Site Address: _____ **Permit #:** _____
(Office use ONLY)

Submission Checklist (incomplete applications/submittals will not be processed until all information is completed)

Please submit all documents electronically to bldgpermits@ci.victoria.mn.us

Completed and Signed Permit Application(s), including all License/Bond numbers.

- ❑ Completed New Construction Energy Code Compliance Certificate
- ❑ Ventilation Requirements
- ❑ Make-up/Combustion Air Requirements
- ❑ Heat Loss/Gain Calculations
- ❑ Building Plans – Floor Plans, Elevations, Section Details, Engineering (as applicable)
- ❑ Minnehaha Creek Watershed District (MCWD) Permit (as applicable))
- ❑ Site Survey

VENTILATION REQUIREMENTS – MN RULES CHAPTER 1322

	Number of Bedrooms					
	1	2	3	4	5	6 (2)
Conditioned Space (1) (in sq. ft.)	Total / Continuous	Total / Continuous	Total / Continuous	Total / Continuous	Total / Continuous	Total / Continuous
1000-1500	60 / 40	75 / 40	90 / 45	105 / 53	120 / 60	135 / 68
1501 - 2000	70 / 40	85 / 43	100 / 50	115 / 58	130 / 65	145 / 73
2001 - 2500	80 / 40	95 / 48	110 / 55	125 / 63	140 / 70	155 / 78
2501 - 3000	90 / 45	105 / 53	120 / 60	135 / 68	150 / 75	165 / 83
3001 – 3500	100 / 50	115 / 58	130 / 65	145 / 73	160 / 80	175 / 88
3501 – 4000	110 / 55	125 / 63	140 / 70	155 / 78	170 / 85	185 / 93
4001 – 4500	120 / 60	135 / 68	150 / 75	165 / 83	180 / 90	195 / 98
4501 – 5000	130 / 65	145 / 73	160 / 80	175 / 88	190 / 95	205 / 103
5001 – 5500	140 / 70	155 / 78	170 / 85	185 / 93	200 / 100	215 / 108
5501 – 6000 (2)	145 / 75	165 / 83	180 / 90	195 / 98	210 / 110	225 / 113

1) Conditioned space includes the basement.
2) If conditioned space exceeds 6000 sq. ft. or there are more than 6 bedrooms, use the following equation to calculate ventilation requirements.

(0.02 x sq. ft. of conditioned space) + (15 x (number of bedrooms + 1) = _____ CFM
(0.02 x _____) + (15 x (_____ + 1)) = _____ CFM (Total Ventilation Rate)
_____ + _____ = _____ CFM
(Conditioned Space) + (Bedrooms) = Total Ventilation Rate
Total Ventilation Rate / 2 = Continuous Ventilation Rate (never less than 40 cfm)

MAKEUP AIR REQUIREMENTS – MN RULES CHAPTER 1346 TABLE 501.4.1				
	ONE OR MULTIPLE POWER VENT OR DIRECT VENT APPLIANCES OR NO COMBUSTION APPLIANCES	ONE OR MULTIPLE FAN ASSISTED APPLICANCES AND POWER VENT AND DIRECT VENT APPLIANCES	ONE ATMOSPHERICALLY VENTED GAS OR OIL APPLIANCE OR ONE SOLD FUEL APPLIANCE	MULTIPLE APPLIANCES THAT ARE ATMOSPHERICALLY VENTED GAS OR OIL APPLIANCES OR SOLID FUEL APPLIACNES
1. Use the Appropriate Column to Estimate House Infiltration				
a) Pressure factor (cfm/sf)	0.15	0.09	0.06	0.03
b) Conditioned floor area (sf) (Including unfinished basements)				
Estimate House Infiltration (cfm): [1a x 1b]				
2. Exhaust Capacity				
a) Clothes dryer	135	135	135	135
b) 80% of largest exhaust rating (cfm):				
(Not applicable if recirculating system of if powered *makeup air* is electrically interlocked and matched to exhaust)				
c) 80% of next largest exhaust rating (cfm):	Not applicable			
(Not applicable if recirculating system of if powered *makeup air* is electrically interlocked and matched to exhaust)				
Total Exhaust Capacity (cfm): [2a + 2b + 2c]				
3. Makeup Aire Requirements				
a) Total Exhaust Capacity (from above)				
b) Estimated House Infiltration (from above)				
Makeup Air Quantity (cfm): [3a – 3b]				
(If value is negative, no makeup air is needed)				
4. For *Makeup Air* Opening Sizing, refer to table 501.4.2				

MAKEUP AIR OPENING SIZING – MN RULES CHAPTER 1346 TABLE 501.4.2					
TYPE OF OPENING OR SYSTEM	**ONE OR MULTIPLE POWER VENT OR DIRECT VENT APPLIANCES OR NO COMBUSTION APPLIANCES**	**ONE OR MULTIPLE FAN ASSISTED APPLIANCES AND POWER VENT AND DIRECT VENT APPLIANCES**	**ONE ATMOSPHERICALLY VENTED GAS OR OIL APPLIANCE OR ONE SOILD FUEL APPLIANCE**	**MULTIPLE APPLIANCES THAT ARE ATMOSPHERICALLY VENTED GAS OR OIL APPLIANCES OR SOILD FUEL APPLIANCES**	**PASSIVE MAKEUP AIR OPENINING DUCT DIAMETER (E, F, G)**
	(cfm)	**(cfm)**	**(cfm)**	**(cfm)**	**(inches)**
Passive Opening	1 - 36	1 -22	1 – 15	1 - 9	3
Passive Opening	37 - 66	23 – 41	16 - 28	10 - 17	4
Passive Opening	67 – 109	42 – 66	29 – 46	18 – 28	5
Passive Opening	110 – 163	67 – 100	47 – 69	29 – 42	6
Passive Opening	164 – 232	101 – 143	70 – 99	43 – 61	7
Passive Opening	233 – 317	144 – 195	100 – 135	62 – 83	8
Passive opening with motorized damper	318 – 419	196 – 258	136 – 179	84 – 110	9
Passive opening with motorized damper	420 – 539	259 – 332	180 – 230	111 – 142	10
Passive opening with motorized damper	540 – 679	333 – 419	231 – 290	143 – 179	11
Powered makeup air (H)	>679	>419	>290	>179	Not Applicable

E. An equivalent length of 100 feet of round smooth metal duct is assumed. Subtract 40 feet for the exterior hood and 10 feet for each 90 – degree elbow to determine the remaining length of straight duct allowable.
F. If flexible duct is used, increase the duct diameter by one inch. Flexible duct shall be stretched with minimal sags.
G. Barometric dampers are prohibited in passive *makeup air* openings when any atmospherically vented *appliance* is installed.
H. Powered *makeup air* shall be electrically interlocked with the largest exhaust system.

IFGC Appendix E, Worksheet E-1

Residential Combustion Air Calculation Method
(for Furnace, Boiler, and/or Water Heater in the Same Space)

Step 1: Complete vented combustion appliance information.

Furnace/Boiler:

__ Draft Hood (Not fan assisted) __ Fan Assisted & Power Vent __ Direct Vent Input: _____Btu/hr

Water Heater:

__ Draft Hood (Not fan assisted) __ Fan Assisted & Power Vent __ Direct Vent Input: _____Btu/hr

Step 2: Calculate the volume of the Combustion Appliance Space (CAS) containing combustion appliances.

The CAS includes all spaces connected to one another by code compliant openings. CAS volume:_____ft^3

Step 3: Determine Air Changes per Hour (ACH)[1]

Default ACH values have been incorporated into Table E-1 for use with Method 4b (KAIR Method).
If the year of construction or ACH is not known, use method 4a (Standard Method).

Step 4: Determine Required Volume for Combustion Air.

4a. Standard Method

Total Btu/hr input of all combustion appliances (DO NOT COUNT DIRECT VENT APPLIANCES) Input:_____Btu/hr

Use Standard Method column in Table E-1 to find Total Required Volume (TRV) TRV:_____ft^3

If CAS Volume (from Step 2) **is greater than** TRV then no outdoor openings are needed.

If CAS Volume (from Step 2) **is less than** TRV then go to **STEP 5.**

4b. Known Air Infiltration Rate (KAIR) Method

Total Btu/hr input of all fan-assisted and power vent appliances (DO NOT COUNT DIRECT VENT APPLIANCES) Input:_____Btu/hr

Use Fan-Assisted Appliances column in Table E-1 to find Required Volume Fan Assisted (RVFA) RVFA:_____ft^3

Total But/hr input of all non-fan-assisted appliances Input:_____Btu/hr

Use Non-Fan-Assisted Appliances column in Table E-1 to find Required Volume Non-Fan-Assisted (RVNFA) RVNFA:_____ft^3

Total Required Volume (TRV) = RVFA + RVNFA TRV = _____ + _____ = _____ft^3

If CAS Volume (from Step 2) **is greater than** TRV then no outdoor openings are needed.

If CAS Volume (from Step 2) **is less than** TRV then go to **STEP 5.**

Step 5: Calculate the ratio of available interior volume to the total required volume.

Ratio = CAS Volume (from Step 2) **divided by** TRV (from Step 4a or Step 4b) Ratio = _____ / _____ = _____

Step 6: Calculate Reduction Factor (RF).

RF = 1 **minus** Ratio RF = 1 - _____ = _____

Step 7: Calculate single outdoor opening as if all combustion air is from outside.

Total Btu/hr input of all Combustion Appliances in the same CAS (EXCEPT DIRECT VENT) Input:_____Btu/hr

Combustion Air Opening Area (CAOA):
Total Btu/hr **divided by** 3000 Btu/hr per in^2 CAOA = ____ / 3000 Btu/hr per in^2 =____in^2

Step 8: Calculate Minimum CAOA.

Minimum CAOA = CAOA **multiplied by** RF Minimum CAOA = _____ x ____ = _____in^2

Step 9: Calculate Combustion Air Opening Diameter (CAOD)

CAOD = 1.13 **multiplied by the square root of** Minimum CAOA CAOD = 1.13 x $\sqrt{\text{Minimum CAOA}}$ = ____in

[1] If desired, ACH can be determined using ASHRAE calculation or blower door test. Follow procedures in Section 304.

IFGC Appendix E, Table E-1
Residential Combustion Air Required Volume (Required Interior Volume Based on Input Rating of Appliances)

		Known Air Infiltration Rate (KAIR) Method (ft^3)			
		Fan Assisted		Non-Fan-Assisted	
Input Rating (Btu/hr)	Standard Method (ft^3)	1994[1] to Present	Pre 1994[2]	1994[1] to Present	Pre 1994[2]
5,000	250	375	188	525	263
10,000	500	750	375	1,050	525
15,000	750	1,125	563	1,575	788
20,000	1,000	1,500	750	2,100	1,050
25,000	1,250	1,875	938	2,625	1,313
30,000	1,500	2,250	1,125	3,150	1,575
35,000	1,750	2,625	1,313	3,675	1,838
40,000	2,000	3,000	1,500	4,200	2,100
45,000	2,250	3,375	1,688	4,725	2,363
50,000	2,500	3,750	1,875	5,250	2,625
55,000	2,750	4,125	2,063	5,775	2,888
60,000	3,000	4,500	2,250	6,300	3,150
65,000	3,250	4,875	2,438	6,825	3,413
70,000	3,500	5,250	2,625	7,350	3,675
75,000	3,750	5,625	2,813	7,875	3,938
80,000	4,000	6,000	3,000	8,400	4,200
85,000	4,250	6,375	3,188	8,925	4,463
90,000	4,500	6,750	3,375	9,450	4,725
95,000	4,750	7,125	3,563	9,975	4,988
100,000	5,000	7,500	3,750	10,500	5,250
105,000	5,250	7,875	3,938	11,025	5,513
110,000	5,500	8,250	4,125	11,550	5,775
115,000	5,750	8,625	4,313	12,075	6,038
120,000	6,000	9,000	4,500	12,600	6,300
125,000	6,250	9,375	4,688	13,125	6,563
130,000	6,500	9,750	4,875	13,650	6,825
135,000	6,750	10,125	5,063	14,175	7,088
140,000	7,000	10,500	5,250	14,700	7,350
145,000	7,250	10,875	5,438	15,225	7,613
150,000	7,500	11,250	5,625	15,750	7,875
155,000	7,750	11,625	5,813	16,275	8,138
160,000	8,000	12,000	6,000	16,800	8,400
165,000	8,250	12,375	6,188	17,325	8,663
170,000	8,500	12,750	6,375	17,850	8,925
175,000	8,750	13,125	6,563	18,375	9,188
180,000	9,000	13,500	6,750	18,900	9,450
185,000	9,250	13,875	6,938	19,425	9,713
190,000	9,500	14,250	7,125	19,950	9,975
195,000	9,750	14,625	7,313	20,475	10,238
200,000	10,000	15,000	7,500	21,000	10,500
205,000	10,250	15,375	7,688	21,525	10,763
210,000	10,500	15,750	7,875	22,050	11,025
215,000	10,750	16,125	8,063	22,575	11,288
220,000	11,000	16,500	8,250	23,100	11,550
225,000	11,250	16,875	8,438	23,625	11,813
230,000	11,500	17,250	8,625	24,150	12,075

[1] The 1994 date refers to dwellings constructed under the 1994 Minnesota Energy Code. The default KAIR used in this section of the table is 0.20 ACH.

[2] This section of the table is to be used for dwellings constructed prior to 1994. The default KAIR used in this section of the table is 0.40 ACH.

New Construction Energy Code Compliance Certificate

Questions? Contact City of Victoria Building at bldgpermits@ci.victoria.mn.us

Per R401.3 Certificate. A building certificate shall be posted on or in the electrical distribution panel.

Date Certificate Posted _____/_____/_____

Mailing Address of the Dwelling or Dwelling Unit _____ **City** _____

Name of Residential Contractor _____ **MN License Number** _____

THERMAL ENVELOPE

THERMAL ENVELOPE										**RADON CONTROL SYSTEM**
Insulation Location	Total R-Value of all Types of Insulation	Type: Check All That Apply Non or Not Applicable	Fiberglass, Blown	Fiberglass, Batts	Foam, Closed Cell	Foam Open Cell	Mineral Fiberboard	Rigid, Extruded Polystyrene	Rigid, Isocyanate	☐ Passive (*No Fan)* ☐ Active (with fan and monometer or other system monitoring device) Location (or future location) of Fan: Other Please Describe Here
Below Entire Slab										
Foundation Wall										
Perimeter of Slab on Grade										
Rim Joist (1st Floor)										
Rim Joist (2nd Floor+)										
Wall										
Ceiling, flat										
Ceiling, vaulted										
Bay Windows or cantilevered areas										
Floors over unconditioned area										
Describe other insulated areas										

Building envelope air tightness:		**Duct system air tightness:**	

Windows & Doors		**Heating or Cooling Ducts Outside Conditioned Spaces**	
Average U-Factor (*excludes skylights and one door)* U:		☐	Not applicable, all ducts located in conditioned space
Solar Heat Gain Coefficient (SHGC):		☐	R-value

Builders Association of Minnesota version 101014

CITY OF VICTORIA

Return form to: City of Victoria, Attn: Building, City of Victoria, 1670 Stieger Lake Lane, PO Box 36, Victoria, MN 55386

Per R401.3 Certificate. A building certificate shall be posted on or in the electrical distribution panel.

MECHANICAL SYSTEMS						
Appliances	**Heating System**		**Domestic Water Heater**		**Cooling System**	
Fuel Type						
Manufacturer						
Model						
Rating or Size	Input in BTUS:		Capacity in Gallons:		Output in Tons:	
Efficiency	AFUE or HSPF%				SEER /EER	

Residential Load Calculation	**Heating Loss**	**Heating Gain**	**Cooling Load**

MECHANICAL VENTILATION SYSTEM

Describe any additional or combined heating or cooling systems if installed: (e.g., two furnaces or air source heat pump with gas back-up furnace):

Select Type

	Heat Recover Ventilator (HRV) Capacity in cfms:	Low:		High:	
	Energy Recover Ventilator (ERV) Capacity in cfms:	Low:		High:	
	Balanced Ventilation capacity in cfms:				
	Location of fan(s), describe:				
	Capacity continuous ventilation rate in cfms:				
	Total ventilation (intermittent + continuous) rate in cfms:				

Make-up Air *Select a Type*

- Not required per mech. code
- Passive
- Powered
- Interlocked with exhaust device. Describe:
- Other, describe:

Location of duct or system:

- Cfm's
- " Round duct OR
- " Metal duct

Combustion Air *Select a Type*

- Not required per mech. code
- Passive
- Other, describe:

Location of duct or system:

- Cfm's
- " Round duct OR
- " Metal duct

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CITY OF VICTORIA

Return form to: City of Victoria, Attn: Building, City of Victoria, 1670 Stieger Lake Lane, PO Box 36, Victoria, MN 55386

To: Builders/Contractors

From: Scott McCarty, Building Official and Dave Shoger, Public Works Director

Subject: Erosion and Sediment Control – Site Requirements – New Homes

The National Pollutant Discharge Elimination System (NPDES) Construction Permit administered by the Minnesota Pollution Control Agency (MPCA), city ordinances and applicable watershed management organizations require you to implement Best Management Practices (BMPs) to minimize soil erosion and off-site sediment transport resulting from construction of new homes within approved subdivisions. Below are some measures that shall be implemented to meet some of the requirements for your site.

Erosion and sediment controls must be installed on the project site prior to any excavation.

- **Rock Construction Entrance:** Install and maintain rock construction entrances (20 feet x 50 feet) constructed of a minimum of 6 – inches of rock or gravel installed over fabric for the duration of the project.
- **Perimeter Sediment Controls:** Install and maintain all necessary perimeter control measures until such time as vegetation is fully established. Additional perimeter control including the installation of double rows of silt fence may be needed in sensitive areas adjacent to lakes, ponds, streams, and wetlands.
- **Storm Sewer Inlet Protection**: All catch basin inlet protection, including both in the adjacent street and yard structures downstream of the site, must be installed, maintained, and cleaned as needed.
- **Erosion Controls:** Exposed soil including stockpiles, must be covered within 14 days or as required by project Stormwater Pollution Prevention Plan (SWPPP). Acceptable BMP's may include: the application of seed followed by mulch, hydro mulch and/or erosion control blanket.
- **Street Sweeping:** Street surfaces and sidewalks must remain free of sediment for the duration of the project. If tracking occurs, it must be cleaned within 24 hours.
- **Concrete Washout**: Use a designated concrete washout area to prevent wash water from concrete tools or trucks from entering storm drains.
- **Trash and Storage:** Solid waste and hazardous materials (i.e., oil, diesel fuel, gasoline, hydraulic fluids, paint solvents, curing compounds and acids) must be stored and contained to prevent spills and leaks. Trash and building material debris must be placed and stored in dumpsters. Trash that can blow away must be contained in a dumpster.
- **Weekly Inspections:** Complete and document inspections weekly and after every ½ inch rain event and/or as required by your SWPPP. SWPPP and Inspection records must be provided upon request.

Failure to comply with erosion and sediment control requirements may result in the following actions: stop work orders, permit revocation, fines, and criminal action. We appreciate your assistance in ensuring that requirements are met and that our downstream wetlands and water bodies are protected.