

NEW BRUNSWICK ELECTRICAL



DIY vs Professional

What you can do yourself vs when to hire an
electrician

19 Expert Answers from Electric IQ

newbrunswickelectrical.com/construction-brain

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Most dangerous DIY electrical mistakes to avoid?

DIY electrical work in New Brunswick can literally kill you or burn down your house. While homeowners can legally replace outlets and switches (like-for-like with power OFF), most electrical work requires a TSANB-licensed electrician and permits. Here are the most dangerous mistakes that send people to the hospital or result in house fires.

Working on live circuits is the deadliest mistake. Many homeowners think they can "be careful" around live wires, but electricity doesn't give second chances. Always shut off the breaker and test with a non-contact voltage tester before touching any wires. Even experienced electricians get shocked - the difference is they know how to work safely and have proper PPE.

Overloading circuits causes more house fires than most people realize. Adding outlets to existing circuits without calculating the load can overheat wires inside your walls. In New Brunswick's older homes, you might find 15-amp circuits already maxed out. That new outlet for your space heater could be the one that starts a fire. Each circuit has limits - 15 amps for 14-gauge wire, 20 amps for 12-gauge wire.

Mixing up wire gauges is incredibly dangerous. Using 14-gauge wire on a 20-amp breaker creates a fire hazard because the wire will overheat before the breaker trips. Similarly, connecting aluminum wire to devices not rated for aluminum causes arcing and fires. Many New Brunswick homes built in the 1960s-70s have aluminum wiring that requires special handling.

Improper grounding can kill you. GFCI outlets in bathrooms and kitchens aren't just suggestions - they're required by the Canadian Electrical Code as adopted by TSANB. A missing ground wire or improperly wired GFCI won't protect you from electrocution. Maritime humidity makes proper grounding even more critical in New Brunswick homes.

Panel work is extremely dangerous and illegal for homeowners in NB. Federal Pacific and Zinsco panels are known fire hazards, but replacing them requires shutting off the main service - something only licensed electricians should do. One wrong move and you're dealing with 200 amps at the service entrance, which can kill instantly.

Permit violations might not kill you immediately, but they can void your insurance and create liability issues. TSANB requires permits for most electrical work - new circuits, panel upgrades, EV chargers, and major repairs. Unpermitted work discovered during home sales can kill deals or force expensive re-work.

Knob and tube modifications are particularly dangerous. Many New Brunswick homes still have knob and tube wiring, and homeowners sometimes try to "extend" it or add modern outlets. This creates serious fire risks, especially when insulation contacts the old wiring. Insurance companies often won't cover homes with modified

knob and tube systems.

Emergency situations require immediate professional help. If you smell burning, see sparking, or lose power to part of your home, don't try DIY fixes. Shut off the main breaker if there's burning smell, and call a licensed electrician immediately. Many NB electricians offer 24/7 emergency service - it's worth the cost to avoid tragedy.

The bottom line: electrical work can kill you, burn your house down, void your insurance, and create massive liability. Stick to simple replacements (outlets, switches, light fixtures) with the power OFF and verified with a tester. Everything else needs a TSANB-licensed professional.

Need help finding a licensed electrician for safe electrical work? New Brunswick Electrical can match you with qualified professionals who follow code and pull proper permits - protecting your family and your investment.

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Q2

Can I swap a GFCI outlet myself?

Yes, you can legally replace a GFCI outlet yourself in New Brunswick as long as you're replacing it with another GFCI outlet on the same circuit. This is considered maintenance rather than new electrical work, so no TSANB permit is required.

However, **safety is absolutely critical** when working with GFCI outlets since they're typically installed in wet locations like bathrooms, kitchens, and outdoor areas where the risk of electrocution is highest. Before touching anything, shut off the circuit breaker and use a non-contact voltage tester to confirm the power is completely off. Even experienced electricians get shocked working on GFCI outlets because people assume they're safe when they're not.

The replacement process involves connecting four wires correctly - two "line" wires (hot and neutral coming from the panel) and two "load" wires (hot and neutral going to downstream outlets). The line wires must connect to the terminals marked "LINE" on the GFCI, while any downstream outlets connect to "LOAD" terminals. Mixing these up means the GFCI won't protect anything and creates a dangerous situation. If there are only two wires (hot and neutral with no downstream outlets), they both connect to the LINE terminals only.

New Brunswick's maritime climate adds extra considerations for GFCI outlets, especially in coastal areas like Saint John or Moncton where salt air can cause corrosion. Make sure you're using a GFCI rated for the location - outdoor outlets need weather-resistant (WR) rated GFCIs that can handle moisture and temperature swings. In unheated garages or outdoor locations, the outlet box should also be properly sealed against moisture infiltration.

Test the new GFCI immediately after installation by pressing the "TEST" button (outlet should stop working) then "RESET" (power should restore). If it doesn't work properly, you've likely mixed up the line and load wires. Also test any downstream outlets to ensure they're still protected. GFCI outlets should be tested monthly - they can fail over time and stop providing protection while still supplying power.

When you should call a professional instead: if you're adding a new GFCI where none existed before, installing GFCI protection at the panel, or if you discover aluminum wiring, knob and tube, or any unusual wiring situations. These scenarios require TSANB permits and professional installation. Also, if you're uncomfortable working with electricity or the existing wiring doesn't match standard configurations, it's worth having a licensed electrician handle it.

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Smart doorbell install — DIY or hire a pro?

Most smart doorbell installations are DIY-friendly for homeowners, but it depends on your existing doorbell wiring and electrical comfort level. If you have existing doorbell wiring in good condition, it's typically a straightforward replacement that doesn't require a licensed electrician in New Brunswick.

DIY Installation Requirements

For a successful DIY smart doorbell installation, you'll need existing doorbell wiring (usually 16-18 AWG wire) running from your current doorbell to a transformer, typically located near your electrical panel or attached to a junction box. Most homes built after 1960 have this basic doorbell infrastructure. The installation involves connecting the smart doorbell to the existing low-voltage wires (usually 8-24 volts) and potentially upgrading your transformer if your current one doesn't provide enough power.

Popular smart doorbells like Ring, Nest Hello, or Arlo require 16-24 volt transformers, while older doorbells often run on 8-10 volt transformers. You can check your transformer's voltage rating - it's usually printed on the device. If you need a transformer upgrade, this involves working with 120V household current and should be handled by a licensed electrician.

When to Call a Professional

Hire a licensed electrician if you need new wiring run to your door location, transformer replacement, or if you're uncomfortable working with any electrical connections. In New Brunswick, running new low-voltage doorbell wiring typically doesn't require a TSANB permit, but any work on the 120V transformer circuit does. If your home has no existing doorbell wiring, an electrician will need to run new wire from your electrical panel area to your front door - this usually costs \$200-400 depending on the distance and complexity.

Some smart doorbells offer battery-powered options that eliminate wiring concerns entirely, though you'll need to recharge them periodically. For hardwired installations with existing compatible wiring, most homeowners can handle the low-voltage connections safely with the power turned off at the breaker.

Safety and Next Steps

Always turn off power to the doorbell circuit at your electrical panel before starting any work. Test the wires with a voltage tester to ensure they're dead before handling them. If you encounter any 120V household wiring or need to modify circuits, stop and contact a licensed electrician - working with household current can be deadly and may void your insurance if done improperly.

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Can I replace a light fixture without an electrician?

Yes, you can legally replace a light fixture yourself in New Brunswick as long as you're replacing it with a similar fixture on the same existing circuit. This is one of the few electrical tasks homeowners can do without a TSANB permit or licensed electrician.

However, there are important safety requirements and limitations you need to understand. The fixture replacement must be "like for like" - meaning you're swapping out an existing fixture for another one that uses the same type of connection and doesn't require new wiring or circuit modifications. You're essentially just disconnecting the old fixture and connecting the new one to the existing wires.

Safety is absolutely critical when doing any electrical work. Always shut off the circuit breaker controlling that light before starting - never work on a live circuit. Test that the power is truly off using a non-contact voltage tester or by trying to turn the light on after flipping the breaker. Even simple fixture replacements can be dangerous if you're working with live wires.

The typical process involves removing the old fixture, identifying the hot (black), neutral (white), and ground (green or bare copper) wires, then connecting them to the corresponding wires on your new fixture using wire nuts. Make sure all connections are tight and properly insulated before installing the fixture and restoring power.

When you need a licensed electrician instead: If you're adding a new light where none existed before, installing a ceiling fan that requires additional support, upgrading to a fixture that draws significantly more power, or if the existing wiring looks damaged or outdated (like old cloth-wrapped wires), you'll need a TSANB-licensed electrician and proper permits. Moving light switches, adding dimmer controls, or any work involving new circuits also requires professional installation.

If you're uncomfortable with any part of the process, or if you discover unexpected wiring issues when you remove the old fixture, don't hesitate to call a professional. **New Brunswick Electrical can help you find a local electrician** if you decide the job is beyond your comfort level or if you discover it requires more extensive work than expected.

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Q5

Can I install recessed pot lights in a room with blown-in insulation in my attic?

Yes, but you MUST use IC-rated (Insulation Contact) and airtight pot light housings — using standard pot lights buried in insulation is a serious fire hazard and a code violation in New Brunswick.

Why this matters so much:

Standard (non-IC) recessed lights generate heat that must dissipate into the air space around them. Burying them in insulation traps that heat, potentially reaching ignition temperatures. The Canadian Electrical Code and NB Building Code require:

- **IC-rated housings:** These are designed to safely contact insulation. They have thermal protection that cuts power if the fixture overheats
- **Airtight housings:** Prevents warm moist air from rising through the fixture into the cold attic — this causes condensation, ice dams, and insulation damage. Critically important in NB's cold climate

The installation challenge:

Blown-in insulation (cellulose or fiberglass) in NB attics is typically 12-16 inches deep for adequate R-value. Installing pot lights means:

- Cutting holes from below through the ceiling drywall
- Clearing insulation away from each fixture location in the attic
- Installing IC-rated airtight housings
- Replacing insulation snugly around (and over) the IC-rated fixtures
- Sealing all gaps with fire-rated caulk from the attic side

DIY vs professional for this specific job:

Hire a licensed electrician. Here's why:

- Working in NB attics with blown insulation is physically difficult — limited visibility, cramped spaces, potential for disturbing insulation coverage

- Electrical connections for new circuits require a TSANB permit and inspection
- Improperly installed pot lights in insulation are a leading cause of attic fires
- The electrician can verify your attic has no vermiculite (potential asbestos) common in 1960s-1970s NB homes before disturbing insulation

LED makes this easier: Modern LED pot lights generate far less heat than older incandescent cans. Many slim LED panels don't even penetrate into the attic — they mount flush to the ceiling surface, completely avoiding the insulation contact issue. Ask your electrician about these — they're often the best solution for insulated attics.

Costs in New Brunswick:

- IC-rated LED pot lights: \$30-\$80 per fixture
- Slim LED panels (surface mount): \$40-\$60 per fixture
- Installation: \$150-\$250 per light including wiring
- TSANB permit: \$100-\$200
- Typical 6-light installation: \$1,200-\$2,500 total

Bottom line: Always IC-rated and airtight, always LED, and strongly recommend professional installation for this particular job in NB attics.

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Q6

When is it worth hiring an electrician vs calling a handyman for electrical work in NB?

In New Brunswick, the law is clear: ALL electrical work must be performed by a licensed electrician — handymen cannot legally do electrical work, even simple tasks like installing outlets or light fixtures.

The legal reality in NB:

Under New Brunswick's Electrician and Elevator Mechanic Licensing Act and TSANB regulations, all electrical installations, alterations, and repairs must be done by a person holding a valid electrician's licence. This is stricter than some other provinces. A handyman performing electrical work in NB is:

- Operating without the required licence
- Unable to pull a TSANB wiring permit
- Leaving you with uninspectable, unpermitted work
- Potentially voiding your home insurance coverage

What a licensed electrician handles (everything):

- Installing or replacing outlets and switches
- Running new circuits
- Panel work of any kind
- Light fixture installation and replacement
- Ceiling fan installation
- Any work involving your home's wiring
- Outdoor electrical installations
- Appliance hookups (stove, dryer, hot tub, EV charger)

What a handyman CAN legally do (non-electrical tasks):

- Replacing a light bulb
- Plugging in appliances
- Mounting a TV bracket near an existing outlet
- Running low-voltage cables (ethernet, coax, speaker wire) — though some argue even this requires an electrician
- Installing battery-operated devices (smoke detector battery swap, wireless doorbells)

Why this matters beyond the law:

- **Insurance:** If a fire starts from electrical work done by an unlicensed person, your home insurance claim will likely be denied. This is thousands or hundreds of thousands of dollars at stake

- **Home sale:** When you sell your home, the buyer's inspector or lawyer may ask for proof of electrical permits. Unpermitted work can delay or kill a sale, or require costly remediation
- **Safety:** Electrical work mistakes cause house fires. NB has older housing stock where wiring conditions aren't always obvious. A licensed electrician recognizes hazards a handyman might miss — aluminum wiring connections, overloaded circuits, missing bonding

Cost comparison:

- Handyman (illegal for electrical): \$40-\$60/hour
- Licensed electrician: \$85-\$125/hour
- The \$25-\$65/hour difference buys you: legal compliance, proper permitting, insurance validity, inspection, and accountability

Finding affordable electricians in NB:

- Get 3 quotes — pricing varies significantly
- Bundle small jobs together — calling an electrician for one outlet is expensive, but 5-6 small tasks in one visit is cost-effective
- Book during off-peak seasons (fall and winter) for better availability and sometimes lower rates
- Check our New Brunswick directory for licensed electricians in your area

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Should I upgrade my aluminum wiring connections or do a full rewire in New Brunswick?

For most NB homes with aluminum wiring, pigtail with approved connectors (COPALUM or AlumiConn) is the recommended first step — a full rewire is only necessary if the wiring itself is damaged or your insurance company demands it.

Understanding the issue:

Aluminum branch circuit wiring was installed in many NB homes built between 1965-1976. The aluminum wire itself isn't inherently dangerous — it's the connections that cause problems. Aluminum expands and contracts more than copper with temperature changes, gradually loosening connections at outlets, switches, and junction boxes. Loose connections create heat, arcing, and fire risk.

Option 1: Pigtail (repair connections) — \$2,500-\$5,000

A licensed electrician installs approved connectors that join a short copper "pigtail" wire to each aluminum wire end. The copper pigtail then connects to the outlet or switch. This addresses the connection problem without replacing all the wiring.

Approved connector methods:

- **COPALUM crimp connectors:** Considered the gold standard. Requires a special crimping tool only certified electricians carry. Creates a permanent, maintenance-free connection. Cost: \$50-\$80 per connection point
- **AlumiConn connectors:** Approved alternative that's more widely available. Uses set screws to create reliable aluminum-to-copper connections. Cost: \$30-\$50 per connection point
- **Ideal Twister Al/Cu wire nuts:** Listed for aluminum-to-copper connections, applied with anti-oxidant compound. Least expensive option but considered less reliable long-term

A typical NB home has 40-80 connection points (every outlet, switch, light fixture, and junction box on aluminum circuits).

Option 2: Full rewire — \$15,000-\$30,000+

Complete removal of aluminum wiring and replacement with copper throughout the home. This involves:

- Opening walls and ceilings (and repairing them after)
- Running all new copper circuits from the panel
- New outlets, switches, and fixtures

- TSANB permit and inspection
- 1-2 weeks of work for a typical home

When full rewire IS necessary:

- Wire insulation is cracked, brittle, or damaged (common in attics exposed to NB heat/cold cycles)
- Your home insurance company refuses coverage without full replacement (some NB insurers take this stance)
- You're doing a major renovation with walls already open
- The panel is undersized and needs upgrading anyway — a rewire addresses everything at once

When pigtail is sufficient:

- Wire insulation is in good condition
- Your insurance company accepts pigtail as remediation
- You want the most cost-effective safety improvement
- You're not planning a major renovation

Insurance considerations in NB: Contact your home insurance provider BEFORE deciding. Some NB insurers (Wawanesa, Aviva, Intact) accept pigtail with COPALUM connectors. Others require full rewire. Getting this answer first saves you from doing work that doesn't satisfy your insurer.

Your next step: Get a licensed electrician to inspect your aluminum wiring connections and provide quotes for both options. They can assess the wire condition and help you make the right choice for your situation.

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Q8

Is it safe to use space heaters in older New Brunswick homes and what are the electrical risks?

Space heaters are a common supplemental heating solution in New Brunswick — whether you're warming a cold bedroom in an older Saint John home, heating a drafty home office in Fredericton, or supplementing baseboard heat in a Moncton apartment. But space heaters are also the **leading cause of home heating fires in Canada**, and older NB homes present specific electrical risks that make safe usage more critical.

The Electrical Risks in Older NB Homes

Circuit Overloading

This is the biggest electrical risk. A standard 1,500-watt space heater draws **12.5 amps on a 120V circuit**. In older New Brunswick homes (built before 1990), many circuits are wired with **14-gauge wire on 15-amp breakers**. That single space heater consumes **83% of the circuit's capacity** — leaving almost nothing for other devices on the same circuit.

If you plug a 1,500W heater into a bedroom circuit that also serves a lamp (100W), a TV (200W), and a phone charger (10W), you're at **1,810W total — 15.1 amps on a 15-amp circuit**. The breaker should trip. If it doesn't (due to a worn breaker or, worse, an oversized breaker on undersized wire), the wiring overheats.

Older NB homes are especially vulnerable because:

- Many have only **one or two circuits per bedroom** (modern code requires more)
- Circuits often serve multiple rooms (a bedroom and hallway on one 15-amp circuit)
- Wiring may be deteriorated (brittle insulation, loose connections) from decades of thermal cycling in our cold climate
- Some homes from the 1960s–1970s have **aluminum wiring** with connections prone to overheating

Extension Cord Hazards

In older homes where outlet placement is inconvenient, people commonly run space heaters through extension cords. This is **one of the most dangerous practices** in residential electrical use:

- Most household extension cords are **16-gauge**, rated for only **10–13 amps**. A 1,500W heater exceeds this rating.
- Even a 14-gauge extension cord (rated for 15 amps) develops significant heat along its length when carrying near-maximum current continuously
- Coiled or bundled extension cords concentrate heat and can melt insulation

- Cord connections (where the cord meets the plug and the outlet) develop resistance over time, creating hot spots

Extension cords cause approximately 3,300 home fires per year in North America, and space heaters connected to extension cords are one of the leading scenarios.

Outlet Condition

Older NB outlets (20–50+ years old) develop **loose contacts** that create resistance and heat when a high-draw device like a space heater is plugged in:

- If a plug feels loose or wobbly in the outlet, don't use that outlet for a heater
- If the outlet face is warm to the touch while the heater is running, unplug immediately
- Discoloured, cracked, or melted outlet faces indicate previous overheating
- Two-prong (ungrounded) outlets common in pre-1970s NB homes lack the safety ground connection

Safe Space Heater Practices

Choosing the Right Heater

Look for these safety features (non-negotiable):

- **CSA or cUL certification** (not just "designed to meet" standards — it must be listed)
- **Tip-over auto-shutoff** — heater turns off if knocked over
- **Overheat protection** — internal thermostat shuts off the heater if it overheats
- **Cool-touch housing** — exterior doesn't get hot enough to burn (important with children or pets)

Heater types ranked by safety:

- **Oil-filled radiator** — safest type. No exposed heating element, low surface temperature, no fan (quiet), no fire risk from contact with combustibles. Drawback: slow to heat up. Cost: **\$60–\$150**.
- **Ceramic heater with fan** — fast heating, moderate surface temperature, tip-over protection standard. Cost: **\$30–\$80**.
- **Infrared/radiant heater** — heats objects directly (like sunlight). Safe if kept away from combustibles. Cost: **\$40–\$120**.
- **Fan-forced coil heater** — cheapest but highest fire risk. Exposed heating element glows red-hot. Avoid in homes with children, pets, or near any flammable material. Cost: **\$15–\$30**.

Electrical Safety Rules

1. Plug directly into a wall outlet — NEVER an extension cord or power strip. This is the single most important rule. If the heater can't reach an outlet, move the heater — don't bridge the gap with a cord.

2. Use a dedicated circuit. Unplug or turn off other devices on the same circuit while the heater runs. If you don't know which outlets share a circuit, turn on the heater and check if the breaker trips when you use other devices.

3. Choose the right wattage for your circuit:

- **15-amp circuit (14-gauge wire):** Maximum safe continuous load is **1,440W** (80% of 1,800W capacity). A 1,500W heater is technically over this threshold. Use the heater's **low setting (750W)** if the circuit serves other loads, or ensure nothing else is drawing power.
- **20-amp circuit (12-gauge wire):** Maximum safe continuous load is **1,920W**. A 1,500W heater is well within this range. Check your breaker panel — 20-amp circuits have "20" on the breaker handle.

4. Check the outlet before and during use:

- The plug should fit snugly (no wiggle)
- Touch the cover plate after 30 minutes of heater operation — it should be **room temperature or barely warm**
- If the outlet, plug, or cord is hot, unplug immediately and have the outlet inspected by an electrician

5. Never leave unattended overnight. If you need overnight bedroom heat, either:

- Use an oil-filled radiator with a built-in thermostat (lowest fire risk)
- Set a timer to shut off the heater after you fall asleep
- Better yet: invest in permanent heating (baseboard, heat pump) for regularly used rooms

Physical Safety Rules

- **3-foot (1-metre) clearance** from anything combustible — curtains, bedding, furniture, clothing, paper
- **Never drape anything over a heater** (clothes drying on a heater is a leading cause of house fires)
- Keep on a **flat, stable surface** — not on carpet piles, beds, or tables where it could fall
- Keep away from **water** — never use a space heater in a bathroom (unless it's a specifically rated bathroom heater, permanently installed)

When to Upgrade Instead of Using Space Heaters

If you're relying on space heaters regularly, it's often more cost-effective and safer to invest in permanent heating:

Add a baseboard heater: A permanently installed 240V baseboard heater on its own dedicated circuit is:

- Safer (no cord, no tip-over risk, thermostat-controlled)
- More efficient (240V means lower amperage for the same heat output)
- Code-compliant and TSANB-inspected
- Cost: **\$200–\$500 installed** per room (heater + circuit + installation + permit)

Install a mini-split heat pump: For rooms that need both heating and cooling, a ductless heat pump is dramatically more efficient than resistive heating:

- Produces **2.5–4 times more heat per watt** than a space heater or baseboard
- NB Power offers rebates that can offset **\$1,000–\$2,500** of installation cost
- Cost: **\$3,500–\$5,500 installed** for a single zone
- Annual heating cost: **40–60% less** than electric baseboard or space heaters

Cost Comparison: Space Heater vs. Permanent Heat

Option	Upfront Cost	Monthly Operating Cost (NB Power rates)	Safety Risk
1,500W space heater	\$30–\$150	\$80–\$120 (running 8+ hrs/day)	Higher
1,500W baseboard (installed)	\$200–\$500	\$80–\$120 (same wattage)	Lower
Mini-split heat pump (installed)	\$3,500–\$5,500	\$30–\$50 (same heat output)	Lowest

The baseboard costs the same to operate but eliminates the cord, extension cord, and fire risks. The heat pump costs much more upfront but pays for itself in 3–5 years through energy savings.

The Bottom Line for Older NB Homes

Space heaters can be used safely in older New Brunswick homes if you follow the rules: **plug directly into a wall outlet, use a dedicated circuit, choose a CSA-certified heater with safety features, and maintain 3-foot clearance.** But if you find yourself using space heaters as a regular heating solution, investing in permanent heating (baseboard or heat pump) is safer, more convenient, and often more economical in the long run.

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Q9

Do I need a licensed electrician to change a light fixture in New Brunswick or can I do it myself?

Swapping a light fixture in New Brunswick is one of the most common home electrical tasks, and the good news is that **replacing an existing fixture with a new one on the same circuit is generally a DIY-friendly project** — no electrician or TSANB permit required. However, there are important conditions and situations where professional help is the right call.

When DIY Is Appropriate

You can safely replace a light fixture yourself when ALL of the following are true:

- **You're replacing an existing fixture** — there's already a working light fixture in the same location with an electrical box in the ceiling or wall
- **No new wiring is needed** — you're connecting the new fixture to the same wires in the same box
- **The electrical box can support the new fixture's weight** — critical for heavier fixtures like chandeliers (more on this below)
- **You're comfortable turning off the breaker and working with basic wire connections** — wire nuts, ground wires, and mounting hardware

The basic process:

- Turn off the correct breaker at the panel (verify with a non-contact voltage tester — **\$15–\$25** at any NB hardware store)
- Remove the old fixture (unscrew mounting screws, disconnect wire nuts)
- Confirm the electrical box is secure and has enough space
- Connect new fixture wires: **black to black (hot), white to white (neutral), green or bare copper to green or bare copper (ground)**
- Secure the fixture to the mounting bracket

- Install bulbs, restore power, test

Time: **20–45 minutes** for a straightforward swap.

When You Need an Electrician

No Existing Electrical Box

If there's no light fixture or electrical box where you want one — for example, adding a new ceiling light in a room that currently has none — a licensed electrician needs to run a new circuit, install the box, and add a switch. This requires a **TSANB permit and inspection**. Cost: **\$200–\$500** per new fixture location.

Heavy Fixtures (Chandeliers, Ceiling Fans)

Standard ceiling electrical boxes are rated for **up to 23 kg (50 lbs)**. Ceiling fan-rated boxes are specifically reinforced and attached to the structural framing. If you're installing:

- A chandelier over **15 kg (35 lbs)**: Verify the existing box rating and reinforcement
- **Any ceiling fan**: Must use a fan-rated box (labelled "Suitable for Fan Support" or similar). Installing a fan on a standard box is dangerous — the vibration can work the box loose over time, and a falling fan is a serious injury risk

If the existing box isn't rated for the weight, an electrician needs to install a proper fan-rated or heavy-fixture-rated box. Cost: **\$100–\$250** including the box and installation.

Recessed Light Conversion

Converting a standard ceiling box to a recessed (pot) light — or adding new recessed lights where none exist — involves cutting holes in the ceiling, potentially moving insulation, and ensuring proper clearances. This is electrician territory and requires a TSANB permit if new wiring is involved.

Knob-and-Tube or Aluminum Wiring

If your older New Brunswick home has **knob-and-tube wiring** (pre-1940s, found in heritage areas of Saint John, Fredericton, Woodstock) or **aluminum branch wiring** (1965–1976), fixture replacement is more complex:

- Knob-and-tube: The wiring methods and connections are different from modern practice. A fixture swap might seem simple, but disturbing old connections can create new problems.
- Aluminum wiring: Connections to a new copper-wire fixture must use approved AL/CU connectors to prevent the dangerous oxidation/expansion issues that aluminum-to-copper direct connections cause.

Both situations warrant an electrician's expertise.

Old Wiring With No Ground

Many older NB homes have two-wire cable (hot and neutral only, no ground). Modern light fixtures typically have three wires (hot, neutral, and ground). When there's no ground wire in the box:

- Metal fixtures should ideally be grounded for safety
- The CEC allows connecting to an ungrounded box if the circuit is GFCI-protected
- An electrician can advise on the safest approach for your specific situation

Adding a Switch or Dimmer

If the fixture replacement also involves changing from a pull-chain fixture to a wall switch, or adding a dimmer where none existed, that's additional wiring work that may require a permit depending on scope.

Common DIY Mistakes to Avoid

Not turning off the breaker: Flipping the light switch off is NOT sufficient. Switches only interrupt the hot wire — the neutral remains energized, and in miswired older homes, the switch may be on the neutral (a code violation but not uncommon). Always turn off the **breaker** and verify with a voltage tester.

Assuming the breaker labels are accurate: In many NB homes, especially those where previous owners did their own work, breaker labels are wrong. Test the actual circuit, don't trust the label.

Ignoring the ground wire: If the old fixture wasn't grounded (common in pre-1970s installations), don't just leave the new fixture's ground wire disconnected. Connect it to the box ground if one exists, or to the cable's ground wire.

Overloading the box: Stuffing too many wire connections into a small ceiling box violates CEC box fill rules and creates a fire hazard. If the box is packed tight with wires from multiple circuits (common at ceiling junctions), consider having an electrician install a larger box.

Wrong bulb wattage: The new fixture will specify a maximum bulb wattage (e.g., "60W max per socket"). Exceeding this with incandescent bulbs creates excessive heat. LED bulbs are much safer since a 10W LED produces the same light as a 60W incandescent while generating far less heat.

Cost Comparison

Scenario	DIY Cost	Electrician Cost	Notes
Simple fixture swap	\$0 (just the fixture)	\$75–\$150 + fixture	
Swap + fan-rated box	\$30–\$50 (box + hardware)	\$150–\$300	
New fixture location (new wiring)	Not recommended DIY	\$250–\$500 + permit	
Chandelier installation	\$0–\$50 (helper + hardware)	\$150–\$350	
Recessed light conversion	Not recommended DIY	\$150–\$300 per light + permit	

The Legal Perspective in New Brunswick

New Brunswick's electrical regulations, administered by TSANB, **do allow homeowners to perform basic electrical work on their own home** — including fixture replacement. However:

- Work that requires a **permit** (new circuits, new boxes, panel modifications) must be inspected by TSANB regardless of who does the work
- If you're a **tenant**, you should not modify the electrical system — that's the landlord's responsibility
- If you plan to **sell the home**, any visible DIY electrical work may be scrutinized by the buyer's home inspector. Sloppy work can raise red flags and reduce offers.

The Bottom Line

Replacing an existing light fixture is a perfectly reasonable DIY task for any handy New Brunswick homeowner who follows basic safety practices: **turn off the breaker, verify with a tester, match wire colours, secure the ground, and don't exceed the box rating**. For anything beyond a simple swap — new locations, heavy fixtures, old wiring, or adding switches — a licensed electrician is the right investment. At **\$75–\$150 for a straightforward installation**, it's affordable peace of mind.

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Is it worth hiring an electrician to install outdoor Christmas lights or can I do it myself in New Brunswick?

The answer depends on what you're planning. Simple plug-in string lights along a railing are clearly DIY territory, but permanent installations, roofline work, or anything involving new circuits is where a licensed electrician earns their fee — especially given New Brunswick's harsh winter conditions.

What You Can Safely Do Yourself

Basic outdoor Christmas lighting is a manageable DIY project when you follow some key rules:

Safe DIY tasks include:

- Hanging plug-in LED string lights on gutters, railings, or bushes
- Using outdoor-rated extension cords to reach existing GFCI-protected outlets
- Setting up ground-mounted light displays and inflatables
- Installing timer switches on existing outdoor outlets
- Wrapping trees with low-voltage LED strands

Essential safety rules for DIY:

- Only use lights rated for **outdoor use** (look for CSA or cUL certification marks)
- Connect to **GFCI-protected outlets** — required by the Canadian Electrical Code for all outdoor receptacles
- Don't exceed the **manufacturer's daisy-chain limit** (typically 3–5 strands end-to-end for LED, fewer for incandescent)
- Use outdoor-rated extension cords rated for the total wattage
- Keep all connections off the ground and away from standing water or snow accumulation
- Never staple through electrical cord insulation — use insulated clips or hooks

Cost for a basic DIY setup: **\$50–\$300** for lights, clips, timers, and extension cords from Kent Building Supplies or Canadian Tire.

When to Hire an Electrician

Several situations call for professional help:

Adding new outdoor outlets: If you don't have enough exterior outlets — common in older homes in Saint John's South End, Fredericton's downtown heritage district, or older Moncton neighbourhoods — you'll need a

licensed electrician to install new weatherproof GFCI outlets. This requires running wire from your panel, cutting into exterior walls, and installing proper weatherproof boxes. Cost: **\$200–\$500 per outlet** depending on wire run distance.

Permanent roofline installations: The growing trend of permanent LED roofline lighting (like Jellyfish or Trimlight systems that work year-round for holidays and accent lighting) requires hardwired installation. An electrician needs to:

- Install a dedicated circuit from your panel
- Mount the LED channel along the roofline
- Wire the controller and transformer
- Ensure everything meets CEC requirements for outdoor fixed wiring

Cost for permanent systems: **\$3,000–\$8,000** for a typical New Brunswick home, including materials and professional installation.

Circuit overloads: If plugging in your lights trips a breaker, you're overloading the circuit. This is especially common in older New Brunswick homes with 15-amp outdoor circuits that are shared with interior rooms. An electrician can add a dedicated outdoor lighting circuit. Cost: **\$300–\$600**.

High-up work on tall homes: Safety is a real concern. New Brunswick's December and January conditions — ice, snow, freezing rain, and shortened daylight — make working on ladders at roofline height genuinely dangerous. If your home is more than one storey, consider hiring a professional who has proper fall protection equipment and experience working in winter conditions. A fall from a ladder is one of the most common home injury causes in Canada during the holiday season.

New Brunswick-Specific Considerations

Maritime weather: Our combination of freeze-thaw cycles, coastal moisture, heavy wet snow, and ice storms (like the ones that regularly affect the Miramichi and Acadian Peninsula areas) is brutal on outdoor electrical connections. All connections should be elevated, weatherproofed, and strain-relieved. Cheap indoor-rated connections exposed to Maritime weather are a fire hazard.

NB Power load: Running thousands of watts of incandescent Christmas lights adds noticeably to your NB Power bill. Switching to LED cuts consumption by **80–90%**. A display that would cost \$50–\$80/month in electricity with incandescent bulbs costs \$5–\$10/month with LED equivalents. Over a 6-week display season, that's a meaningful savings.

TSANB requirements: If an electrician does any permanent wiring for your display, TSANB (Technical Safety Authority of New Brunswick) requires an electrical permit and inspection. This applies to new circuits, new outlets, or hardwired permanent lighting — not to plug-in temporary displays.

Wind loads: Homes in exposed areas — along the Bay of Fundy coast, the Northumberland Strait, or hilltop locations around Bathurst and Campbellton — experience significant winter wind. Ensure any displays are securely fastened. Unsecured lights can pull away from gutters, creating both an electrical hazard and property damage risk.

Cost Comparison Summary

| Approach | Cost | Best For | |-----|-----|-----| | DIY plug-in lights | \$50–\$300 | Simple displays, ground-level work | | Electrician: new outlet | \$200–\$500 | Homes lacking exterior receptacles | | Electrician: dedicated circuit | \$300–\$600 | Heavy displays, avoiding breaker trips | | Electrician: permanent system | \$3,000–\$8,000 | Year-round roofline lighting |

The Verdict

For most New Brunswick homeowners, a modest plug-in LED display is perfectly fine as a DIY project — just use outdoor-rated, CSA-certified products and GFCI-protected outlets. But if you're dreaming of a show-stopping display that needs new circuits, or if your home lacks adequate outdoor outlets, the \$200–\$600 investment in an electrician's time is money well spent for both safety and peace of mind during the holiday season.

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Q11

Can I convert my oil furnace to electric heat in New Brunswick?

Converting from Oil to Electric Heat in New Brunswick

With oil prices volatile and heat pump technology improving, many NB homeowners are considering switching away from oil. Here's what the conversion involves electrically, what it costs, and which electric heating option makes the most sense.

Option 1: Oil ? Heat Pump (Recommended)

A heat pump is the clear winner for most NB homes converting from oil. It uses electricity but delivers 2.5–3.5 times more heat per kilowatt than direct electric heating.

Mini-split (ductless) heat pump:

- Best for: Homes without existing ductwork, supplementing remaining oil furnace, single-zone or multi-zone heating
- Electrical needs: Dedicated 240V, 20–30A circuit per outdoor unit, plus disconnect switch
- Keeps existing oil furnace as backup for extreme cold snaps (below -25°C)
- Cost: \$3,500–\$7,000 per zone installed (before NB Power rebates)
- Operating cost: ~\$800–\$1,200/year for a 1,500 sq ft home (vs. \$2,500–\$4,000 for oil)

Central ducted heat pump:

- Best for: Homes with existing ductwork (replacing the oil furnace entirely)
- Electrical needs: Dedicated 240V, 30–60A circuit for the heat pump, plus 240V circuit for electric backup heat strips in the air handler
- Removes oil tank and furnace completely
- Cost: \$8,000–\$15,000 installed (before rebates)
- May require a panel upgrade if your panel can't handle the additional 40–80 amps

Electrical requirements for heat pump conversion:

| Component | Circuit Needed | Cost | |-----|-----|-----| | Mini-split outdoor unit | 240V, 20–30A dedicated | \$400–\$1,200 | | Central heat pump | 240V, 30–50A dedicated | \$500–\$1,500 | | Air handler with backup strips | 240V, 30–60A dedicated | \$500–\$1,500 | | Disconnect switch | Required by CEC | Included in above | | Panel upgrade (if needed) | 100A ? 200A | \$2,500–\$4,500 | | TSANB permit | Required | \$50–\$100 |

Option 2: Oil ? Electric Baseboard

Replacing an oil furnace with electric baseboard heaters is simpler but significantly more expensive to operate than a heat pump.

When baseboard makes sense:

- Budget is very tight and you can't afford a heat pump upfront
- You're converting a small space (cabin, cottage, single room)
- As supplementary heating in zones the heat pump doesn't reach

Electrical requirements: A full baseboard conversion for a 1,500 sq ft home requires:

- 10,000–15,000 watts of installed baseboard capacity
- 4–8 dedicated 240V circuits (each circuit serving 2–3 heaters)
- Individual thermostats for each zone
- Almost certainly a panel upgrade to 200A

Component Cost ----- -----	Baseboard heaters (8–12 units) \$400–\$1,200	New 240V circuits (4–8) \$1,600–\$4,800
Thermostats (6–10 zones) \$300–\$1,000	Panel upgrade (likely needed) \$2,500–\$4,500	TSANB permit \$75–\$150
Total electrical \$4,875–\$11,650		

Operating cost: ~\$2,000–\$3,500/year — often similar to or more than oil, depending on oil prices.

Option 3: Oil ? Electric Boiler (Hydronic)

If your home has hot water radiators or in-floor radiant heating fed by the oil boiler, an electric boiler is a direct replacement.

Electrical requirements:

- Dedicated 240V circuit, typically 40–100A depending on boiler size
- Very likely requires a panel upgrade
- Some homes may need a 400A service or a second panel

Cost: \$3,000–\$8,000 for the boiler plus \$2,500–\$6,000 for electrical.

Operating cost: Similar to baseboard — electric resistance heating rates apply.

Panel Capacity: The Critical Question

Most oil-heated NB homes have 100A panels because oil furnaces draw minimal electricity (just the fan motor and ignitor). Converting to any form of electric heating adds substantial electrical load:

| Heating Type | Additional Amps Needed | |-----|-----| | Mini-split heat pump (1 zone) | 15–30A
| | Central heat pump + backup strips | 50–80A | | Full baseboard conversion | 60–100A | | Electric boiler |
60–100A |

A 100A panel serving a home with an electric dryer (30A), electric stove (50A), hot water tank (20A), and general loads (30A) is already at 130A theoretical demand. Adding 30–80A of heating load pushes well beyond capacity.

Bottom line: Most oil-to-electric conversions in NB require a 200A panel upgrade. Budget \$2,500–\$4,500 for this on top of the heating conversion costs.

Oil Tank Removal

Once you're off oil, the tank should be removed:

- **Indoor tank removal:** \$500–\$1,500 by a licensed oil technician
- **Underground tank removal:** \$2,000–\$5,000+ (includes soil testing for contamination)
- NB regulations require proper decommissioning — you can't just abandon it

NB Power Rebates

NB Power's Total Home Energy Savings Program has offered significant rebates for oil-to-heat-pump conversions. Check current offerings before committing — rebates have ranged from \$500 to \$5,000+ depending on the program year and system type. An EnerGuide home energy assessment may be required to qualify.

The Smart Conversion Path

- **Get an EnerGuide assessment** (\$100–\$300) — identifies insulation and air sealing priorities
- **Upgrade insulation first** — reduces the size (and cost) of the heating system you need
- **Install a heat pump** — mini-split for most homes, central ducted if you have ductwork
- **Keep the oil furnace as backup** (optional) — use it only below -25°C while the heat pump handles 95% of heating
- **Remove the oil system** when comfortable that the heat pump meets your needs

This phased approach spreads costs over 1–2 years and lets you verify heat pump performance through a full NB winter before committing to full oil removal.

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Q12

How do I wire a bathroom exhaust fan and do I need a permit?

Bathroom Exhaust Fan Wiring in New Brunswick

A properly wired and vented bathroom exhaust fan is essential for moisture control — critical in NB's climate where winter humidity condensation causes mould, peeling paint, and structural damage in bathrooms.

Replacement vs. New Installation

Replacing an existing fan (same location, same wiring):

- No TSANB permit required
- Disconnect old fan, connect new fan to existing wiring
- DIY-friendly if you're comfortable with basic electrical
- Cost: \$30–\$150 for the fan + 30–60 minutes

New installation (no fan existed before):

- TSANB electrical permit required (new wiring)
- Must be done by or supervised by a licensed electrician
- Requires running new cable, installing a switch, and venting to the exterior
- Cost: \$400–\$800 total (fan + wiring + venting + permit)

Choosing the Right Fan

Sizing by CFM (cubic feet per minute): The minimum fan capacity should be 1 CFM per square foot of bathroom, with a floor of 50 CFM:

| Bathroom Size | Minimum CFM | |-----|-----| | Small (40 sq ft, powder room) | 50 CFM | | Standard (60–80 sq ft) | 70–80 CFM | | Large (100+ sq ft, ensuite) | 100–150 CFM | | With jetted tub or large shower | 150+ CFM |

Sound rating (sones): Lower is quieter. 0.3–1.0 sones is whisper-quiet; 3.0–4.0 sones is noticeably loud. Spend the extra \$20–\$40 for a quiet model — you'll hear it multiple times daily.

Features to consider:

- Humidity sensor (auto-on when humidity rises) — \$80–\$150
- Motion sensor — \$60–\$100
- Timer switch — \$15–\$40 for the switch
- Built-in LED light — \$60–\$120
- Heater built-in — \$150–\$300 (requires dedicated circuit)

Wiring Options

Option 1: Fan on the existing light switch Simplest wiring — the fan and light turn on together. Connect the fan's black wire to the same hot wire as the light fixture. No new switch or wiring needed.

Pros: Free, no rewiring Cons: Fan runs only when light is on; may not run long enough after showering

Option 2: Separate switch for the fan Run a 14/3 NMD90 cable from the switch box to the fan location. The extra conductor (red wire) provides independent control of the fan.

- Black wire ? light
- Red wire ? fan
- White wire ? neutral (shared)
- Bare ? ground

Two separate switches in the box control light and fan independently. Requires: 14/3 cable, double-gang switch box, TSANB permit if new wiring. Cost: \$200–\$500 (electrician)

Option 3: Timer switch Install a countdown timer switch (\$15–\$40) that turns the fan on for a set duration (5, 10, 20, 30, or 60 minutes). The fan runs after showering and shuts off automatically.

This is the most practical option for moisture control — set it for 20–30 minutes after each shower. Can be wired on the existing fan circuit with no new wiring.

Option 4: Humidity-sensing fan The fan has a built-in humidity sensor that turns the fan on automatically when moisture levels rise and off when they drop. No switch operation needed — the fan takes care of itself.

Cost: \$80–\$150 for the fan. Wiring is the same as a standard fan.

Venting (Critical — Often Done Wrong)

The exhaust must vent to the EXTERIOR of the home. Common violations found in NB homes:

Wrong:

- Vented into the attic (moisture causes mould, ice dams, and structural rot)
- Vented into the soffit (moisture gets sucked back into the attic through soffit vents)
- Duct disconnected or never connected (fan runs but exhausts into the ceiling cavity)

Right:

- Insulated duct from the fan to a wall cap or roof vent
- Duct should be as short and straight as possible
- Use rigid or semi-rigid duct, not flexible vinyl (which sags and traps moisture)
- Insulate the duct in cold spaces (attic) to prevent condensation inside the duct — critical in NB where attic temperatures drop well below freezing
- Vent cap should have a damper to prevent cold air backdraft

NB Climate Considerations

Condensation in the duct: In winter, warm moist air from the bathroom hitting a cold duct in an unheated attic condenses and can drip back into the fan or leak into the ceiling. Solutions:

- Use insulated rigid duct (pre-insulated 4" duct, \$3–\$6/foot)
- Keep duct runs through cold spaces as short as possible
- Slope the duct slightly toward the exterior so any condensation drains out

Backdraft damper: NB winds can force cold air backward through the vent cap, cooling the bathroom and wasting heating energy. Install a backdraft damper at the fan and at the vent cap for double protection. Cost: \$5–\$15 each.

Run time in winter: Run the fan for 20–30 minutes after each shower or bath. In NB's dry winter air, bathroom moisture dissipates faster than in summer, but the warm moist air condensing on cold windows and walls is more damaging in winter.

Installation Summary

Scenario	Permit?	DIY?	Cost						
Replace fan (same location, same wiring)	No	Yes	\$30–\$150	Replace fan + add timer switch	No	Yes	\$50–\$190	New fan installation (new wiring)	Yes
New fan + separate switch + venting	Yes	No	— hire electrician	\$400–\$800	New fan + separate switch + venting	Yes	No	— hire electrician	\$500–\$1,000
Fan/light/heater combo (new dedicated circuit)	Yes	No	— hire electrician	\$600–\$1,200					

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What electrical work do I need for a basement apartment or in-law suite in NB?

Electrical Requirements for Basement Apartments and In-Law Suites in New Brunswick

Converting a basement into a legal apartment or in-law suite is one of the most common renovation projects in New Brunswick, driven by housing demand in Moncton, Fredericton, and Saint John. The electrical requirements are substantial and must meet both the CEC and your municipality's bylaws.

Minimum Electrical Requirements (CEC + NB Building Code)

Separate sub-panel or panel: A basement suite needs its own electrical distribution, typically through:

- A **dedicated sub-panel** (60A or 100A) fed from the main house panel
- Or, for fully separate units, an **independent panel** with its own meter (check with NB Power about separate metering requirements)

Cost for sub-panel installation: \$1,200–\$2,500

Dedicated circuits required:

| Circuit | Requirement | |-----|-----| | Kitchen countertop | 2 × 20A circuits (CEC minimum) | | Kitchen dishwasher | 1 × 20A dedicated | | Bathroom receptacles | 1 × 20A circuit | | Laundry (if washer included) | 1 × 20A circuit | | Dryer (if electric) | 1 × 30A, 240V dedicated | | Stove/range (if electric) | 1 × 40/50A, 240V dedicated | | Refrigerator | 1 × 15A dedicated (recommended) | | Furnace/heating | Dedicated circuit sized to heating system | | Smoke/CO detectors | On general lighting circuit (hardwired, interconnected) | | General lighting | 1–2 × 15A circuits | | General receptacles | 1–2 × 15A circuits | | Bathroom exhaust fan | On bathroom circuit or separate |

Total: 10–15 circuits minimum for a basic one-bedroom basement suite.

GFCI protection:

- All kitchen receptacles within 1.5m of sink
- All bathroom receptacles
- Laundry receptacles
- Any receptacles in unfinished areas (utility room, storage)

AFCI protection:

- All 15A and 20A circuits serving bedrooms, living room, and dining area

Smoke and CO detectors:

- Hardwired, interconnected smoke detectors in every bedroom, outside each sleeping area, and on every level
- CO detector on every level with a fuel-burning appliance or attached to a space with one (e.g., if the furnace room is on the same level)
- The suite's detectors should be interconnected with each other (all alarm together) but typically NOT interconnected with the upstairs unit's detectors

Lighting Requirements

- **Every habitable room** must have a light fixture controlled by a wall switch at the entrance
- **Bathrooms** need a light and an exhaust fan (required if no operable window)
- **Kitchen** needs adequate lighting over work surfaces
- **Exterior entrance** to the suite needs a light controlled from inside
- **Stairways** need lighting with 3-way switches at top and bottom
- **Emergency/exit lighting** may be required depending on municipal bylaws

Receptacle Requirements

The CEC specifies minimum receptacle spacing:

- No point along a wall should be more than 1.8m from a receptacle
- Kitchen countertop: receptacle within 900mm of each end, and no point more than 900mm from a receptacle
- Bathroom: at least one receptacle within 1m of the sink
- Any wall space 900mm or wider needs a receptacle

Heating Considerations

The suite's heating system directly impacts electrical requirements:

Electric baseboard heaters (most common in NB basement suites):

- Each heater on a dedicated circuit (or multiple heaters sharing a circuit within amperage limits)
- 240V heaters are more efficient than 120V
- Typical basement suite needs 4–8 baseboard heaters depending on size and insulation
- Each 1,500W baseboard draws 6.25A at 240V
- Total heating circuit requirement: 2–4 dedicated circuits

Mini-split heat pump (increasingly popular):

- One dedicated 240V circuit, typically 20A or 30A
- More energy-efficient than baseboard (saves tenants 40–60% on heating)
- Adds \$3,500–\$6,000 to the project but increases rental value

Permit and Inspection

All basement suite electrical work requires:

- **TSANB electrical permit** — your electrician applies
- **Rough-in inspection** — BEFORE drywall, insulation covering wires, or ceiling closure
- **Final inspection** — after all devices, fixtures, and the sub-panel are complete
- **Municipal building permit** — the apartment itself needs a building permit from your municipality (separate from the electrical permit). Many NB municipalities require suite registration.

Total Electrical Costs

| Scope | Cost Range | |-----|-----| | Basic suite (sub-panel + 10–12 circuits, baseboard heat) | \$5,000–\$10,000 | | Mid-range suite (sub-panel + 12–15 circuits, heat pump, good lighting) | \$8,000–\$15,000 | | High-end suite (separate meter, heat pump, full kitchen appliance circuits, abundant lighting) | \$12,000–\$20,000+ | | Panel upgrade required (if main panel is 100A or less) | Add \$2,500–\$4,500 |

Common Mistakes

- **Not getting a building permit** — municipalities fine for illegal suites and can require you to undo work
- **Undersizing the sub-panel** — a 60A panel fills up fast. Install 100A if budget allows.
- **Closing walls before inspection** — TSANB must see the rough-in wiring. Opening drywall for inspection costs \$500–\$2,000 in wasted work.
- **Not interconnecting smoke detectors** — each detector must trigger all other suite detectors simultaneously. Wireless interconnect models work if running wire between locations is impractical.
- **Skipping AFCI breakers** — they're code-required for bedrooms and living areas in new work. Your inspector will flag them.

Hiring

This is a significant electrical project — 10–15+ new circuits, a sub-panel, potentially a panel upgrade, plus coordination with framing, plumbing, and HVAC trades. Hire a TSANB-licensed electrician with basement suite

experience. Many electricians in Moncton, Fredericton, and Saint John have wired dozens of basement apartments and know the municipal requirements specific to your area.

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Q14

Can a homeowner do their own electrical work in New Brunswick?

Homeowner Electrical Work Rules in New Brunswick

This is one of the most commonly asked questions, and the answer in New Brunswick is more nuanced than a simple yes or no.

What the Law Says

New Brunswick's Electrical Installation and Inspection Act governs who can perform electrical work. In general, **electrical work in NB must be performed by or under the supervision of a licensed electrician**. However, there are limited exceptions for homeowners.

What Homeowners CAN Typically Do

Homeowners in New Brunswick can generally perform basic maintenance and like-for-like replacements in their own home:

- **Replace light fixtures** — swapping an existing fixture for a new one in the same location
- **Replace switches and outlets** — including upgrading to GFCI outlets or smart switches
- **Replace a light bulb or ballast** — basic maintenance

- **Replace a plug on an appliance cord** — repair work
- **Install low-voltage systems** — doorbells, thermostats (low-voltage only), landscape lighting transformers, ethernet/cable wiring

These tasks don't typically require a permit or licensed electrician, but the work must still meet CEC standards.

What Homeowners CANNOT Do

Work that modifies your home's electrical system requires a TSANB permit and must be done by a licensed electrician:

- **Adding new circuits** to your panel
- **Running new wiring** behind walls, through attics, or under floors
- **Adding new outlets or switches** in locations where none existed
- **Panel upgrades or replacements**
- **Service entrance work** (meter base, mast, main disconnect)
- **Wiring a new addition, garage, or outbuilding**
- **Electric vehicle charger installation** (new dedicated circuit)
- **Hot tub or pool wiring**
- **Anything involving 240V circuits**
- **Generator transfer switch installation**

The Permit Question

Even if a homeowner were technically capable of doing more advanced work, **TSANB requires permits for anything beyond basic maintenance**, and permits are tied to licensed electrical contractors. You cannot pull an electrical permit as a homeowner in New Brunswick the way you might in some US states.

This means: even if you know how to wire an outlet, if it involves new wiring, you need a licensed electrician to do the work (or supervise), pull the permit, and have it inspected.

Why This Matters

Insurance: If unpermitted electrical work causes a fire or injury, your homeowner's insurance can deny the claim. Insurance companies in NB routinely investigate the cause of electrical fires, and unpermitted work is a red flag.

Selling your home: When you sell, a home inspection will note any obvious amateur electrical work. Buyers (and their banks) may require a licensed electrician to inspect and certify the electrical system. Unpermitted work can delay or kill a sale.

Safety: The CEC exists because electricity is unforgiving. Improper wiring causes fires, shocks, and deaths. What seems like a simple outlet installation involves understanding circuit capacity, wire gauge, box fill calculations, and proper connections — details that trained electricians learn over a 4-year apprenticeship.

Cost of Hiring vs. DIY Risk

The financial argument for DIY electrical often doesn't hold up:

Task	Licensed Electrician Cost	Risk of DIY
Replace outlet with GFCI	\$100–\$175	Low (homeowner-legal)
Add new outlet (new wiring)	\$200–\$400	Insurance void, permit violation
Install ceiling fan (existing box)	\$150–\$250	Low (homeowner-legal)
Run new circuit for shop	\$300–\$600	Insurance void, permit violation
Panel upgrade	\$2,500–\$4,500	Illegal, extremely dangerous

The Smart Approach

Do the tasks that are legal and within your comfort level — fixture swaps, outlet upgrades, switch replacements. For anything involving new wiring, new circuits, or panel work, hire a TSANB-licensed electrician. The cost is modest, the work is guaranteed, and your insurance stays valid.

Many electricians in Moncton, Saint John, Fredericton, and across NB are happy to handle small jobs. Some offer handyman-style service calls where they'll do several small tasks in one visit for a flat fee of \$200–\$400, which is the most cost-effective way to knock out a list of minor electrical improvements.

Find a Electrical Contractor

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Should I hire an electrician or do it myself to replace a light switch in New Brunswick?

Replacing a Light Switch in New Brunswick — DIY or Hire an Electrician?

Replacing a basic light switch is one of the simplest electrical tasks a homeowner can tackle, and New Brunswick law allows you to do it yourself on your own primary residence. But "simple" doesn't mean "risk-free," and there are situations where even a switch replacement warrants calling a professional. Here's how to decide.

When DIY Makes Sense

A straightforward single-pole switch swap — replacing one standard toggle switch with another standard toggle switch or a basic dimmer — is genuinely simple electrical work. The wiring hasn't changed, you're not adding or modifying circuits, and the process takes 10-15 minutes for someone comfortable with basic tools.

What you need:

- Non-contact voltage tester (\$15-\$25 at any Kent or Home Hardware in New Brunswick)
- Flathead and Phillips screwdrivers
- Wire strippers (if needed)
- The new switch (\$3-\$15 for standard, \$25-\$50 for a dimmer)

The process:

- Turn off the breaker controlling the switch — **never rely on just flipping the switch off**
- Use the voltage tester to confirm power is off at the switch box
- Remove the cover plate and unscrew the switch from the box
- Take a photo of the wiring before disconnecting anything
- Note which wires connect to which terminals — black (hot) wires on brass screws, white (neutral) if present on silver screw, green or bare copper on green ground screw
- Connect the new switch in the same configuration
- Screw the switch into the box, install the cover plate
- Turn the breaker back on and test

No TSANB permit is required for a like-for-like switch replacement — this is considered maintenance, not new electrical work.

When You Should Hire a Professional

Aluminum wiring: If your New Brunswick home was built in the late 1960s through mid-1970s, you may have aluminum branch circuit wiring. You'll recognize it by the silver colour of the wire (copper is orange/brown). Aluminum wiring requires special switches rated "CO/ALR" (copper-aluminum revised) and anti-oxidant compound on connections. Using a standard switch on aluminum wiring creates a fire hazard at the connection point. Many home fires attributed to aluminum wiring occurred specifically at switch and outlet connections. A licensed electrician experienced with aluminum wiring charges \$75-\$150 per switch replacement with proper CO/ALR devices.

3-way or 4-way switch circuits: If the light is controlled by switches at two or more locations (common in New Brunswick hallways, stairways, and large rooms), the wiring is significantly more complex. A 3-way switch has three terminals plus ground, and the wires must be connected in the correct configuration or the circuit won't work — or worse, it'll work intermittently and create a potential hazard. If you're not confident reading a 3-way wiring diagram, hire a professional (\$100-\$200).

No ground wire in the box: Older New Brunswick homes — especially those built before 1960 — may not have ground wires at switch boxes. If you open the box and find only two wires (one black, one white) with no bare copper or green wire, the circuit isn't grounded. A basic switch will still work, but if you're installing a dimmer or smart switch that has a ground wire, you need a professional to assess the grounding situation.

Smart switch requiring a neutral wire: Many WiFi and Zigbee smart switches require a neutral wire (white) in the switch box. In homes built before the 1980s across New Brunswick, the neutral wire often runs directly to the fixture rather than through the switch box. If you open the box and find only a hot wire and switch leg (both may be black or one black and one red) with no white neutral wire, you either need a smart switch model that works without a neutral (limited options) or an electrician to run a neutral wire to the box (\$100-\$200).

Knob and tube wiring: If your switch box contains cloth-covered wires on ceramic knobs (found in pre-1950 New Brunswick homes, especially in Saint John, Fredericton, and older Moncton neighbourhoods), do not attempt DIY replacement. Knob and tube insulation is brittle and can crack when disturbed, exposing bare conductors. Have a licensed electrician handle any work on K&T circuits.

The box is overcrowded or damaged: If the switch box is packed with wires, has cracked or broken tabs, shows burn marks, or feels warm — stop and call an electrician. These are signs of underlying issues that a simple switch swap won't fix.

Cost Comparison

DIY cost:

- Voltage tester (one-time purchase): \$15-\$25
- Standard switch: \$3-\$8
- Dimmer switch: \$15-\$50
- Smart switch: \$30-\$60
- **Total: \$18-\$85**

Professional cost:

- Simple switch replacement: \$75-\$150 (includes materials)
- Dimmer installation: \$100-\$200
- Smart switch installation: \$125-\$250
- 3-way switch replacement: \$100-\$200
- Switch replacement on aluminum wiring: \$100-\$175 per switch

For a single standard switch, DIY saves \$50-\$100. But if you're replacing multiple switches throughout the house, an electrician can often bundle the work at a lower per-switch rate — ask for a package quote.

Common DIY Mistakes

Not testing for power: The #1 cause of DIY electrical shocks. Always use a voltage tester — never assume the breaker you turned off controls the switch you're working on. Mislabelled panels are extremely common in New Brunswick homes that have had circuits added over the decades.

Over-tightening terminal screws: Stripping the screw threads or breaking the wire by cranking too hard on the terminal screw. Tighten until snug — the screw should hold the wire firmly but you shouldn't be straining.

Nicking wire insulation: When stripping wires, cutting into the copper conductor weakens the wire. A nicked wire carrying 15 amps generates heat at the thin point and can eventually fail.

Reversing connections on a dimmer: Dimmers have specific "line" (power in) and "load" (power out) connections. Reversing them can damage the dimmer or create inconsistent operation. Follow the manufacturer's wiring diagram exactly.

Stuffing too much wire into the box: After connecting the new switch, you need to fold the wires back into the box before screwing the switch in place. Don't force or kink the wires — this damages insulation and creates future connection problems. If the wires won't fit comfortably, the box may be too small and needs replacement (which crosses into permit territory).

Bottom Line

A basic single-pole switch swap on modern copper wiring is safe DIY territory for a careful homeowner in New Brunswick. Anything involving aluminum wiring, multi-way switching, missing grounds or neutrals, knob and tube, or smart home integration is worth the \$100-\$200 for professional installation. The peace of mind and guaranteed code compliance is worth far more than the modest cost savings of DIY on complex switch work.

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What electrical work can I do myself versus what requires a licensed electrician in New Brunswick?

DIY vs. Licensed Electrician — What's Allowed in New Brunswick

New Brunswick is one of the more homeowner-friendly provinces for DIY electrical work — the law specifically allows homeowners to perform electrical work on their own primary residence. But there are important boundaries between what's safe and legal to DIY, what requires a permit even for DIY, and what should always be left to a licensed professional.

What You Can Do Yourself Without a Permit

These are considered **maintenance** activities — not new electrical work — and don't require a TSANB permit:

- **Replace light fixtures** (like-for-like swap on existing wiring)
- **Replace light switches** (single-pole, same type)
- **Replace dimmer switches** (same circuit, same box)
- **Replace electrical outlets** (same type — don't swap a 15A for a 20A without verifying the circuit)
- **Replace a doorbell transformer or button**
- **Install low-voltage landscape lighting** (the 12V portion only — the transformer connection to 120V may require a permit)
- **Replace a thermostat** (low-voltage, same type)
- **Change light bulbs** (obviously)
- **Reset breakers and GFCI outlets**
- **Test smoke and CO detectors, replace batteries**

Key rule: The replacement must be like-for-like. Swapping a toggle switch for another toggle switch is maintenance. Swapping a toggle switch for a smart switch that requires a neutral wire you don't have crosses into new work territory.

What You Can Do Yourself WITH a TSANB Permit

New Brunswick law allows homeowners to perform more extensive electrical work on their own primary residence, but a permit is required and the work must be inspected by TSANB:

- **Add new outlets or switches**

- **Run new circuits from the panel**
- **Install a ceiling fan** (new box, new wiring)
- **Add outdoor outlets or lighting**
- **Wire a detached garage, shed, or workshop**
- **Install baseboard heater circuits**
- **Add bathroom exhaust fan wiring**
- **Install recessed pot lights**
- **Run cable for EV charger outlet (240V)**
- **Replace a circuit breaker**
- **Upgrade individual circuits (14 AWG to 12 AWG)**

The permit process for homeowners:

- Contact TSANB (1-800-999-0336) and apply for a homeowner electrical permit
- Describe the work you plan to do
- Pay the permit fee (\$50-\$100 depending on scope)
- Do the work following the Canadian Electrical Code
- Call TSANB to schedule an inspection when work is complete
- Inspector visits, verifies compliance, issues certificate

Important limitations on homeowner permits:

- Work must be on your **own primary residence** — you cannot do electrical work on rental properties, investment properties, or someone else's home
- You must do the work **yourself** — you can't hire an unlicensed person and claim it's homeowner work
- The work must meet the **same code standards** as professionally installed work
- If the work fails inspection, you must correct it at your own expense (or hire a licensed electrician to fix it)

What Should ALWAYS Be Done by a Licensed Electrician

While technically legal for homeowners in some cases, these tasks carry significant safety risks that make professional installation strongly recommended:

Service upgrades (100A to 200A):

- Involves working near energized service entrance conductors that remain live even with the main breaker off
- Requires NB Power coordination for disconnect and reconnect

- Incorrect installation can cause panel fires, electrocution, or damage to your home's entire electrical system
- Cost to hire: \$2,500-\$4,500 — money well spent for this level of risk

Panel replacements:

- Same risks as service upgrades — live conductors, complex bus bar connections, proper torquing of all terminals
- A mistake here affects every circuit in your home
- Cost to hire: \$1,500-\$3,500

Aluminum wiring repairs or remediation:

- Aluminum branch circuit wiring (common in 1965-1978 New Brunswick homes) requires specific connectors (COPALUM or AlumiConn), anti-oxidant compound, and CO/ALR-rated devices
- Incorrect aluminum connections are a leading cause of residential electrical fires
- Cost to hire: \$3,000-\$6,000 for whole-home remediation

Knob and tube wiring work:

- The brittle insulation crumbles when disturbed, creating shock and fire hazards
- Splicing modern wire to K&T requires specific methods and approved junction boxes
- Cost to hire: Varies widely depending on scope

Hot tub or pool wiring:

- Requires specific bonding, GFCI protection, and underground cable routing
- Errors can create electrocution hazards in wet environments — the most dangerous type of electrical fault
- Cost to hire: \$800-\$2,500

Commercial or multi-unit residential:

- Homeowner permits don't cover commercial spaces, rental buildings with more than 2 units, or common areas
- Only licensed electricians can do this work in New Brunswick

The Insurance Consideration

Your New Brunswick home insurance covers DIY electrical work on your primary residence **if** it meets code requirements. However:

- If a fire or injury results from improperly done DIY electrical work, your insurer can deny the claim
- Having a TSANB inspection certificate proves the work was code-compliant — this is your protection

- Work done without a required permit is by definition non-compliant and may not be covered
- Some insurance policies specifically require licensed electrician work for major upgrades — check your policy

Cost Comparison: DIY vs. Professional

Task	DIY Cost (materials + permit)	Professional Cost
Add 1 outlet	\$30-\$60 + \$50 permit = \$80-\$110	\$150-\$300
Add 4 pot lights	\$100-\$250 + \$75 permit = \$175-\$325	\$600-\$1,200
Run circuit to garage	\$150-\$400 + \$75 permit = \$225-\$475	\$800-\$2,000
Install ceiling fan	\$20-\$60 + \$50 permit = \$70-\$110	\$200-\$400
Install 240V dryer outlet	\$80-\$175 + \$50 permit = \$130-\$225	\$350-\$775
Install EV charger outlet	\$100-\$250 + \$75 permit = \$175-\$325	\$800-\$2,000

DIY savings range from 40-70% on materials and labour, but you're investing your own time (typically 2-4x longer than a professional for the same task) and accepting the risk of inspection failure and rework.

When DIY Makes Sense

- You have basic electrical knowledge and comfort working with wiring
- The task is straightforward (adding outlets, running simple circuits)
- Your home has modern copper wiring in good condition
- You have the time to do the work carefully and correctly
- You're willing to get a permit and have the work inspected

When Hiring a Professional Makes Sense

- Any work involving the panel or service entrance
- Your home has aluminum wiring, knob and tube, or any wiring you're not 100% sure about
- The work involves 240V circuits or high-amperage loads
- You need the work done quickly and correctly the first time
- The cost difference is modest relative to the safety risk
- You're doing the work for resale (buyers prefer professionally completed electrical work)

Finding Licensed Electricians in New Brunswick

All electricians working in New Brunswick must be licensed through TSANB. Verify any electrician's licence before hiring by contacting TSANB at 1-800-999-0336. Get 3 quotes for any project over \$500, ask for references from similar projects, and confirm they carry liability insurance and WorkSafeNB coverage.

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Q17

Can I install my own light fixtures in New Brunswick without an electrician?

Installing Light Fixtures Yourself in New Brunswick — What's Allowed

New Brunswick is one of the more homeowner-friendly provinces when it comes to DIY electrical work. **Yes, you can legally install your own light fixtures in New Brunswick**, but there are important rules, limitations, and safety considerations you need to understand before picking up a screwdriver.

What New Brunswick Law Allows

Under New Brunswick's Electrical Installation and Inspection Act, homeowners are permitted to perform electrical work on their **own primary residence**. This includes:

- Replacing existing light fixtures (swapping one fixture for another)
- Installing new light fixtures in existing electrical boxes
- Replacing light switches and dimmer switches
- Replacing electrical outlets
- Installing low-voltage lighting (landscape lights, LED strip lights under 30V)

However, there are two critical requirements even for DIY work:

1. You must obtain an electrical permit from TSANB for anything beyond a like-for-like fixture swap. If you're adding a new light fixture where one didn't exist before, moving a fixture to a new location, or adding a new

circuit — you need a permit. The permit costs \$50-\$75 and includes a follow-up inspection.

2. All work must comply with the Canadian Electrical Code. Being a homeowner doesn't exempt you from code requirements. If a TSANB inspector finds code violations, you'll need to correct them at your own expense.

What You Can Do Without a Permit

Like-for-like fixture replacement — removing an existing light fixture and installing a new one in the same location, using the same wiring, with the same type of control (existing switch). This is considered maintenance, not new electrical work. Examples:

- Replacing a flush-mount ceiling light with a new flush-mount light
- Swapping a pendant light for a different pendant light
- Changing out a vanity light bar for a new one
- Replacing a standard switch with a dimmer switch (same wiring)

What Requires a Permit (Even for DIY)

- Adding a new light fixture where none existed before
- Installing a ceiling fan (different mounting requirements — see fan-rated box rules)
- Adding new circuits or extending existing ones
- Any work in a bathroom within 1 metre of a shower or tub (GFCI requirements)
- Installing recessed/pot lights (involves cutting ceiling openings and potentially adding circuits)
- Outdoor lighting installations (weatherproofing and GFCI requirements)

Step-by-Step: Safe DIY Light Fixture Replacement

Before you start:

- Turn off the circuit breaker controlling the fixture — **never rely on just the wall switch**
- Use a non-contact voltage tester (\$15-\$25 at any New Brunswick hardware store) to verify the power is off at the fixture
- Take a photo of the existing wiring connections before disconnecting anything

The replacement process:

- Remove the old fixture — typically 2-3 screws or nuts holding it to the mounting bracket

- Disconnect the wires — usually 3 connections: black (hot) to black, white (neutral) to white, and green or bare copper (ground) to the green screw or ground wire
- If the new fixture has a different mounting bracket, swap it out using the existing electrical box screws
- Connect the new fixture wires — match colours: black to black, white to white, ground to ground. Use wire connectors (Marrettes) rated for the wire gauge (typically 14 AWG for lighting circuits)
- Tuck wires neatly into the box, mount the fixture, and install bulbs
- Turn the breaker back on and test

Common Mistakes That Create Hazards

Overloading the electrical box: New fixtures with heavy bases or multiple bulbs may not fit properly in a shallow electrical box. Forcing wires into an overstuffed box damages connections and creates heat buildup. If the box is too small, it needs to be replaced — which moves into permit territory.

Wrong wire connections: Reversing hot and neutral (connecting the black fixture wire to the white house wire) creates a shock hazard at the socket even with the switch off. Always match wire colours.

Ignoring the ground wire: Older New Brunswick homes may not have a ground wire in the fixture box. If your new fixture has a ground wire but the box doesn't, you cannot simply cut it off. Install a GFCI breaker on that circuit (\$35-\$50) for protection, or have an electrician assess options.

Exceeding fixture weight limits: Standard electrical boxes are rated for fixtures up to 23 kg (50 lbs). Most light fixtures weigh 2-10 kg, so this is rarely an issue — but oversized chandeliers and ceiling fans require fan-rated boxes secured to framing.

When to Call a Professional

Hire a TSANB-licensed electrician if:

- You find aluminum wiring (silver-coloured wire common in 1960s-1970s NB homes) — this requires special connectors and techniques
- The existing wiring is knob and tube (ceramic insulators, cloth-covered wire)
- You see scorching, melted wire insulation, or smell burning when the fixture is on
- The electrical box is loose, cracked, or not secured to framing
- You're not confident identifying hot, neutral, and ground wires
- The fixture location requires cutting new openings in the ceiling

Electrician rates in New Brunswick for a simple fixture installation are typically **\$100-\$200 per fixture**, which includes ensuring all connections are code-compliant. For a home with older wiring, the peace of mind is worth the cost.

Insurance Considerations

Your home insurance in New Brunswick covers electrical work done by homeowners on their own residence, **provided** the work meets code requirements. If a fire is traced to improper DIY wiring, your insurer could deny the claim. This is another reason to pull permits for any work beyond basic fixture swaps — the TSANB inspection certificate proves the work was done correctly.

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Q18

Can I do my own electrical wiring for a shed or barn in rural New Brunswick?

DIY Electrical Wiring for Sheds and Barns in Rural New Brunswick

This is one of the most common questions electricians in rural New Brunswick hear, and the answer is more nuanced than a simple yes or no. New Brunswick electrical regulations apply to outbuildings just as they do to your main house, and the consequences of getting it wrong range from failed inspections to barn fires.

What the Law Actually Says

Under New Brunswick's Electrical Installation and Inspection Act, all electrical installations must comply with the Canadian Electrical Code (CEC) as adopted by the province. The Technical Safety Authority of New Brunswick (TSANB) oversees permits and inspections. Homeowners in New Brunswick CAN perform electrical work on their

own property — including outbuildings — but the work still requires a permit and must pass a TSANB inspection.

This means you can legally wire your own shed, but you cannot skip the permit (\$75-\$200 depending on scope) or the inspection. If the work does not meet code, the inspector will require you to fix it before energizing the circuit.

When DIY Makes Sense

A small garden shed (under 100 sq ft) that needs a single 15A circuit for lights and a couple outlets is a reasonable DIY project if you have basic electrical knowledge. The wiring is straightforward: one circuit from your main panel, through conduit or direct burial cable to the shed, feeding a small sub-panel or junction box inside. Total materials cost runs \$200-\$400 for NMD90 cable, a small panel, outlets, and lights.

When You Need a Licensed Electrician

Barns and larger workshops are a different situation entirely. Here is why:

- **240V circuits** — If you need welders, grain dryers, large compressors, or heating, you need 240V circuits which carry higher risk and more complex wiring requirements
- **Agricultural classifications** — The CEC has specific rules for agricultural buildings (Section 22) that address dust, moisture, corrosive environments, and livestock areas. These rules differ significantly from residential wiring
- **Distance from panel** — Running power 50-200 metres to a remote barn requires voltage drop calculations. At 100 metres on a 20A circuit, you may need to upsize from 12 AWG to 8 AWG copper or larger to keep voltage drop under the 5% CEC maximum
- **Underground feed** — Direct burial cable (NMWU) must be buried at least 600mm (24 inches) deep, or 450mm under a concrete slab. Conduit installations have different depth requirements. In rural NB, rocky soil and high water tables near river valleys (Miramichi, Saint John River) can make trenching complex
- **Three-phase power** — Some agricultural operations in rural NB run on three-phase NB Power service. Wiring three-phase is not a DIY job under any circumstances

Cost Comparison

DIY wiring for a small shed: \$200-\$400 in materials plus \$75-\$200 for the TSANB permit and inspection. A licensed electrician would charge \$800-\$1,500 total for the same job.

For a barn or large workshop: Materials alone run \$1,500-\$4,000 depending on distance and service size. A licensed electrician charges \$3,000-\$8,000 for a full barn electrical installation including underground feed, sub-panel, lighting, and outlets. The professional route includes the engineer-stamped drawings sometimes required for agricultural buildings over a certain amperage.

Insurance and Liability

This is the real issue for rural NB property owners. If you wire your barn yourself and it burns down, your property insurance company will investigate. If the electrical work was not permitted and inspected by TSANB, your claim can be denied — and barn fires in New Brunswick cause losses averaging \$100,000-\$500,000. Even if you do obtain a permit, DIY work that passes initial inspection but fails later due to poor workmanship may still create liability issues.

The Smart Approach

For a basic shed: Do the work yourself, pull the permit, and have TSANB inspect it. Use this as a learning project.

For a barn, workshop, or any building with 240V or agricultural use: Hire a TSANB licensed electrician. Get 3 quotes from electricians experienced with agricultural buildings — not all residential electricians are comfortable with CEC Section 22 requirements. Ask specifically about their experience with farm electrical in your area of New Brunswick.

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Can I finish my basement electrical myself or do I need a licensed electrician in New Brunswick?

In New Brunswick, you cannot legally do your own basement electrical work beyond the most basic tasks like replacing an existing outlet or light switch. Any new circuits, new outlets, new lighting fixtures on new circuits, or panel modifications require a TSANB permit — and TSANB permits can only be pulled by licensed electrical contractors.

This is a common question from homeowners looking to save money on a basement finish, and it's understandable — electrical work is one of the most expensive trades in a basement renovation. But New Brunswick's regulations are clear: the Canadian Electrical Code as enforced by TSANB requires that all new electrical installations be performed by a licensed electrician.

What you CAN do yourself in your New Brunswick basement: replace existing outlets and switches with new ones (same type, same location), replace existing light fixtures (same circuit, same location), install low-voltage wiring like ethernet cables, coax, and speaker wire, and paint around electrical boxes after the electrician has finished. Basically, if it doesn't involve opening the panel, running new wire, or creating new connection points, you can handle it.

What requires a licensed electrician includes all the heavy lifting of a basement finish: running new circuits from the panel, installing new outlets (code requires outlets every 12 feet along walls plus near any countertops), installing pot lights or other ceiling fixtures on new circuits, wiring bathroom exhaust fans, installing GFCI outlets in the bathroom and any unfinished utility areas, installing AFCI-protected circuits for bedroom and living areas (required by current code), and any 240V connections for a basement bathroom heater or sauna.

The cost for basement electrical in New Brunswick typically ranges from \$3,000 to \$8,000 depending on the size of the space and the number of circuits, outlets, and fixtures. A typical 800 square foot basement finish might need 4 to 6 new circuits, 15 to 25 outlets, 8 to 15 pot lights, bathroom fan and GFCI outlets, and smoke/CO detectors — which runs around \$4,000 to \$6,000 for the electrical portion.

Here's a money-saving tip that's perfectly legal. You can do all the non-electrical work yourself (framing, insulation, vapour barrier, drywall) and hire the electrician to come in at the right stage. The electrician does the rough-in after framing but before drywall, then comes back for the finish work (installing outlets, switches, fixtures) after drywall is complete. This way you're only paying the electrician for electrical work, not waiting around while you frame walls.

A TSANB inspection is required before drywall goes up (rough-in inspection) and again after everything is finished (final inspection). Your electrician will coordinate both inspections.

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