



Thunder Bay Regional  
Health Sciences  
Foundation

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# Synopsis of Grant Commitments 2022/2023

Thunder Bay Regional Health Sciences Foundation

**2022-001 Portable X-Ray Unit Replacement – Diagnostic Imaging** (C. Willson, Skillen, \$254,725)

**Equipment** upgrade and replacement

The existing portable x-ray unit can no longer be used because one of its removable parts was recently decommissioned. This new digital portable X-ray unit is a sealed unit, which will reduce wear and tear of its parts and has newer technology offering improved image quality and lower radiation dose to the patient and staff.

**2022-002 OR X-Ray C-Arm Replacement – Diagnostic Imaging** (C. Willson, Barrie, Skillen, \$331,143)

**Equipment** upgrade and replacement

C-arms are used by specialized physicians in the operating room for various surgeries as well as procedures in Endoscopy and Ambulatory Care. If a C-arm is out of service, patient procedures can be potentially delayed. This new C-arm will replace an ageing one and features state-of-the-art technology for improved image quality and lower doses of radiation for the patient.

**2022-003 Radio-frequency Ablation (RFA) Generator** (C. Willson, Skillen, \$50,945)

**Equipment** to treat kidney tumours

During radio-frequency ablation (RFA), a thin needle-like probe is inserted into the kidney tumour. The unit generates a high-frequency electrical current, destroying cancer cells with intense, localized heat. Having this equipment in Diagnostic Imaging eliminates the need for patients to have the procedure done in an operating room, which would also potentially result in Hospital admission.

**2022-004 PET/CT Replacement – Diagnostic Imaging** (S. Willson, \$500,000)

**Reconstruction** to accommodate new equipment

The PET/CT is a type of nuclear medicine that uses medical radioisotopes (generated in our cyclotron) to image cancer in the body. These scans help doctors diagnose cancer and develop radiation treatment plans for patients. Our

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current PET/CT scanner is 14 years old and needs to be replaced to avoid delays due to breakdown. Installing the new PET/CT scanner is part of a larger project as the plan includes installing the new scanner in a new room.

#### 2022-005 Capital Equipment – Labour & Delivery Maternal Newborn (Edwards, \$120,000)

##### **Equipment** for infant care in Labour & Delivery

All of these pieces of equipment are vital and required for the standard, safe care of a newborn infant – and all of them are in need of replacing. This equipment includes two infant warmers, a delivery cart for instruments, a resuscitation panel (should an infant require breathing assistance at birth), stirrups, and a bili blanket to reduce jaundice in newborns.

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#### 2022-006 Infant Cribs & Masino Oximeter– Paediatrics (Halvorsen, \$24,500)

##### **Equipment** for inpatient and outpatient infant care

Infant cribs are necessary for basic standard of care. Two new cribs will replace ageing cribs and are equipped with features such as teething rails, anti-microbial coating, head and knee elevation indicators, and shelving for oxygen tank holders. The oximeter monitors oxygen levels of our sickest paediatric patients.

#### 2022-007 Radialis PET Camera – Research Institute (Reznik, Aseyev, \$458,505)

##### **Equipment** for clinical trial investigating unit's effectiveness monitoring chemotherapy in breast cancer patients

The Radialis PET scanner, designed and developed in Thunder Bay, is now in clinical trials. The unit detects breast cancer tumours using molecular imaging, which is a more effective method of diagnosing breast cancer in women who have dense breast tissue. This new unit will initially be used in a study assessing whether or not it can be used effectively to monitor chemotherapy in breast cancer patients. Possible future clinical trials will assess the Radialis PET scanner in monitoring treatment of other cancers such as prostate, rectal, and lung.

#### 2022-008 Automated Medication Dispensing Units - Pharmacy (Desramaux, \$236,000)

##### **Equipment** to improve medication speed and safety

Automated dispensing cabinets are proven to improve medication speed and safety – including at our Hospital. Rather than travel to the pharmacy to manually fill prescriptions, they can be reviewed and approved electronically. Then, the secure cabinet automatically dispenses the right medication and dose to authorized healthcare professionals on that unit. This greatly increases speed and reduces the risk of medication errors, improving both patient safety and comfort. With this grant, outpatient units at the Hospital where medication administration is



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a predominant practice (Cancer Centre, Renal Unit, Surgical Day Care) will now have automated dispensing cabinets.

#### 2022-009 3T MRI Upgrade – Research Institute (Albert, \$67,756.85)

**Equipment upgrade** of current 3T MRI unit and reconstruction of the MRI Suite

The Thunder Bay Regional Health Research Institute is home to many groundbreaking research projects. Many of these need the most up-to-date MRI technology such as research into COVID-19 and brain diseases including Alzheimer's. This upgrade and necessary reconstruction of the MRI suite will extend the useful life of our 3T MRI. In turn, it will help retain our scientists; provide research opportunities for clinicians, students (NOSM, Lakehead University, Confederation College); and allow us to build stronger research partnerships with other research institutions and agencies.

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#### 2022-010 Biochemistry and Microbiology Equipment - Lab (Carr, \$165,051)

**Equipment** to measure alcohol levels and identify infectious diseases

Two new gas chromatographers will replace ageing units. This equipment is essential for detecting dangerous alcohol levels in patients including identifying the type of alcohol, which is key for treatment planning. Annual volume in 2022 is 23,856 compared to 319 in 2006. The automated gram stainer will also replace an ageing unit, and is used to identify infectious pathogens for treatment planning.

#### 2022-011 Patient Wandering & Infant Abductions Systems – Capital Planning (Heron, \$612,000)

**Equipment** to track movements of at-risk patients

Some patients in units 1A, 2A, and 2B are at risk of wandering, which can lead to them getting lost or injured. Bracelets alert staff if these patients wander outside of their rooms. Similarly, infant bracelets help reduce the risk of abduction. When activated, doors in Maternal Newborn automatically close and lock to prevent unauthorized movement of an infant outside of designated areas.

#### 2022-012 Central Water Purification System – Renal Program (Hoard-Mann, \$600,298.94)

**Equipment** for purifying water used during hemodialysis

Water purification is essential for safe hemodialysis for our 200+ patients. Our current system is 18 years old (original to our Hospital) and requires replacing to ensure safe, continuous operation for our dialysis patients in Thunder Bay.



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#### 2022-013 OR 8 (Urology) Integration and Video Upgrade – Surgery (Barrie, \$308,686)

##### **Equipment** for minimally invasive urological surgery

Minimally invasive surgery (MIS) reduces surgery risks, improves outcomes, and reduces hospital stays. New generation systems are integrated, which means they are centrally controlled through one control panel, freeing up nursing staff and streamlining procedures. This new system is ceiling mounted, giving the equipment a better range of movement and freeing up floor space. Integration also improves remote learning opportunities for students and doctors learning new procedures.

#### 2022-014 Vein Viewer 3.0 Flex – Ambulatory Care (Barrie, Vita, \$9,590.93)

##### **Equipment** to detect veins for IV access

Some people have veins that are harder to see, making accessing those veins for IVs more difficult. That can lead to more “pokes” of the needle and greater discomfort to the patient. This new vein finder will help nurses find the vein the first time for fewer pokes and less discomfort.

#### 2022-015 Ophthalmology Microscope – Surgery (Barrie, \$229,222)

##### **Equipment** to replace and upgrade current eye surgery microscope

The ophthalmology microscope is used during cataract surgery (over 2,200 per years) and operations to repair traumatic eye injuries. This new unit replaces an ageing (15+ years) unit. It also represents an upgrade with features that allow up to 16 surgeries per day as well as an external monitor for the team to follow along more closely and for teaching purposes.

#### 2022-016 Cardiac Monitors (2) - Endoscopy (Beck, \$24,453)

##### **Equipment** to monitor vital signs during clinical procedures

During clinical procedures, it is important that a patient’s heart rate, rhythms, oxygen levels and blood pressure be monitored, especially when medications are used to relax patients. This close monitoring helps avoid complications for patients or admission to hospital. These two new cardiac monitors are essential as they will be replacing ageing monitors that are getting more difficult to repair.

#### 2022-017 Ventilators (2) – Respiratory Therapy (Ruberto, Beck, \$102,872.18)

##### **Equipment** to help patients breathe

Patients may have difficulty breathing for a number of reasons including coma, lung injury, COVID-19, asthma, and low blood pressure, among many others. These





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two ventilators will replace ageing units to ensure a full complement of ventilators for our patients from babies to adults.

#### 2022-018 Pulmonary Function Testing Lab – Respiratory Therapy (Ruberto, \$203,790)

##### **Equipment** to test breathing ability

Pulmonary function testing (PFT) involves a series of non-invasive breathing tests to measure flow, lung volume, and gas exchange. It is used to help diagnose certain breathing issues including asthma, and helps doctors monitor patients with chronic pulmonary diseases. This lab replaces an ageing lab from the Port Arthur General Hospital first installed 20+ years ago.

#### 2022-019 Door Card Swipe – Emergency Department (Prete, \$5,970)

##### **Equipment** to secure certain doors in the Emergency Department

Each day, the Emergency Department sees 15 patients on average presenting with mental health and/or addictions issues. Door card swipes will enable the Emergency Department to create a safe space for those at greatest risk and restrict access to these areas for better patient safety.

#### 2022-020 ECG Machine – Cardiac Diagnostics (Taylor, Baysarowich, \$22,940.00)

##### **Equipment** to evaluate heart function

An electrocardiogram (ECG) is the go-to for quick evaluation of the heart to help diagnose issues related to heart function and electrical activity. These include inflammation or enlargement of the heart, damage to the heart muscle, and blockages. “Time is muscle”, so fast, accurate diagnosis is essential. This new ECG machine replaces an ageing unit prone to breakdown to ensure availability for heart patients.

#### 2022-021 Cardiac Catheterization Lab Replacement – Cardiac Cath Lab (Taylor, Gurney, \$2,037,800)

##### **Equipment** for angioplasty and other heart catheterization procedures

Cath labs, which consist of a C-arm, patient table, and control station, typically last 10 years in regular use. We use both cath labs five days per week for scheduled procedures, though they are open 24/7 for emergency procedures including angioplasties. One of these labs is now past end of life and needs replacing. This replacement will also be an upgrade offering the latest technology including integrated systems for more streamlined procedures.

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**2022-022 Cancer Program Capital Equipment – Regional Cancer Care (McConnell, \$263,487)**

**Equipment** for safer, more effective radiation treatment

Our two linear accelerators (linacs) provide radiation treatment for cancer patients. These adaptable units can be upgraded to extend their functional lifetime. This grant will purchase a number of upgrades including new IT hardware, a breath-hold system, an MR image distortion correction system, and a server upgrade. All will help our Cancer Centre provide safer, more effective radiation treatments to our cancer patients.

**2022-023 NAPRA Project – Cancer Centre Pharmacy (Desramaux, \$200,000)**

**Equipment** for safer preparation of chemotherapy compounds

All cancer programs in Ontario must follow National Association of Pharmacy Regulatory Authorities (NAPRA) guidelines for preparing chemotherapy compounds. However, due to evolving guidelines, our facility was no longer compliant. This grant provides for better ventilation, designated preparation areas to decrease risk of cross-contamination, and better room design. Ultimately, these changes will result in safer preparation of chemotherapy compounds for patients and staff.



## Regional Grants

**2022-024 Pentax Colonoscope – Terrace Bay – Regional Cancer Care (Rochon, Gobeil, \$32,885.06)**

**Equipment** to replace ageing colonoscopy equipment

The North of Superior Healthcare Group in Terrace Bay strives to provide closer-to-home colonoscopy and endoscopy services so that patients do not have to travel to Thunder Bay or elsewhere for care. This new colonoscope supports that mission, replacing and upgrading ageing equipment.

**2022-025 Novum IQ Pumps (3) – Fort Frances – Regional Cancer Care (Morand, Cox, Loveday, \$16,038)**

**Equipment** replacement and upgrade for chemotherapy infusion

Regional Cancer Care supports several outpatient chemotherapy programs throughout Northwestern Ontario for closer-to-home care. The program at Riverside Health Care in Fort Frances needs to replace ageing chemotherapy IV



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infusion pumps. These new single-channel pumps are an upgrade in technology, which will improve patient safety.

2022-026 Ultrasound Machine – Fort Frances – Regional Cancer Care (Morand, Cox, Loveday, \$24,510.88)

**Equipment** to support a local PICC line program

Many patients undergoing chemotherapy have a peripherally inserted central catheter (PICC) line for chemotherapy infusion. Ultrasound helps guide the insertion procedure. Previously, patients had to travel to Thunder Bay to get their PICC line inserted. This new and upgraded ultrasound equipment ensures that the cancer program in Fort Frances can continue to perform closer-to-home PICC line insertions, which to date has eliminated that travel for 275 patients.



2022-027 Chemotherapy Infusion Room Renovation – Red Lake – Regional Cancer Care (Gilbart, \$3,064.56)

**Renovations** to improve observation during chemotherapy

Currently the chemotherapy infusion room at the Red Lake Margaret Cochenour Memorial Hospital is separate from the oncology office. This means that patients may be out of sight of staff during certain points of their long treatments. These renovations, including a new observation window, will improve patient safety, allowing staff to continuously observe patients in the rare occurrence of a reaction to the medications.

2022-028 MOPEC Camera HR and Software – Sioux Lookout – Regional Cancer Care (Brinkman, \$36,814.45)

**Equipment** replacement and upgrade for chemotherapy infusion

Biopsies of tumours are important prior to surgery to determine whether or not the tumour is cancerous. The surgical team Sioux Lookout Meno Ya Win Health Centre prepares the slides with biopsy slices under the guidance of pathologists in Kenora before sending those slides to their lab. Currently, the team uses FaceTime on an iPad, which is not an effective method. This new camera equipment will improve efficiency and provide high-quality video and images.