permit cards and your approved plans should be on site and made available to the building inspector.

Information and Guidelines:

Standard Residential Code Requirements

House to Garage Vertical Fire Separation: A fire separation shall be maintained between the house and garage by installing 1/2" gypsum board on the garage side of all common walls located between the house and garage. The gypsum board fire separation should start at the floor and extend continuously to the underside of the roof. Compartmentation is an alternate method of achieving a fire separation. This is accomplished by installing gypsum board from the floor and extending it up to the ceiling, then across the ceiling and back down to the floor. When using this compartmentation method all structural bearing walls and headers supporting the ceiling framing shall be covered with gypsum board to provide fire protection.

Additions Over Garages: Where habitable space is located above a garage it shall be protected with a fire separation. The underside of the floor joists and or truss members shall be covered with 5/8" gypsum board. Walls supporting the joists and/or truss ends and the wall separating the house from the garage require ½" gypsum.

Emergency Egress: Basements, habitable attics, and every sleeping room shall have at least one operable emergency escape opening. When adding an addition to a dwelling with a basement that is 7 feet high or greater and no emergency opening currently exists in the basement, one must be added. This requirement applies even if there are no bedrooms in the basement area. Standard egress openings are 5.7 square feet in minimum openable area. The windowsill shall be a maximum of 44" above the floor. The minimum opening height shall be 24 inches and the minimum opening width shall be 20". Please be aware that the minimum 24"x20" dimensions will not create an opening that meets the 5.7 square foot minimum. One or both of the minimum height and width dimensions need to be increased to meet the minimum openable area. There is an exception to the 5.7 square foot requirement where windows are located in close proximity to grade. Windows with windowsills that are located within 44" of the finish grade may have the open area reduced to 5.0 square feet. Emergency escape windows shall be operational from the inside without the use of a key, tools, or special knowledge. If an egress window is installed below grade, than a window well is required. The window well shall provide 9 square feet of clear opening with a minimum dimension of 36" x 36" area within the well.

Smoke alarms: Where alterations, repairs or additions are constructed, smoke alarms shall be installed in every sleeping room, outside sleeping rooms, and on each level of the dwelling including basements and habitable attics, but not including crawlspaces and uninhabitable attics. Smoke detectors shall be hard wired with battery backup, however hard wiring of smoke alarms in existing areas shall not be required where the alteration or repairs do not result in the removal of the interior wall or ceiling finishes exposing the structure, unless there is an attic, crawlspace or basement available which could provide access for hard wiring without the removal of the interior finish.

Carbon Monoxide Alarms: Where work requiring a permit occurs in existing dwellings that have attached garages or in existing dwellings within which fuel fired appliances exist, carbon monoxide alarms shall be provided. Carbon monoxide alarms shall be installed outside and not more than 10 feet from each separate sleeping area or bedroom. Alarms shall be installed on each level containing sleeping areas or bedrooms.

Ceiling Height: Habitable space, hallways, bathroom, toilet rooms, and laundry rooms and portions of basements containing these spaces shall have a ceiling height of not less than 7 feet. For rooms with sloped ceiling, at least 50% of the ceiling height of at least 7 feet and no portion of the required floor area may have a ceiling height of at least 5 feet. Bathrooms shall have a minimum ceiling height of 6 feet 8 inches.

Stairways: Stairways shall be not less than 36" in clear width above the handrail height and below the require headroom height. Handrails shall project not more than 4.5 inches on either side of the stairway. The minimum clear width of the stairway below the handrail elevation shall be not less than 31-1/2 inches where the handrail is installed on one side and 27 inches where the handrail is installed on both sides. The minimum headroom in all parts of the stairway shall be not less than 6 feet 8 inches. The maximum stair riser height shall not exceed 7-3/4 inches. The greatest riser height within any flight of stairs shall not exceed the smallest by more than 3/8 inch. The minimum stair tread length shall not be less than 10 inches. The greatest tread depth within any flight of stairs shall not exceed the smallest by more than 3/8 inch. There shall be a floor or landing at the top and bottom of each stairway. Stair landings shall be equal to the width of the stairway served with a minimum length in the direction of travel not less than 36 inches.

Glazing: Glazing in hazardous locations such as doors, adjacent to doors, in guardrails, around tubs and showers shall be tempered. Windows with large areas of glazing that meet ***all*** of the following shall be tempered:

- ✓ Glazing in windows greater than 9 square feet in area.
- ✓ Windows bottom edge less than 18 inches above the floor.
- ✓ Windows top edge of the window more than 36 inches above the floor.
- ✓ Windows adjacent to a walking surface shall be tempered.

Foam Plastic Insulation: Some foam insulation products have a high smoke and flame spread characteristic. Foam plastic insulation products left exposed shall be listed, labeled, and approved for direct exposure. Foam materials not rated for exposure and installed in a room, crawlspace or attic shall be covered with a 1/2" minimum gypsum board, 3/4" wood structural panels or other material approved by the building official. (Exception: Spray foam installed in the rim joist area not exceeding 5-1/2" thick and having a flame spread rating of 25 and smoke development rating of 450 or less can be left exposed).

Attic Ventilation: Enclosed attics and enclosed attic spaces where ceilings are applied directly to the underside of ceiling joists or roof rafters shall have cross ventilation. The minimum net free area shall be 1/150 of the area of the vented space. Exception: The minimum net free ventilation area shall be allowed to be reduced to 1/300 of the attic area where a vapor retarder is installed on the warm-in-winter side of the ceiling. In cases where a vapor barrier does not exist, the ventilation area may be reduced to 1/300 of the attic area where 40% to 50% of the ventilation area is provided by ventilators located not more than 3 feet below the ridge.

Note: The code does allow unvented attic areas where special provisions are met. If you want to construct an unvented attic (hot roof) area, inquire with the building department staff as to the specific requirements that must be met.

Attic Access: Attic areas having a vertical height of 30 inches shall be accessible. A rough framed opening shall be provided not less than 22 inches by 30 inches and shall be located in a hallway or other readily accessible location.

Roofing: Roof assemblies shall be covered with approved roof coverings. The most common type of roofing used for residential roofing is asphalt shingles. Asphalt shingles cannot be installed on roof slopes of less than a 2:12 pitch. All asphalt roofing shingles must meet be listed to withstand wind speeds of 90 mph or greater. Underlayment such as felt paper or other approved material shall be applied to the roof sheathing prior to installing shingles. An ice and water shield membrane shall be installed along the eave lines. The ice and water barrier should extend up the slope of the roof to a point at least 24 inches beyond the exterior wall line. Open Valleys shall be properly lined with valley flashing material at least 24 inches in width. Closed valleys covered with asphalt shingles shall have valleys lined with flashing material at least 36 inches in width. Proper flashing shall be applied against all vertical wall as well as soil stack, vent pipe and chimney flashing. Sidewall flashing shall be continuous or stepped, shall be a minimum of 4 inches in height and 4 inches in width, and shall direct water away from the vertical sidewall onto the roof. Kick out flashing shall be installed where the lower portion of a sloped roof steps within the plane of an intersecting wall cladding in a manner as to divert or kick out water away from the wall assembly. Asphalt shingles shall have the minimum number of fasteners required by the manufacture but no less than four per shingle.

This document is for informational purposes only and not intended to address every situation for the permitting and plan review process. 2022