

NEW BRUNSWICK ELECTRICAL

Outlets & Switches

GFCI, AFCI, outlets, switches, and receptacles

17 Expert Answers from Electric IQ

newbrunswickelectrical.com/construction-brain

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Q1

One outlet is dead in my room — what now?

Start by checking if the circuit breaker has tripped or if there's a GFCI outlet that needs resetting. This is often the simplest fix and something you can safely check yourself.

First, locate your electrical panel and look for any breakers that are in the middle position or switched to "OFF." A tripped breaker won't be fully in the ON position. If you find one, switch it fully OFF first, then back to ON. You should hear a click when it properly engages.

Next, check for **GFCI outlets** in your room or nearby areas like bathrooms, kitchens, or garages. These outlets have "TEST" and "RESET" buttons and can control other outlets downstream. If the RESET button is popped out, press it firmly until it clicks. GFCI outlets can trip from power surges, moisture, or electrical faults and may control outlets in other rooms.

If the breaker and GFCI checks don't solve the problem, you're likely dealing with a **loose connection, damaged outlet, or wiring issue**. These problems require a licensed electrician in New Brunswick. Loose connections can create heat and fire hazards, while damaged wiring can be dangerous to troubleshoot without proper equipment.

Don't attempt to remove the outlet or test wiring yourself — this requires working with potentially live circuits and violates TSANB safety requirements. A licensed electrician can safely diagnose whether it's a simple outlet replacement (\$75-\$150) or a more complex wiring issue.

Safety warning: If you notice any burning smells, scorch marks around the outlet, or if the outlet feels warm, don't use it and call an electrician immediately. These are signs of dangerous electrical faults that can cause fires.

If the outlet has been working fine and suddenly stopped, it's usually a quick fix for a professional. However, if it's an older home with original wiring, this could indicate broader electrical issues that need attention.

Need help finding a licensed electrician to diagnose the problem? New Brunswick Electrical can match you with local professionals who can safely identify and fix the issue.

Q2

Best way to childproof outlets with toddlers?

Tamper-resistant receptacles (TRRs) are the gold standard for childproofing outlets - they're built into the outlet itself and provide permanent protection without removable parts that toddlers can lose or choke on.

Traditional plastic outlet plugs seem like an obvious solution, but they actually create new hazards. Toddlers can pull them out (often putting them in their mouths), and parents frequently forget to replace them after unplugging something. The plugs can also damage the outlet's internal contacts over time, creating loose connections that generate heat.

Tamper-resistant receptacles work by requiring equal pressure on both slots simultaneously - something a standard plug does naturally, but a curious finger or paperclip cannot. They've been required by the Canadian Electrical Code in all new construction since 2009, but many older New Brunswick homes still have standard outlets. The internal spring-loaded shutters are virtually invisible and don't interfere with normal use, but they effectively block foreign objects.

For immediate protection while planning an upgrade, **sliding outlet covers** are a better temporary solution than plug-in caps. These covers slide closed automatically when you unplug something, so there's no small part to lose or forget to replace. They mount over your existing outlet and work with most standard plugs.

GFCI outlets in kitchens and bathrooms provide an additional layer of safety beyond just tamper-resistance. In New Brunswick, TSANB requires GFCI protection within 1.5 meters of sinks, but upgrading other outlets to GFCI provides extra protection against electrical shock if a determined toddler does manage to insert something conductive.

Installing tamper-resistant receptacles requires an electrical permit in New Brunswick since you're replacing the actual outlet device. A licensed electrician can typically replace 10-15 outlets in a few hours, and the cost runs about \$15-25 per outlet plus labor. Many parents find it worthwhile to upgrade the main living areas, playrooms, and bedrooms where toddlers spend the most time.

Safety reminder: Never attempt outlet replacement yourself with toddlers in the home. Even with the breaker off, there's risk of mixing up circuits or creating loose connections. A licensed electrician ensures the job is done safely and meets TSANB requirements.

For outlets that rarely get used (like those behind furniture), simple outlet plugs can work as a temporary measure, but supervise their use and replace them with permanent tamper-resistant outlets when possible. The peace of mind knowing your outlets are permanently childproofed is worth the investment.

Need help finding an electrician to upgrade your outlets? New Brunswick Electrical can match you with local professionals who specialize in family safety upgrades.

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Q3

Can I make a switched outlet always-on?

Yes, you can convert a switched outlet to always-on, but it requires rewiring the circuit and may need a TSANB permit depending on the scope of work.

Most switched outlets in New Brunswick homes have the top half controlled by a wall switch while the bottom half remains always-on. To make the entire outlet always-on, an electrician needs to disconnect the switch leg wire and connect it directly to the hot wire in the outlet box. This eliminates the switch control entirely.

The process involves removing the outlet, identifying which wire comes from the switch (usually marked with tape or a different color), and connecting it to the constant hot wire with a wire nut. The switch can then be removed and the wall patched, or converted to control something else like overhead lighting. This work must be done with the circuit breaker turned off.

TSANB permit requirements depend on the specific work. Simply rewiring an existing outlet to bypass the switch typically doesn't require a permit since you're not adding new circuits or outlets. However, if you're adding new wiring runs or relocating outlets, a permit would be required. When in doubt, your electrician can confirm with TSANB at 1-800-999-0813.

Safety considerations are critical here. Working with electrical wiring can be deadly if done incorrectly. The circuit must be properly de-energized, and all connections must be secure and code-compliant. Loose connections can cause arcing, overheating, and house fires. Additionally, some older New Brunswick homes have knob and tube or aluminum wiring that requires special handling techniques.

Cost for this modification typically runs \$150-\$300 in the New Brunswick market, depending on accessibility and whether any drywall repair is needed. If multiple outlets need conversion or if there are complications with older wiring systems, costs can increase.

The most common reason homeowners want this change is to plug in appliances or electronics that need constant power, like WiFi routers, cable boxes, or phone chargers. Just remember that once converted, you'll lose the convenience of switch control for lamps or other devices you might want to turn on and off from across the room.

Need help finding an electrician for this modification? New Brunswick Electrical can match you with local licensed professionals who can handle this safely and to code.

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How do I replace a two-prong outlet with a three-prong grounded outlet in NB?

Replacing two-prong outlets requires a licensed electrician in New Brunswick — and the approach depends on whether your existing wiring has a ground wire or not.

First, check what you're working with:

Open the outlet box (power OFF at the breaker first) and look at the wires:

- **If there's a bare copper or green wire** (ground wire): You have grounded wiring. A licensed electrician can install standard three-prong grounded outlets. Straightforward job.
- **If there are only two wires** (black and white, no ground): Your wiring is ungrounded. This is common in NB homes built before the early 1970s. You have three options:

Option 1: Install GFCI outlets (most common solution)

- A GFCI outlet can legally be installed on an ungrounded circuit under the CEC
- The GFCI provides personal shock protection even without a ground wire
- Must be labelled "No Equipment Ground" (stickers come with the GFCI outlet)
- Three-prong devices will plug in and have shock protection
- **However:** Surge protectors and some electronics don't work properly without a true ground
- Cost: \$80-\$150 per outlet installed

Option 2: Run new ground wires to existing outlets

- An electrician runs a ground wire from each outlet back to the panel's ground bus
- CEC allows retrofitting a ground wire alone (doesn't require replacing the entire circuit)
- The ground wire can take a different path than the existing circuit wires
- More expensive but provides true grounding for all devices
- Cost: \$200-\$400 per outlet depending on accessibility

Option 3: Full rewire of affected circuits

- Replace the old 2-wire cable with modern NMD90 3-wire cable (hot, neutral, ground)
- Most expensive but provides the best long-term solution
- Makes sense if the existing wire is in poor condition or you're renovating anyway
- Cost: \$300-\$600 per circuit

Why this matters:

- Three-prong outlets on ungrounded wiring without GFCI protection is a **code violation** and potentially dangerous — it gives a false sense of safety
- Computers, TVs, and other electronics with three-prong plugs rely on grounding for surge protection
- Home inspectors in NB flag ungrounded three-prong outlets as a deficiency

NB-specific notes:

- Many 1950s-1970s NB homes have a mix of grounded and ungrounded circuits — sometimes the kitchen and bathroom were upgraded but bedrooms weren't
- If your home still has a fuse panel, combining the outlet upgrade with a panel upgrade is more cost-effective
- TSANB permit required for any wiring changes beyond like-for-like replacement

Your next step: Have a licensed electrician assess your home's grounding situation. They can test every outlet and recommend the most cost-effective approach — often a combination of GFCI replacement for convenience outlets and ground wire retrofitting for circuits serving electronics.

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Q5

What are tamper-resistant outlets and are they required in New Brunswick?

Yes — tamper-resistant (TR) outlets are required by the Canadian Electrical Code for ALL new or replacement receptacle installations in dwelling units, including in New Brunswick.

What tamper-resistant outlets are:

TR outlets have spring-loaded shutters behind the slot openings that only open when equal pressure is applied to both slots simultaneously — like inserting a plug. A child poking a key, paperclip, or finger into one slot won't open the shutters because pressure is only on one side.

They look identical to standard outlets except for the letters "TR" stamped on the face and the slightly stiffer feel when inserting a plug (the springs add resistance that quickly becomes unnoticeable).

CEC requirements:

The Canadian Electrical Code (adopted in NB) requires TR receptacles in:

- **All 15-amp and 20-amp, 125-volt receptacles** in dwelling units
- This covers essentially every standard outlet in your home
- Required for all new installations and when replacing existing outlets

Exceptions where TR is NOT required:

- Receptacles more than 1.7 metres (5.5 feet) above the floor (out of child reach)
- Receptacles behind appliances that are not easily moved (behind a refrigerator or stove)
- Dedicated receptacles for specific appliances (like a sump pump or garage door opener) in locations not readily accessible

Cost:

- TR outlets cost \$3-\$5 each — barely more than standard outlets (\$2-\$3)
- No visual difference to standard outlets
- Available at every hardware store in NB (Home Depot, Kent Building Supplies, Home Hardware)

Common questions from NB homeowners:

"Do I need to replace all my existing outlets with TR?" Not proactively — but whenever an outlet is replaced for any reason, the replacement must be TR. If you're selling your home, an inspector may note non-TR outlets but they aren't required to be retroactively upgraded in existing installations.

"They're hard to plug into — is that normal?" New TR outlets feel stiff for the first few insertions. The springs break in after 10-20 plug cycles. If they remain extremely difficult to use, the outlet may be defective — replace it.

"Are they as safe as outlet covers?" Significantly safer. Plastic outlet covers can be removed by children, are choking hazards when removed, and require remembering to replace them after every use. TR outlets are always protected, always in place, and don't require any action from adults.

"My electrician installed regular outlets — is that a code violation?" If the installation was recent (post-2015 CEC adoption in NB), yes. This should be flagged on the TSANB inspection. If the work wasn't inspected, that's a separate concern.

Installation: Like-for-like outlet replacement (standard to TR in the same box) is a simple swap. In New Brunswick, all electrical work legally requires a licensed electrician. However, when combined with other electrical work during a renovation, adding TR outlets to the project is minimal additional cost.

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Q6

How do I add USB charging outlets to my home in New Brunswick?

USB outlets — receptacles with built-in USB charging ports alongside standard electrical sockets — are one of the easiest and most satisfying electrical upgrades for any New Brunswick home. They eliminate the clutter of charging adapters and make every outlet a convenient charging station.

Types of USB Outlets Available

USB-A Outlets (Standard USB)

The original USB outlet type with the familiar rectangular USB-A port:

- **Output:** Typically 2.4A per port (some older models only 1A — avoid these)
- **Best for:** Older devices, basic charging
- **Price:** **\$15–\$25 each** at Kent Building Supplies, Home Hardware, Canadian Tire

- **Status:** Being phased out in favour of USB-C

USB-C Outlets (Current Standard)

USB-C ports deliver faster charging and are compatible with nearly all modern devices:

- **Output:** Up to 15W (3A at 5V) standard, some models offer **Power Delivery (PD)** up to 30W for fast charging phones and even charging laptops
- **Best for:** Modern smartphones (iPhone 15+, Samsung Galaxy, Pixel), tablets, wireless earbuds
- **Price: \$20–\$35 each**
- **Recommendation:** Buy USB-C outlets, not USB-A. All new devices use USB-C, and the price difference is minimal

Combo Outlets (USB-A + USB-C)

Dual-format outlets with both USB-A and USB-C ports:

- Typically **2 standard AC sockets + 1 USB-A + 1 USB-C**
- Good transition choice if your household has a mix of older and newer devices
- **Price: \$20–\$30 each**
- Most popular option currently

High-Power USB-C PD Outlets

Premium outlets with USB-C Power Delivery capable of **30W or more**:

- Can charge laptops, tablets, and phones at maximum speed
- Typically have **1 USB-C PD port + 1 USB-A port + 2 AC sockets**
- **Price: \$35–\$55 each**
- Worth the premium for home office and bedside locations where you charge laptops

Recommended Products

| Product | Ports | Output | Price | Available | |-----|-----|-----|-----|-----| | Leviton T5833 | 2 AC + 1 USB-C + 1 USB-A | 30W USB-C PD | \$35–\$45 | Home Hardware, electrical supply | | Legrand USB-C | 2 AC + 2 USB-C | 15W per port | \$25–\$35 | Home Hardware | | Eaton USB Combo | 2 AC + 1 USB-C + 1 USB-A | 24W total | \$20–\$30 | Kent, Home Hardware | | TP-Link Kasa KP115 | 2 AC + 2 USB | Smart/Wi-Fi controlled | \$30–\$40 | Amazon.ca | | Generic CSA-certified combo | 2 AC + 1 USB-C + 1 USB-A | 15W USB-C | \$15–\$25 | Canadian Tire, Amazon.ca |

Critical: Only buy outlets with **CSA certification** or **cUL listing**. Uncertified USB outlets from overseas sellers may not meet Canadian safety standards and can overheat, catch fire, or damage connected devices. Look for the CSA or cUL mark on the device itself, not just the packaging.

Installation: DIY or Electrician?

DIY Installation (No Permit Required)

Replacing an existing standard outlet with a USB outlet is a **like-for-like device swap** — same box, same wiring, same circuit. No TSANB permit is needed.

What you need:

- Non-contact voltage tester (**\$15–\$25** — essential safety tool)
- Flat and Phillips screwdrivers
- The new USB outlet
- Possibly new wire nuts (the USB outlet may be bulkier, requiring longer wire tails)

Step-by-step:

- **Turn off the breaker** for the circuit at the panel
- **Verify power is off** with the voltage tester at the outlet
- **Remove the cover plate** and unscrew the old outlet from the box
- **Note the wire connections:** Black (hot) to brass screw, white (neutral) to silver screw, bare copper (ground) to green screw. Photograph before disconnecting.
- **Disconnect wires** from the old outlet
- **Connect wires to the new USB outlet** using the same terminal assignments
- **Carefully fold wires** and push the outlet into the box. USB outlets are **physically deeper** than standard outlets — this is the most common challenge. If the box is shallow (old metal boxes in pre-1970s NB homes), you may need to:
 - Use the outlet's screw terminals instead of back-stab connections (saves space) - Trim wire tails slightly shorter (leave at least 6 inches per CEC) - If the box is genuinely too shallow, a box extender (**\$2–\$5**) adds depth
- **Secure the outlet**, install the cover plate, restore power
- **Test:** Plug in a device to verify USB charging works

Time: 15–20 minutes per outlet once you've done one.

Electrician Installation

Hire an electrician if:

- You're not comfortable working with electrical wiring
- The existing box is too small or damaged
- You want to add USB outlets where no outlet currently exists (new circuit — TSANB permit required)
- Your home has **aluminum wiring** (requires special AL/CU connectors)

Cost: \$30–\$50 per outlet for labour (you supply the outlets), or **\$50–\$80 per outlet** if the electrician supplies them. Most electricians charge a **minimum service call of \$100–\$150**, so batch multiple outlets into one visit.

Where to Install USB Outlets (Priority Locations)

Highest value:

- **Bedside tables** — nightstand charging for phones, watches, tablets. Both sides of the bed in the master bedroom.
- **Kitchen counter** — charging phones while cooking, powering kitchen tablets/displays
- **Home office desk** — laptop, phone, tablet, wireless earbuds charging
- **Living room end tables** — convenient charging while relaxing
- **Entryway/mudroom** — charge phones when you walk in the door

Good value:

- **Bathroom vanity** — electric toothbrush, shaver, phone charging (must remain GFCI-protected — use a USB outlet with GFCI, or ensure it's downstream of a GFCI)
- **Kids' rooms** — tablet and device charging
- **Guest room** — visitors always appreciate available USB charging

Usually not needed:

- Outlets behind furniture or appliances (refrigerator, washer/dryer)
- Garage outlets (tool circuits, not charging locations)
- Outdoor outlets

GFCI Considerations

In locations that require GFCI protection (bathrooms, kitchens within 1.5m of a sink, outdoors, garages), you have two options:

USB outlet + GFCI breaker in panel: Use a standard USB outlet and protect the circuit with a GFCI breaker. Cost: **\$40–\$60** for the GFCI breaker.

GFCI + USB combo outlet: Some manufacturers make outlets that combine GFCI protection with USB ports in one device. These are bulkier and more expensive (**\$35–\$50**) but provide integrated protection.

Standard USB outlet downstream of GFCI: If the circuit already has a GFCI outlet (first outlet on the circuit), any standard USB outlet downstream is GFCI-protected. This is the most common and economical approach.

Technical Notes

Circuit loading: USB ports add a small load to the circuit (5–30W depending on the outlet and how many devices are charging). This is negligible on a 15-amp (1,800W) or 20-amp (2,400W) circuit. You won't need circuit upgrades for USB outlets.

Box depth: USB outlets are **25–35mm deeper** than standard outlets because they contain a transformer and charging circuitry. Standard modern plastic boxes (3 inches deep) accommodate them easily. Old shallow metal boxes (2 inches deep, common in pre-1970s NB homes) may be too tight — use a box extender or have an electrician install a deeper box.

Heat: USB outlets generate slight warmth during charging (the internal transformer converts 120V AC to 5V DC). This is normal. The outlet should feel **slightly warm, never hot**. If an outlet feels hot, unplug devices and replace the outlet — the internal components may be failing.

Cost for a Typical NB Home Upgrade

| Scope | DIY Cost | Electrician Installed | |-----|-----|-----| | 4 USB outlets (bedside + kitchen) | \$80–\$140 | \$200–\$350 | | 8 USB outlets (bedrooms + kitchen + office + living room) | \$160–\$280 | \$400–\$650 | | 12 USB outlets (whole house) | \$240–\$420 | \$550–\$900 |

For most New Brunswick homeowners, **4–8 strategically placed USB outlets** at **\$80–\$350** is the sweet spot — it covers the locations where you actually charge devices without overdoing it.

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Can I install a ceiling fan where a light fixture currently is in my New Brunswick home?

Yes, you can install a ceiling fan where an existing light fixture is — it's one of the most popular home improvement projects — but the electrical box that supports the fixture must be rated for the weight and vibration of a fan. This is the critical safety consideration that many homeowners overlook.

The Electrical Box: The Most Important Factor

A standard light fixture weighs **1–5 kg (2–10 lbs)**. A ceiling fan weighs **7–25 kg (15–55 lbs)** and generates continuous rotational force and vibration. A box rated for a light fixture is **NOT rated for a ceiling fan** — even if the fan's weight seems modest.

How to Check Your Existing Box

- Turn off the breaker controlling the fixture
- Remove the existing light fixture
- Look inside the electrical box for markings:
 - "**Suitable for Fan Support**" or "**For Fan Support**" — you're good to go - "**Maximum weight: 35 lbs**" (or **similar**) — check your fan's weight; if it's under this rating and the box specifically mentions fan support, it's acceptable - **No fan rating mentioned** — the box is NOT rated for a fan and must be replaced

Types of Fan-Rated Boxes

Pancake box (shallow): A flat metal box that attaches directly to a ceiling joist with heavy-duty screws. Best when the joist is accessible and you want a low-profile mount. These are only suitable for fans that mount flush to the ceiling (no downrod or a very short downrod).

Brace-mount box: A metal bar that spans between two ceiling joists, with the box hanging from the centre. This is the most versatile option because it allows the fan to be centred in the room regardless of joist location. **Retrofit brace kits** are available that install through the existing hole without attic access — the brace telescopes out and grips the joists from below. Cost: **\$20–\$40** for the brace kit.

Old-work fan-rated box: A remodelling box with strong mounting wings designed for fan support. These grip the drywall and a joist. Suitable for lighter fans (under 35 lbs).

Do You Need an Electrician?

You can DIY if:

- The existing box is already fan-rated (just swap the fixture for the fan)
- You're comfortable replacing an electrical box (requires basic tools and confidence working overhead with wire connections)
- The existing wiring supports the fan (see wiring section below)

You need an electrician if:

- The existing box must be replaced and you're not comfortable doing it
- You want a separate wall switch for the fan and the light (requires running a new wire — see below)
- Your home has aluminum wiring or knob-and-tube wiring
- The ceiling is vaulted or cathedral and access is limited
- You want to add a fan where no fixture currently exists

Electrician cost for ceiling fan installation: \$100–\$300 (labour only, you supply the fan), or **\$150–\$400** if the box needs to be replaced.

Wiring Considerations

Standard Setup (Most Common in NB Homes)

Most NB ceiling light fixtures are controlled by a single wall switch and have **3 wires** in the box:

- Black (hot — switched)
- White (neutral)
- Bare copper or green (ground)

This standard 2-wire-plus-ground setup can power a ceiling fan with a light kit, but **both the fan and light will be controlled by the single wall switch**. To independently control fan speed and light brightness, you'll use:

- **Pull chains** on the fan (one for the fan motor, one for the light)
- A **remote control kit** (included with many modern fans — adds a receiver inside the fan canopy and a handheld or wall-mounted remote) — no rewiring needed
- A **smart fan switch** like the Lutron Caseta fan controller (replaces the wall switch, provides independent fan speed and light control from a single switch location)

Upgraded Setup (Separate Wall Switches)

If you want separate wall switches for the fan and the light (two switches side by side on the wall), the wiring must include a **4-wire cable** (3 conductors plus ground) between the switch and the fan:

- Black (hot to fan motor)
- Red (hot to light kit)
- White (neutral)
- Bare copper (ground)

Many NB homes only have 3-wire cable to the ceiling box. Running a new 4-wire cable from the switch to the ceiling box requires opening the wall and possibly the ceiling — a job for an electrician. Cost: **\$200–\$500** depending on accessibility.

Alternative without rewiring: A fan-speed remote control or smart switch gives you independent control without the expense of running new wire. This is the approach most NB homeowners choose.

Ceiling Height Requirements

The Canadian Electrical Code and ceiling fan manufacturers specify minimum clearances:

- **Fan blades must be at least 2.1 metres (7 feet) above the floor** — this is a CEC safety requirement
- For standard 8-foot ceilings (common in NB homes): use a **flush-mount or hugger fan** (mounts directly to the ceiling with no downrod)
- For 9-foot ceilings: a **short downrod (3–6 inches)** works well and improves airflow
- For 10+ foot ceilings (vaulted, cathedral): use a **longer downrod** to bring the fan down to effective airflow height
- For **7-foot ceilings** (common in NB basements): a standard ceiling fan **will not meet the 2.1m clearance requirement**. Consider a low-profile fan specifically designed for low ceilings, or use a wall-mounted fan or floor fan instead.

Fan Size Guide

| Room Size | Fan Blade Span | Common Rooms | |-----|-----|-----| | Up to 75 sq ft | 29–36 inches | Small bedroom, office | | 75–150 sq ft | 36–42 inches | Medium bedroom, kitchen | | 150–300 sq ft | 44–52 inches | Living room, master bedroom | | 300–400 sq ft | 52–60 inches | Large living room, great room | | 400+ sq ft | 60–72 inches (or two fans) | Open concept, large basement |

NB-Specific Benefits

Summer cooling: Ceiling fans create a **wind chill effect of 3–4°C**, reducing or eliminating the need for air conditioning. In New Brunswick's relatively short but warm summers (July and August), a few ceiling fans can keep your home comfortable without the \$300–\$600/season cost of running window AC units.

Winter heat redistribution: Running a ceiling fan in **reverse (clockwise on low speed)** pushes warm air that collects at the ceiling back down. This is particularly valuable in NB homes with electric baseboard heat, where heat stratifies dramatically in rooms with 8+ foot ceilings. Some homeowners report **5–10% heating savings** from running ceiling fans in reverse during winter — meaningful when NB Power bills are at their peak.

Energy cost: A ceiling fan running on medium speed uses approximately **50–75 watts** — about \$0.01/hour at NB Power rates. Running a fan for 12 hours a day costs roughly **\$3–\$4 per month**. Compare this to a window AC unit that uses 500–1,500 watts (\$0.07–\$0.22/hour).

TSANB Permit

Simple fan installation (existing box is fan-rated, no new wiring): No TSANB permit required — this is considered a fixture replacement.

New wiring involved (new switch leg, new circuit, box replacement involving wiring changes): TSANB permit required. Cost: **\$75–\$150**.

Cost Summary

| Scenario | Cost | |-----|-----| | DIY install, existing fan-rated box | \$0 (just the fan: \$100–\$500) | | DIY install + retrofit brace kit | \$20–\$40 + fan | | Electrician install, box is fan-rated | \$100–\$200 + fan | | Electrician install, box replacement needed | \$150–\$350 + fan | | Electrician install + new 4-wire switch run | \$350–\$600 + fan |

Ceiling fans range from **\$50 for a basic builder-grade fan** to **\$500+ for a premium quiet DC-motor fan** with integrated LED and remote. Mid-range fans (**\$150–\$300**) from brands like Hunter, Hampton Bay, or Fanimation offer the best balance of quality and value, available at Kent Building Supplies, Home Depot, and Amazon.ca.

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Q8

Can I add an electrical outlet to my kitchen island in New Brunswick and what are the code requirements?

Yes, you can add outlets to a kitchen island — and in fact, the Canadian Electrical Code (CEC) **requires** them on islands and peninsulas that meet certain size thresholds. Whether you're renovating an older home in Moncton's North End or building new in Riverview, here's what you need to know about island outlet requirements, installation methods, and costs.

CEC Requirements for Kitchen Island Outlets

The Canadian Electrical Code has specific rules for kitchen island and peninsula receptacles:

Islands with a countertop longer than 600mm (24 inches) and wider than 300mm (12 inches) must have at least one receptacle outlet. For larger islands — which are the norm in modern New Brunswick kitchens — the general rule of receptacles within **900mm (36 inches)** of any point along the countertop edge applies, similar to standard counter requirements.

In practical terms:

- A **small island** (2–3 feet long): minimum 1 outlet
- A **medium island** (4–6 feet long): minimum 2 outlets
- A **large island** (7+ feet long): 2–3 outlets

Circuit requirements:

- Kitchen countertop outlets must be on **dedicated 20-amp small appliance branch circuits** (not shared with lighting or other rooms)
- The CEC requires a minimum of **two 20-amp small appliance circuits** serving kitchen countertop areas
- Island outlets can share one of these circuits with other counter outlets, or be on their own dedicated circuit
- All kitchen countertop outlets must be **GFCI-protected** — either via GFCI breaker in the panel or GFCI receptacle feeding downstream outlets
- **Tamper-resistant receptacles** are required in all new installations per current CEC

Installation Methods

Getting power to a kitchen island is the main challenge since the island sits in the middle of the floor with no adjacent walls. There are several approaches:

Through the Floor (Most Common)

This is the standard method for islands:

- Power is run from the panel (or an existing kitchen circuit) down to the basement or crawlspace
- Cable runs under the floor to the island location
- Cable comes up through the floor inside the island cabinet
- Outlet is installed in the island end panel or in a pop-up receptacle in the countertop

Advantages: Clean installation, no visible wiring, easy access for future service **Requirements:** Access to the space below the kitchen floor (basement, crawlspace, or open joist bay) **Cost: \$300–\$600** for one outlet, **\$500–\$900** for two outlets (including circuit from panel)

Pop-Up Counter Receptacles

Pop-up outlets sit flush with the countertop surface and pop up when needed:

- Sleek, modern appearance — invisible when not in use
- Available in 2-outlet or 4-outlet configurations, often with USB charging ports
- Require a rectangular cutout in the countertop (typically 4×8 inches)
- More expensive than standard outlets: **\$80–\$250** per unit plus installation
- Waterproof when retracted — important for island countertops where spills are common

Side-Mount (Island End Panel)

The most economical approach — a standard duplex outlet is installed in the **end panel** of the island cabinetry, just below the countertop overhang:

- Uses a standard receptacle box mounted in the cabinet end panel
- Covered by a standard or decorator wall plate
- Less visually intrusive than a wall outlet because it's below the counter overhang
- Can also be installed in the **back panel** (side facing away from the cook) to keep outlets accessible but not front-and-centre

Pendant/Drop from Ceiling

Rarely used in residential but worth mentioning — power drops from the ceiling to a receptacle mounted on a post or hanging assembly above the island. This is more common in commercial kitchens and generally not aesthetically suitable for home kitchens in New Brunswick.

Existing Home vs. New Construction

New construction: Island outlets are planned from the start. The electrician stubs up wiring through the floor during the rough-in phase, before cabinets and flooring are installed. This is the easiest and cheapest scenario. Cost: **\$150–\$300** per outlet as part of the overall kitchen wiring.

Existing home renovation: Adding outlets to an existing island is more involved:

- **Access from below:** If you have an unfinished basement directly under the kitchen, running a new circuit is straightforward — the electrician accesses the joist bay from below, drills up into the island cabinet cavity, and runs cable. Cost: **\$300–\$600**.
- **Finished basement below:** If the ceiling below is finished (drywall), the electrician needs to either:
 - Cut access holes in the basement ceiling to fish wire (then patch drywall) — adds **\$100–\$300** - Run conduit on the surface of the basement ceiling if appearance isn't a concern
- **Slab-on-grade (no basement):** This is the trickiest scenario. Options include:
 - Cutting a channel in the concrete slab to run conduit (expensive and disruptive) - Running wire through the ceiling and down a post (uncommon in residential) - If the island is near a wall, running wire through the kick-space of base cabinets

Slab-on-grade islands are relatively uncommon in New Brunswick (most NB homes have basements), but some newer construction in Dieppe and Moncton subdivisions uses slab foundations.

GFCI Protection Details

Kitchen island outlets must be GFCI-protected. You have two options:

GFCI breaker in the panel: Protects the entire circuit from the panel. Cost: **\$40–\$60** for the breaker.

Advantage: the outlet at the island looks like a standard receptacle.

GFCI receptacle at the island: The first outlet in the circuit is a GFCI type, protecting itself and any outlets downstream. Cost: **\$20–\$35** for the receptacle. Advantage: the test/reset buttons are right at the outlet, making it easy to reset after a trip.

Either method meets CEC requirements. Most electricians prefer the GFCI breaker approach for island outlets because the breaker panel is more accessible than a receptacle behind an island cabinet if troubleshooting is needed.

TSANB Permit

Adding a new outlet circuit requires a **TSANB (Technical Safety Authority of New Brunswick) electrical permit** and inspection. This applies whether you're adding one outlet or rewiring the entire kitchen. Permit cost: **\$75–\$150**. Your electrician should include this in their quote.

Common Mistakes to Avoid

- **Tapping into a lighting circuit:** Kitchen countertop outlets must be on dedicated 20-amp small appliance circuits, not lighting circuits. An electrician who suggests "just tapping into the nearest wire" may be cutting corners.
- **Forgetting GFCI protection:** Every kitchen countertop outlet — including islands — must be GFCI-protected. Skipping this fails TSANB inspection.
- **Outlet too close to sink:** If your island has a sink, outlets must be placed to avoid being directly above the basin. The CEC doesn't specify a minimum distance from a sink on an island countertop the way it does for wall-mounted outlets near basins, but good practice and TSANB inspectors expect reasonable separation.
- **Undersized circuit:** If your existing kitchen circuits are already heavily loaded (common in older NB homes where the original two 15-amp kitchen circuits have been supplemented with appliances over decades), adding island outlets may require a new dedicated 20-amp circuit from the panel.

Cost Summary

Scenario	Cost (installed)		-----	-----		1 outlet, through floor, unfinished basement	\$300–\$600
2 outlets, through floor, unfinished basement	\$500–\$900		Pop-up counter outlet, through floor	\$400–\$800			
Finished basement below (add drywall patching)	+\$100–\$300		New 20-amp circuit from panel	+\$200–\$400			
	TSANB permit	\$75–\$150					

For most New Brunswick homes with accessible basements, adding one or two island outlets is a **half-day job for a licensed electrician** costing **\$400–\$800 all-in**.

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Q9

How do I add more outlets to a room without enough in my NB home?

Adding Outlets to Rooms That Don't Have Enough

Older New Brunswick homes — especially those built before the 1970s — were designed for far fewer electrical devices than we use today. A bedroom with one duplex outlet and a living room with two was perfectly adequate when the only things plugged in were a lamp and a radio. Today, that's a recipe for extension cord hazards.

How Many Outlets Does a Room Need?

The Canadian Electrical Code requires that no point along any wall be more than 1.8 metres (6 feet) from a receptacle. This means:

- Any wall section 900mm (3 feet) or wider needs at least one receptacle
- A typical 12×14 foot bedroom needs 5–6 duplex outlets
- A typical 14×18 foot living room needs 7–9 duplex outlets
- Kitchen countertops need outlets every 900mm, with no point more than 900mm from an outlet

Many older NB homes have half these numbers. If you're constantly using extension cords and power strips, your home likely doesn't meet modern spacing requirements.

Options for Adding Outlets

Option 1: Add outlets to existing circuits (\$200–\$400 per outlet)

If the existing circuit has capacity (not already tripping the breaker), your electrician can tap into the circuit and add new outlet locations.

Process:

- Run NMD90 cable from an existing outlet or junction box to the new location
- Install a new electrical box and receptacle
- TSANB permit required (new wiring)

This works well when you need 1–3 additional outlets in a room. The electrician checks circuit load to confirm the circuit can handle additional devices.

Option 2: Run a new circuit from the panel (\$400–\$700 per circuit)

If the existing circuit is already near capacity (common in kitchens and rooms with space heaters), a new dedicated circuit is the better approach.

A new 15A or 20A circuit from the panel provides:

- Full capacity for the new outlets
- AFCI protection (required on new circuits in living spaces)
- No risk of overloading existing circuits

This is the right choice for rooms where you know the electrical demand is high — home offices with multiple monitors, gaming setups, or rooms where a space heater is regularly used.

Option 3: Surface-mount wiring (\$150–\$350 per outlet)

When running wire through walls is impractical (concrete basement walls, exterior brick, or situations where you don't want to open finished walls), surface-mount raceway (Wiremold) provides a code-compliant alternative.

- Plastic or metal channels mounted on the wall surface carry the wire
- Matching outlet boxes mount on the surface
- Not as clean-looking as in-wall wiring, but far neater than extension cords
- Popular for basement workshops, garages, and older commercial-to-residential conversions

Option 4: Floor outlets (\$300–\$500 per outlet)

For rooms where furniture sits in the centre (dining tables, kitchen islands, desks), floor outlets provide power without running cords along walls.

- Recessed brass or stainless floor boxes sit flush with the floor
- Flip-up covers keep the outlet sealed when not in use
- Require routing cable under the floor (from the basement or crawlspace)

- Best installed during renovations when flooring is being replaced

What the Electrician Does

A typical outlet addition involves:

- Identifying the best circuit to tap into (or determining a new circuit is needed)
- Choosing the optimal wire route — through the attic, basement, or wall cavities
- Cutting the hole for the new outlet box
- Running NMD90 cable from the source to the new location
- Making connections and testing
- Installing the cover plate
- TSANB inspection

The routing is the biggest variable in cost. Running cable through an unfinished basement ceiling to a main-floor outlet is straightforward. Running cable through a finished second-floor wall with no attic access is much harder.

Common NB Scenarios and Costs

Scenario	Cost Per Outlet
Main floor, unfinished basement below (easy access)	\$200–\$350
Second floor, attic access above	\$250–\$400
Second floor, no attic access (finished attic/flat roof)	\$350–\$600
Basement with concrete walls (surface-mount raceway)	\$150–\$300
Kitchen counter outlet (new dedicated 20A circuit)	\$400–\$700
Floor outlet (access from below)	\$300–\$500
Outdoor GFCI outlet (from interior circuit)	\$250–\$450

Discount per outlet when adding multiple: electricians typically reduce the per-outlet cost by 15–25% when installing 3+ outlets in one visit, since the setup and permit costs are shared.

Do I Need a Permit?

Yes. Adding new outlets involves running new wiring, which requires a TSANB electrical permit. The permit covers both the rough-in (if walls are open) and final inspection. Cost: \$50–\$100 for the permit.

Replacing existing outlets (swapping a standard outlet for a GFCI or USB outlet) does NOT require a permit.

Tips for Planning

- **Think about furniture layout** — put outlets where you'll actually use them, not just where the wall is easiest to access

- **Consider USB outlets** for bedside tables, kitchen counters, and office desks
- **Add more than you think you need** — adding one extra outlet during the same visit costs much less than a separate service call later
- **Ask about AFCI protection** — new outlets in bedrooms and living spaces require AFCI breakers. The electrician will handle this, but it adds \$35–\$55 for the breaker.
- **Combine with other work** — if you're already having electrical work done (panel upgrade, lighting, etc.), adding outlets during the same project reduces the marginal cost significantly

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How do I add USB outlets to my New Brunswick home?

Adding USB Outlets to Your New Brunswick Home

USB outlets combine a standard electrical receptacle with built-in USB charging ports, eliminating the need for bulky wall adapters. They're one of the simplest and most appreciated electrical upgrades you can make.

Types of USB Outlets

USB-A outlets (rectangular port) The original USB standard. Charges phones, tablets, and most devices at 2.1–2.4 amps per port. Being phased out by manufacturers in favour of USB-C but still useful for older devices.

USB-C outlets (oval port) The current standard. Supports faster charging (up to 30W on some outlets) and works with newer phones, laptops, tablets, and earbuds. Most new devices ship with USB-C cables only.

Combination outlets (USB-A + USB-C) The most versatile option — includes both port types plus standard receptacles. Best for households with a mix of newer and older devices. This is what most NB homeowners should buy in 2025–2026.

USB-C Power Delivery (PD) outlets High-power USB-C ports that can charge laptops and tablets at 30W+. More expensive (\$35–\$60 per outlet) but eliminate the need for laptop charger bricks.

Where to Install USB Outlets

Prioritize locations where you actually charge devices:

- **Kitchen counter** — charging phones while cooking, recipe viewing on tablets
- **Bedside / nightstand** — overnight phone and watch charging
- **Home office / desk area** — phone, tablet, wireless earbuds
- **Living room end tables** — guest-friendly charging
- **Entryway / mudroom** — charge phones upon arriving home
- **Bathroom vanity** — electric toothbrush, shaver (some USB-powered models)

Skip USB outlets in locations where you rarely need charging: closets, hallways, laundry rooms, garages.

DIY Installation

Replacing a standard outlet with a USB outlet is a straightforward swap that homeowners in New Brunswick can legally do themselves (no new wiring, no TSANB permit needed).

Tools needed:

- Flathead and Phillips screwdrivers
- Non-contact voltage tester (\$15–\$25)
- Wire strippers (if adjusting wire lengths)

Steps:

- **Turn off the breaker** for that outlet's circuit
- **Verify power is off** with a non-contact voltage tester — test on a known-live outlet first to confirm the tester works
- **Remove the cover plate and unscrew the outlet** from the box
- **Photograph the wiring** before disconnecting anything
- **Disconnect wires** from the old outlet (loosen screw terminals or release backstab clips)
- **Connect wires to the new USB outlet** — black to brass/hot terminal, white to silver/neutral terminal, bare copper to green/ground terminal
- **Carefully fold wires back into the box** — USB outlets are deeper than standard outlets, so box fill can be tight. If the box is shallow, you may need to trim wire length slightly.
- **Screw the outlet into the box and install the cover plate**
- **Restore power and test** — plug in a device to verify USB charging works, and test the standard receptacles with a lamp or outlet tester

Time: 15–30 minutes per outlet.

Common Installation Issues

Shallow boxes: USB outlets are physically deeper than standard outlets because of the USB charging circuitry inside. If your electrical box is a shallow "old work" box (common in older NB homes), the outlet may not sit flush with the wall. Solutions:

- Use a box extension ring (\$2–\$5)
- Choose a slim-profile USB outlet (Leviton and Legrand make thinner models)
- Some boxes can be pushed back slightly into the wall cavity

Aluminum wiring: If your NB home has aluminum wiring (silver-coloured, common in 1965–1976 homes), you **MUST** use a USB outlet rated for aluminum connections (marked "AL" or "CO/ALR"). Most USB outlets are

copper-only. If unsure, have a licensed electrician handle the installation.

GFCI locations: In kitchens, bathrooms, and other locations requiring GFCI protection, use a USB outlet that includes GFCI protection, or ensure the circuit is protected by an upstream GFCI outlet or GFCI breaker. Standard USB outlets do NOT include GFCI — installing one in a bathroom without GFCI protection elsewhere on the circuit is a code violation.

Costs

| Product | Cost Per Outlet | |-----|-----| | USB-A only outlet | \$15–\$25 | | USB-A + USB-C combo outlet | \$20–\$35 | | USB-C PD (30W) outlet | \$35–\$60 | | GFCI + USB combo outlet | \$35–\$55 |

DIY total for 6 outlets: \$120–\$210 in materials + 2–3 hours of time.

Electrician installation: \$75–\$150 per outlet (device + labour). Many electricians offer a reduced per-outlet rate when doing multiple outlets in one visit — 6 outlets might run \$400–\$700 total.

Recommended Brands

- **Leviton T5633** — USB-A/C combo, reliable, good fit in standard boxes. \$25–\$30.
- **Legrand radiant USB** — slim profile, good for shallow boxes. \$25–\$35.
- **Topgreener TU21558AC** — budget-friendly USB-A/C combo. \$18–\$25.
- **Leviton T5635** — USB-C with 30W PD for laptop charging. \$45–\$55.

All are available at Kent, Home Hardware, or online retailers shipping to New Brunswick.

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How do I test if an outlet is grounded and what if it's not?

Testing Outlet Grounding and What to Do About Ungrounded Outlets

Many older New Brunswick homes have outlets that appear grounded (three-prong) but actually aren't — someone replaced the original two-prong outlets with three-prong covers without adding a ground wire. This is a code violation and a safety hazard.

Why Grounding Matters

The ground wire provides a safe path for fault current — if a hot wire inside an appliance touches the metal case, the ground wire carries that current back to the panel and trips the breaker. Without a ground:

- The metal case of the appliance becomes energized at 120V
- Touching it while also touching anything grounded (water pipe, another appliance, wet floor) completes the circuit through your body
- GFCI outlets may not function properly without a ground reference
- Surge protectors are **ineffective** without a ground — they need the ground wire to divert surge energy

How to Test for Ground

Method 1: Outlet tester (\$15–\$25) A three-light outlet tester (available at any Kent, Home Hardware, or Canadian Tire in NB) plugs into the outlet and indicates wiring status through light combinations:

| Lights | Meaning | |-----|-----| | Two amber/yellow | Correct wiring | | One red only | Open ground (no ground connected) | | No lights | No power or open hot | | Other patterns | Reversed wiring, open neutral, or other faults |

This is the simplest and fastest test. Plug the tester into every three-prong outlet in your home — it takes 30 seconds per outlet.

Method 2: Multimeter (\$30–\$60) For a more definitive test:

- Set your multimeter to AC voltage
- Measure hot to neutral (should read 115–125V)
- Measure hot to ground (should read 115–125V)
- Measure neutral to ground (should read 0–2V)

If hot-to-ground reads 0V, there's no ground connection. If neutral-to-ground reads more than 5V, there's a wiring issue.

Method 3: Visual inspection Turn off the breaker, remove the outlet cover plate, and look at the wiring:

- **Grounded:** Three wires connected — black (hot), white (neutral), and bare copper or green (ground)
- **Ungrounded:** Only two wires — black and white, with nothing connected to the green ground screw
- **Bootleg ground:** Ground screw jumpered to the neutral screw — this is dangerous and creates a false positive on simple testers

What You'll Find in Older NB Homes

- **Homes built before 1960:** Likely have knob-and-tube or early NMD wiring with no ground wire. Any three-prong outlets were probably retrofitted without adding ground.
- **Homes built 1960–1975:** May have a mix. Some circuits grounded, some not. Two-wire NMD cable was still used on some circuits.
- **Homes built after 1975:** Should have grounded wiring throughout (NMD90 cable with ground wire). But amateur renovations may have disconnected or damaged ground connections.

Options for Ungrounded Outlets

Option 1: Rewire with ground (best solution) Run new NMD90 cable (which includes a ground wire) from the panel to each ungrounded outlet. This is the gold standard but can be expensive if it means opening walls.

Cost: \$200–\$500 per outlet for accessible runs, \$400–\$800+ per outlet if walls need to be opened.

Option 2: GFCI protection (code-compliant alternative) The CEC allows replacing an ungrounded outlet with a GFCI outlet or protecting it with a GFCI breaker. This provides personal shock protection even without a ground wire. The outlet must be labelled "No Equipment Ground."

Cost: \$100–\$175 per outlet, or \$150–\$250 for a GFCI breaker protecting the whole circuit.

Limitations of GFCI without ground:

- Surge protectors still won't work properly
- Equipment that requires a ground for proper function (some computers, audio equipment) may not work correctly
- The GFCI provides shock protection but not the equipment fault protection that a true ground provides

Option 3: Run a ground wire only The CEC allows retrofitting a ground wire without replacing the entire cable. A bare or green insulated ground wire can be run from the outlet to the panel's ground bus, to a grounded metal water pipe, or to the grounding electrode. The ground wire doesn't need to follow the same path as the circuit conductors.

Cost: \$100–\$300 per outlet, depending on routing difficulty.

Option 4: Do nothing (not recommended) Leaving ungrounded outlets with three-prong faces is a code violation and safety hazard. It also creates liability if someone is injured and the wiring is found to be non-compliant.

Priority Order

If budget doesn't allow fixing every ungrounded outlet at once, prioritize:

- **Kitchen and bathroom** — water proximity makes shock risk highest
- **Home office / computer area** — surge protectors need ground to function
- **Laundry area** — wet hands, water appliances
- **Bedrooms** — people spend long hours near these outlets while sleeping
- **Living areas** — expensive electronics at risk from ungrounded surge protectors

Get a Professional Assessment

For \$100–\$200, a TSANB-licensed electrician in New Brunswick can test every outlet in your home, identify which circuits are grounded and which aren't, and provide a prioritized quote for bringing everything up to standard. This is especially worthwhile before buying an older home — add it to your home inspection checklist.

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What is the difference between 15-amp and 20-amp outlets and when do I need 20-amp?

15-Amp vs. 20-Amp Outlets: What New Brunswick Homeowners Need to Know

The difference between 15-amp and 20-amp outlets is one of the most misunderstood aspects of residential electrical. Here's what actually matters for your NB home.

Physical Difference

A **15-amp outlet** (NEMA 5-15R) has two vertical slots and a round ground hole. This is the standard outlet you see throughout most homes.

A **20-amp outlet** (NEMA 5-20R) has one vertical slot, one T-shaped slot, and a round ground hole. The T-shaped slot accepts both standard 15-amp plugs and 20-amp plugs (which have one blade rotated 90 degrees).

Electrical Difference

The amp rating determines how much current the outlet can safely deliver:

- **15-amp outlet on a 15-amp circuit (14 AWG wire):** Maximum continuous load of 12 amps (80% rule) = **1,440 watts**
- **20-amp outlet on a 20-amp circuit (12 AWG wire):** Maximum continuous load of 16 amps (80% rule) = **1,920 watts**

That extra 480 watts matters when you're running high-draw appliances.

Where the CEC Requires 20-Amp Circuits

The Canadian Electrical Code requires 20-amp circuits (with 12 AWG wiring) for:

- **Kitchen counter receptacles** — kitchens need at least two 20-amp small appliance circuits serving the countertop outlets. These handle kettles (1,200–1,500W), toasters (800–1,400W), and other countertop appliances.
- **Bathroom receptacles** — at least one 20-amp circuit for bathroom outlets
- **Laundry room receptacles** — at least one 20-amp circuit
- **Garage receptacles** — at least one 20-amp circuit

These are minimum requirements for new construction and renovations in New Brunswick where new wiring is installed.

Where 15-Amp Is Fine

- **Bedroom outlets** — lighting and electronics rarely approach 12 amps
- **Living room outlets** — TV, lamps, and charging devices are low-draw
- **Hallway and closet outlets** — minimal loads
- **Lighting circuits** — LED lighting uses so little power that 15-amp circuits are more than adequate

Common NB Scenarios

Older homes with all 15-amp circuits: Many homes in New Brunswick built before the 1990s have 15-amp circuits throughout, including the kitchen. If you're not renovating, this is grandfathered — you don't need to upgrade existing circuits to 20 amps. But if you're constantly tripping the kitchen breaker when running the toaster and kettle simultaneously, upgrading to a 20-amp kitchen circuit is the solution.

Space heater use: Portable space heaters are heavily used in NB winters and typically draw 12.5 amps (1,500W). On a 15-amp circuit, that one heater consumes 83% of the circuit's safe capacity, leaving almost nothing for other devices. This is why electricians recommend dedicated 20-amp circuits for rooms where space heaters will be used regularly — or better yet, upgrading to a heat pump.

Workshop circuits: Table saws, planers, and other shop tools can draw 12–15 amps. A 20-amp circuit gives adequate headroom. Serious workshops should have dedicated 20-amp circuits for each major tool location, plus a 240V circuit for any equipment that runs on 240.

Can You Put a 15-Amp Outlet on a 20-Amp Circuit?

Yes, and this is actually the standard practice. The CEC allows 15-amp receptacles on 20-amp circuits as long as there are two or more receptacles on the circuit (which is almost always the case). The circuit is protected by the 20-amp breaker and wired with 12 AWG, and the individual outlets can be standard 15-amp devices.

The only time you'd install a 20-amp receptacle specifically is for a **single dedicated outlet** on a 20-amp circuit — like a window AC unit or a commercial appliance with a 20-amp plug.

Upgrade Costs in NB

| Upgrade | Typical Cost | |-----|-----| | Replace 15A breaker with 20A (if wiring supports it) | \$75–\$150 |
| Run new 20A circuit (kitchen, bathroom, garage) | \$300–\$600 | | Upgrade kitchen to code (2 dedicated 20A

counter circuits) | \$600–\$1,200 | | Add dedicated 20A workshop circuit | \$300–\$600 |

Important: You cannot simply swap a 15-amp breaker for a 20-amp breaker without verifying the wire gauge. If the circuit uses 14 AWG wire (rated for 15A), putting a 20A breaker on it creates a fire hazard — the wire can overheat before the breaker trips. A licensed electrician in New Brunswick will verify wire gauge before any breaker upgrade.

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What is a GFCI outlet and where are they required in New Brunswick homes?

GFCI Outlets: What They Are and Where NB Homes Need Them

A GFCI (Ground Fault Circuit Interrupter) outlet monitors the current flowing through it and trips in as little as 1/40th of a second if it detects current leaking to ground — which happens when electricity passes through water or a person. They're one of the most important safety devices in your home.

How GFCIs Work

The GFCI continuously compares the current on the hot wire to the current on the neutral wire. In normal operation, these are equal. If even 4–6 milliamps of difference is detected (meaning current is escaping through an unintended path), the GFCI trips and cuts power. For reference, it takes about 100 milliamps to cause a fatal heart rhythm disruption, so the GFCI trips well before that threshold.

Where GFCIs Are Required

The Canadian Electrical Code (CEC), which New Brunswick adopts, requires GFCI protection in these locations:

- **Bathrooms** — all receptacles
- **Kitchens** — receptacles within 1.5 metres of a sink
- **Laundry areas** — receptacles near the sink
- **Garages and accessory buildings** — all receptacles
- **Unfinished basements** — all receptacles
- **Outdoors** — all exterior receptacles
- **Within 1.5 metres of any sink, tub, or water source**
- **Crawl spaces and below-grade areas**
- **Hot tub and pool equipment circuits** (also need GFCI breakers)
- **Boat houses and docks**

These requirements apply to new construction and renovations where wiring is being modified. If your home was built in the 1970s or earlier, you likely have none of these protections — older homes in Moncton's north end, Saint John's south end, and Fredericton's older neighbourhoods commonly lack GFCIs entirely.

Types of GFCI Protection

GFCI receptacles (\$15–\$25 each) replace a standard outlet and have TEST and RESET buttons on the face. One GFCI receptacle can protect all downstream outlets on the same circuit.

GFCI breakers (\$40–\$80 each) install in your electrical panel and protect the entire circuit. These are used for hardwired equipment (like a hot tub or sump pump) where there's no receptacle to replace.

Installation Costs

Replacing a standard outlet with a GFCI receptacle is one of the most affordable electrical upgrades:

- **DIY (if comfortable and legal):** \$15–\$25 per outlet for the device. Note: in New Brunswick, homeowners can do basic receptacle replacements in their own home, but the work should still meet CEC standards.
- **Licensed electrician:** \$100–\$175 per outlet (device + labour), often less per outlet if you're having several done at once
- **GFCI breaker installation:** \$150–\$250 per breaker, installed in your panel

A whole-house GFCI upgrade (kitchen, bathrooms, exterior, garage, basement) for an older home typically runs \$600–\$1,500 depending on the number of locations.

Testing Your GFCIs

GFCIs should be tested monthly by pressing the TEST button — the power should cut off immediately. Press RESET to restore power. If the TEST button doesn't trip the outlet, or the RESET button won't stay in, the GFCI has failed and needs replacement. GFCIs have a lifespan of about 10–15 years.

Why This Matters in NB

New Brunswick's high humidity near the coast (Saint John, Shediac, Bathurst) and seasonal flooding in river communities along the Saint John River and Petitcodiac make GFCI protection especially critical. Water and electricity are a deadly combination — GFCIs are your first line of defence.

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Q14

What is the difference between 15 amp and 20 amp outlets and which do I need in New Brunswick?

15-Amp vs. 20-Amp Outlets: What New Brunswick Homeowners Need to Know

The difference between 15-amp and 20-amp outlets is one of the most commonly misunderstood aspects of residential electrical systems in New Brunswick. Choosing the wrong one — or more commonly, not having enough 20-amp circuits where they're needed — leads to tripped breakers, overloaded wiring, and frustration. Here's what you actually need to know.

The Physical Difference

15-amp outlets have two vertical slots (one slightly wider than the other) plus a round ground hole. This is the standard outlet found throughout most New Brunswick homes. They accept all standard 2-prong and 3-prong plugs.

20-amp outlets look almost identical but have one key difference — the neutral slot (the wider one on the left) is **T-shaped** instead of just a vertical slot. This T-shape accepts both standard 15-amp plugs AND the special horizontal-prong 20-amp plugs found on some commercial equipment and high-draw appliances.

The Electrical Difference

15-amp circuits use **14 AWG (gauge) wire** and are protected by a **15-amp breaker** in your panel. Maximum continuous load: 12 amps (80% of 15A, per CEC continuous load rules). This handles most household needs — lights, phone chargers, TVs, computers, small appliances.

20-amp circuits use **12 AWG wire** (thicker, more expensive) and are protected by a **20-amp breaker**. Maximum continuous load: 16 amps. The heavier wire carries more current without overheating, making these circuits suitable for high-draw appliances like microwaves, toasters, space heaters, and power tools.

The wire gauge is the critical safety factor — not the outlet itself. Putting a 20-amp outlet on 14-gauge wire is **dangerous and a code violation** because the wire can overheat before the breaker trips. Putting a 15-amp outlet on a 20-amp circuit with 12-gauge wire is actually **allowed by the CEC** and very common — the wire and breaker provide the protection, and the outlet simply limits what can be plugged in.

What the Canadian Electrical Code Requires in New Brunswick

The CEC, as adopted by New Brunswick through TSANB, specifies where 20-amp circuits are mandatory:

Kitchen countertop receptacles: Must be on dedicated **20-amp split circuits** (also called "split receptacles").

The CEC requires at least 2 dedicated 20-amp circuits serving kitchen counter outlets, separate from the refrigerator circuit, dishwasher circuit, and lighting circuit. This is the most common code violation found in older Moncton, Saint John, and Fredericton kitchens — homes built before the 1970s often have the entire kitchen on a single 15-amp circuit.

Bathroom receptacles: Must be on a **dedicated 20-amp circuit** that serves only the bathroom(s). In older New Brunswick homes, bathroom outlets were often wired to the nearest bedroom circuit — a code violation under current standards.

Laundry room receptacles: Must have at least one **20-amp circuit** dedicated to the laundry area for the washing machine and ironing.

Garage and workshop receptacles: While the CEC doesn't mandate 20-amp circuits for all garage outlets, it's strongly recommended and is standard practice among New Brunswick electricians. Tools and compressors regularly draw 12-15 amps, which overloads a 15-amp circuit.

Where 15-Amp Circuits Are Fine

- **Bedrooms** — Standard 15-amp circuits are adequate for lamps, phone chargers, alarm clocks, and occasional vacuum use
- **Living rooms and family rooms** — TVs, gaming consoles, and electronics rarely exceed 5-6 amps combined on a single circuit
- **Hallways, closets, and foyers** — Low-demand areas
- **Lighting circuits** — LED lighting draws minimal current; a single 15-amp circuit can power dozens of LED fixtures

Common Problems in Older New Brunswick Homes

Kitchen circuits undersized: This is the #1 electrical deficiency found during home inspections in the Greater Moncton area. Homes built before 1975 typically have 1-2 circuits serving the entire kitchen — including lights, counter outlets, and sometimes the refrigerator and dishwasher. Running a microwave (12A) and toaster (8A) simultaneously on a single 15-amp circuit guaranteed trips the breaker. The fix: adding dedicated 20-amp counter circuits (\$400-\$800 per circuit).

Bathroom on bedroom circuit: In homes built before the 1980s, the single bathroom outlet was typically wired to an adjacent bedroom's circuit with no GFCI protection. Current code requires a dedicated 20-amp bathroom circuit with GFCI protection. Adding this costs \$300-\$600.

Over-fused circuits: In homes with fuse panels (common in pre-1970 Moncton homes), someone may have replaced a blown 15-amp fuse with a 20-amp fuse to stop the tripping. This doesn't upgrade the circuit — it just lets 14-gauge wire carry more current than it's rated for, creating a fire hazard. The only safe solution is to either reduce the load on the circuit or rewire it with 12-gauge wire on a proper 20-amp circuit.

Cost to Upgrade Circuits in New Brunswick

| Upgrade | Typical Cost | |-----|-----| | Add 1 dedicated 20-amp kitchen circuit | \$400-\$800 | | Add dedicated 20-amp bathroom circuit | \$300-\$600 | | Add 20-amp garage circuit | \$300-\$500 | | Replace outlet (15A to 20A on existing 20A circuit) | \$75-\$150 | | Full kitchen rewire (2 counter circuits + dedicated fridge + dishwasher) | \$1,500-\$3,000 | | TSANB permit | \$50-\$100 |

Labour rates for licensed electricians in New Brunswick: \$85-\$150/hour. Most circuit additions take 2-4 hours.

Should You Upgrade?

If your New Brunswick home was built before 1990, you almost certainly have fewer 20-amp circuits than the current CEC requires. Priority upgrades:

- **Kitchen counter circuits** — If you're tripping breakers when using two countertop appliances, this is the most impactful upgrade
- **Bathroom circuit** — Safety critical for GFCI protection near water
- **Home office** — If you've converted a bedroom to an office with a computer, monitor, printer, and space heater, a dedicated 20-amp circuit prevents frustrating breaker trips during important work
- **Garage/workshop** — Essential if you use power tools

A TSANB-licensed electrician can assess your current circuit layout and recommend the most cost-effective upgrades for your specific home. Most offer free or low-cost estimates in the Greater Moncton, Fredericton, and Saint John areas.

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Q15

How much does it cost to add an outlet in a finished basement in New Brunswick?

Cost to Add an Outlet in a Finished Basement in New Brunswick

Adding an electrical outlet to a finished basement in New Brunswick typically costs between **\$250 and \$600 per outlet**, depending on the complexity of the installation, your location in the province, and how accessible the existing wiring is behind finished walls.

Cost Breakdown by Scenario

Simple installation (outlet near existing circuit): \$250-\$350 This is the best-case scenario where the new outlet can tap into an existing circuit that's easily accessible through the ceiling space above. The electrician runs new 14/2 NMD90 cable from the existing circuit, cuts into the drywall, installs an electrical box, and patches the opening. Labour is typically 1.5-2 hours at \$85-\$150/hour depending on whether you're in Moncton, Saint John, or Fredericton.

Moderate installation (new circuit run from panel): \$400-\$600 If your basement circuits are already near capacity or the new outlet is far from existing wiring, a new dedicated circuit from the panel is needed. This involves running 30-50 feet of cable through finished walls and ceilings, which often requires fishing wire through closed cavities. In older New Brunswick homes — especially pre-1980 builds common in Saint John's South End or Fredericton's downtown — the panel may also need a new breaker slot, adding \$25-\$50 for the breaker itself.

Complex installation (multiple outlets or GFCI required): \$500-\$900+ Basement outlets within 1.5 metres of a sink, laundry area, or any unfinished section require GFCI protection under the Canadian Electrical Code. A GFCI receptacle costs \$25-\$45 compared to \$3-\$5 for a standard outlet, but it's mandatory for safety compliance. If you're adding 3-4 outlets as part of a basement finishing project, expect \$1,200-\$2,400 total.

What Affects the Price in New Brunswick

Finished vs. exposed walls are the biggest cost factor. Running cable through open ceiling joists in an unfinished section takes 30 minutes. Fishing wire through a closed drywall cavity can take 2-3 hours and may require cutting access holes that need patching afterward. Some electricians charge \$50-\$100 extra for drywall repair, while others leave the patching to you.

Panel capacity matters more than many homeowners realize. Many older New Brunswick homes still have **100-amp electrical services**, which may not have spare breaker spaces. If your panel is full, you'll need either a tandem breaker (\$15-\$25) or a sub-panel installation (\$800-\$1,500), which significantly increases the total project cost.

NB Power's service also plays a role. If the added load pushes your home's total electrical demand close to the service capacity, the electrician may recommend a service upgrade. A full upgrade from 100 to 200 amps runs \$2,500-\$4,500 in New Brunswick, including the NB Power reconnection fee.

Permit Requirements

Adding outlets in a finished basement requires an electrical permit from the Technical Safety Authority of New Brunswick (TSANB). The permit typically costs \$50-\$100 and includes a follow-up inspection to verify the work meets the Canadian Electrical Code. Your electrician should pull this permit — if they suggest skipping it, that's a major red flag.

Code Requirements for Basement Outlets

The CEC requires specific outlet spacing in finished basements. Along any wall longer than 900mm, outlets must be placed so that no point along the wall is more than 1.8 metres from a receptacle. This often means homeowners discover they need more outlets than originally planned when finishing a basement to code.

Tips to Save Money

- **Bundle multiple outlets** into one service call — adding 3 outlets at once is cheaper per outlet than 3 separate visits
- **Plan outlet locations before drywall goes up** if you're still in the finishing stage — this can cut costs by 40-60%
- **Get 3 quotes** from licensed New Brunswick electricians and compare the itemized breakdowns
- **Consider future needs** — adding a dedicated 20-amp circuit now for a potential home office or workshop saves the cost of a return visit later

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How to childproof electrical outlets in older New Brunswick homes?

Childproofing Electrical Outlets in Older New Brunswick Homes

Older homes across New Brunswick — particularly pre-1980 builds common in Moncton's downtown, Saint John's uptown, and Fredericton's south side — present unique electrical safety challenges when you have young children. Many of these homes still have ungrounded 2-prong outlets, worn receptacles with loose plug fit, and outlets placed at heights and locations that don't meet current safety standards.

Understanding What You're Working With

Before childproofing, identify what type of outlets your older New Brunswick home has:

Ungrounded 2-prong outlets are found in homes built before the mid-1960s. These have no ground wire and only accept 2-prong plugs. They provide no ground fault protection and are the highest risk for child safety because many won't accept modern tamper-resistant cover plates designed for 3-prong outlets.

Grounded 3-prong outlets (non-tamper-resistant) are found in homes from the 1960s through 2009. These have a ground wire but lack the internal spring-loaded shutters that block foreign objects from being inserted into the slots.

Tamper-resistant receptacles (TR) have been required by the Canadian Electrical Code for all 15A and 20A receptacles in new construction and renovations since 2009. These have internal shutters that only open when both prongs of a plug are inserted simultaneously — a child pushing a paperclip or key into one slot can't open the shutter.

Childproofing Options by Outlet Type

For ungrounded 2-prong outlets:

- **Replace with tamper-resistant GFCI receptacles** — This is the best long-term solution. A tamper-resistant GFCI outlet (\$25-\$40 each) can be legally installed on an ungrounded circuit in New Brunswick because the GFCI provides ground fault protection even without a ground wire. The outlet must be labelled "No Equipment Ground" with stickers included in the GFCI package. Professional installation costs \$75-\$150 per outlet.
- **Outlet covers (plastic plug inserts)** — The cheapest option at \$3-\$8 for a pack of 12-36. However, studies show these are only moderately effective — children as young as 2 can learn to remove them, and parents often forget to replace them after use. They're a temporary measure, not a permanent solution.

- **Sliding outlet covers** — These mount over the outlet plate and have a spring-loaded cover that slides closed when the plug is removed (\$5-\$10 each). More effective than plug inserts because children can't remove them without tools.

For grounded 3-prong non-TR outlets:

- **Replace with tamper-resistant receptacles** — The most effective permanent solution. TR receptacles cost \$4-\$8 each and are a direct swap for any standard 3-prong outlet. A homeowner comfortable with basic electrical work can do this themselves in New Brunswick (with a TSANB permit), or hire an electrician for \$50-\$100 per outlet including materials.
- **Outlet box covers** — For outlets you rarely use, a blank cover plate (\$2-\$3) or a locking outlet cover (\$8-\$15) completely blocks access.

Priority Areas in Your Home

Focus childproofing efforts on these high-risk locations first:

- **Outlets below 600mm (2 feet) from the floor** — These are at a toddler's eye and hand level. In older New Brunswick homes, outlets are often mounted at 300mm (12 inches), which is perfect reaching height for crawling babies.
- **Kitchen and bathroom outlets** — These should have both tamper resistance AND GFCI protection. The CEC requires GFCI protection within 1.5 metres of a sink.
- **Bedroom outlets near cribs and beds** — Arc-fault circuit interrupter (AFCI) protection is now required by the CEC for bedroom circuits in new work. While not mandatory for existing circuits, it's a worthwhile upgrade (\$35-\$50 per AFCI breaker) for added fire protection in children's rooms.
- **Basement and garage outlets** — Often overlooked but accessible to children in homes with open-concept lower levels common in New Brunswick split-levels and bi-levels.

The Best Permanent Solution

The single most effective childproofing measure is **replacing all accessible outlets with tamper-resistant receptacles**. For a typical 3-bedroom New Brunswick home with 40-60 outlets, the materials cost is \$200-\$500. Having a licensed electrician do the full house runs \$1,500-\$3,000, which includes updating any worn or damaged outlets discovered during the process.

If your home still has the original 2-prong outlets, this is also the opportunity to upgrade to grounded circuits or at minimum install GFCI-protected tamper-resistant outlets throughout the home — improving both child safety

and your home's electrical system.

Important Safety Note

Never use 3-prong to 2-prong adapters ("cheater plugs") as a workaround in a home with children. These defeat the ground protection and create a loose connection that children can pull apart. If your home has 2-prong outlets, invest in proper GFCI upgrades rather than relying on adapters.

For any electrical work beyond simple TR outlet swaps, contact a TSANB-licensed electrician and obtain the required electrical permit. The safety of your children is worth the investment.

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Q17

What GFCI outlet requirements apply to bathrooms and kitchens under New Brunswick electrical code?

Under the Canadian Electrical Code as enforced by TSANB in New Brunswick, all outlets within 1.5 metres of a sink must be GFCI protected — this applies to every bathroom, kitchen, and laundry room in your home. GFCI (Ground Fault Circuit Interrupter) outlets detect dangerous current leaks as small as 5 milliamps and shut off power in a fraction of a second, preventing electrocution.

Bathroom requirements are the most comprehensive. Every outlet in a bathroom must be GFCI protected, regardless of distance from the sink or tub. The CEC requires at least one outlet within 1 metre of each bathroom sink basin, and it must be on a dedicated 20 amp circuit that serves only bathroom outlets (not lighting). If you have a shared bathroom and ensuite, each needs its own GFCI-protected circuit. Outlets near the bathtub or shower

must be at least 1 metre from the tub edge, and they must be GFCI protected.

Kitchen requirements are equally important. All countertop outlets must be GFCI protected. The CEC requires countertop outlets to be spaced so that no point along the countertop is more than 900mm from an outlet — which typically means outlets every 1.2 to 1.8 metres along the counter. Kitchen countertop circuits must be 20 amp split circuits (two circuits sharing a single cable), and they're dedicated to countertop use only — you can't put the refrigerator or dishwasher on a countertop circuit. The kitchen island also requires at least one outlet, and it must be GFCI protected.

Other areas requiring GFCI in New Brunswick homes include all outdoor outlets, garage outlets, unfinished basement outlets, laundry room outlets within 1.5 metres of the sink, and any outlet within 1.5 metres of a utility sink or wet bar. Essentially, anywhere water and electricity could meet, you need GFCI protection.

GFCI protection can be provided two ways. You can install GFCI outlets (the ones with the test and reset buttons) at each location, or you can install a GFCI breaker in your panel that protects the entire circuit. GFCI breakers are often more cost-effective when multiple outlets on one circuit all need protection. A GFCI outlet costs \$15 to \$25 for the device plus \$75 to \$150 for professional installation. A GFCI breaker costs \$40 to \$80 plus installation.

Testing matters. GFCI outlets should be tested monthly using the built-in test button. Press the test button — the power should shut off immediately. Press reset to restore power. If the test button doesn't trip the outlet, or if the outlet doesn't reset after tripping, the GFCI has failed and needs replacement. In New Brunswick's humid Maritime climate, GFCI devices can be more prone to nuisance tripping or premature failure, particularly in unheated garages and outdoor locations.

If you're renovating a bathroom or kitchen in your New Brunswick home, TSANB requires all electrical work to meet current code — which means upgrading to GFCI protection even if the original installation didn't have it. A licensed electrician can assess your existing outlets and bring them up to code during the renovation.

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