NCHC
Northumberland County
Housing Corporation

Meeting of Board of Directors
Agenda

April 30, 2025
1:30 p.m. – 3:00 p.m.
Northumberland County

1. **Call to Order**
   Victor Fiume, Chair

2. **Territorial Land Acknowledgement**
   Victor Fiume

3. **Approval of the Agenda**

   Recommended Motion:

   "**That** the agenda for the April 30, 2025 regular meeting of the Northumberland County Housing Corporation Board of Directors be approved."

4. **Declaration of Interest**

5. **Approval of Regular Board Meeting Minutes** (attached)
   Minutes of March 26, 2025 Regular Board Meeting

   Recommended Motion:

   "**That** the minutes of the March 26, 2025 Regular Meeting of the Northumberland County Housing Corporation be approved."

6. **Approval of Construction Standards Sub-Committee Meeting Minutes** (attached)
   Minutes of March 3, 2025 Construction Standards Sub-Committee Meeting

   Recommended Motion:

   "**That** the minutes of the March 3, 2025 Construction Standards Sub-Committee Meeting be approved."

7. **Approval of the NCHC Affordable Housing Design Guidelines** (attached)
   Willie Reyns, Major Capital Projects Manager

Recommended Motion:

"**That** the NCHC Board approve the Affordable Housing Design Guidelines – April 2025 as the official design standards for new affordable housing developments and major retrofits undertaken by NCHC, and that staff use these guidelines in the planning, procurement, design, and construction phases of housing projects."

"**Further that** the NCHC Board direct staff to conduct periodic reviews of the guidelines and bring recommended changes to the Board for approval."

8. **129 Kent Street Campbellford Additional Dwelling Unit Review** (attached)
   Willie Reyns, Major Capital Projects Manager

   Recommended Motion:

   "**That** the NCHC Board of Directors direct staff to proceed with the development of a 1-bedroom additional dwelling unit on the property located at 129 Kent Street, Campbellford using a prefabricated volumetric modular home."

   "**Further that** a design & construction budget with an upset limit of $400,000 be approved utilizing funding from the NCHC Housing Reserves to support the further intensification of the site."

9. **NCHC Q1 2025 Variance Report** (attached)
   Kimberly O'Leary, Financial Planning Services Manager

   Recommended Motion:

   "**That** the NCHC Board of Directors receive the NCHC Q1 Report for information."

10. **Housing Operations Report** (attached)
    Julie Kennedy, Developmental, Housing and Homelessness Supervisor

    Recommended Motion:

    "**That** the NCHC Board of Directors receive the Housing Operations Report for information

11. **NCHC Strategic Plan Quarterly Update** (attached)
    Emily Corkery, Developmental, Housing Services Manager

    Recommended Motion:

"**That** the NCHC Board of Directors receive the NCHC Strategic Plan Quarterly Update for information"

12. **Annual General Meeting Agenda and Date** (to be circulated prior to meeting)
Rebecca Carman, General Manager

Recommended Motion:

"**That** the agenda for the 2025 NCHC Annual General Meeting be approved."

13. **Gender Based Violence in Community Housing Sub-Committee Meeting Update – April 24, 2025** (verbal)
Rebecca Carman, General Manager and Daphne Livingstone, Chair, Sub-Committee

Recommended Motion:

"**That** the NCHC Board of Directors receive the verbal update on the Gender Based Violence in Community Housing Sub-Committee Meeting for information."

14. **New Business**
Victor Fiume, Chair

15. **Move to Closed Session**

Recommended Motion:

"**That** the NCHC Board of Directors proceed with the next portion of the meeting, being closed to the public at _____p.m.; and

(1) Further That the meeting is closed to the public as permitted under the Municipal Act Section 239 (2.b) and (2.e) in order to address matters relating to personal matters about identifiable individuals, including municipal or local board employees and litigation or potential litigation, including matters before administrative tribunals affecting the municipality or local board (Landlord and Tenant Board) and that Glenn Dees, Rebecca Carman, Emily Corkery, Julie Kennedy, Matthew Stergios, and Linda Johnson remain present.'

16. **Motion to Rise and Results from Closed Session**

Recommended Motion (1):

"**That** the NCHC Board of Directors rise from Closed Session at _____; and

Further That the confidential resolutions moved in Closed session regarding two matters relating to personal matters about identifiable individuals, including municipal or local board employees and litigation or potential litigation, including matters before administrative tribunals affecting the municipality or local board (Landlord and Tenant Board) is hereby referred to this open session of the NCHC Board of Directors for adoption."

17. Next Meeting

- Wednesday May 28, 2025 at 1:30 p.m.
  Location: In Person – 555 Courthouse Road, Cobourg – Council Chambers

18. Adjournment

Recommended Motion:

"**That** the meeting be adjourned at _____ p.m."

NCHC
Northumberland County Housing Corporation

Meeting of Board of Directors
Minutes

March 26, 2025
2:00 p.m. – 3:30 p.m.
Northumberland County
Zoom Video Conference

Board Members Present (Virtual):
Molly Anthony
Cathy Borowec
Victor Fiume, Chair
Steve Gilchrist
Councillor John Logel
Councillor Mandy Martin
Jacqueline Pennington
Lou Rinaldi
Lindsey Reed

Board Members' Present (In-Person): Chair Victor Fiume, Jennifer Moore

Board Members' Regrets: Daphne Livingstone, Maryam Mohajer-Ashjai, Anneke Russell

Staff:
- Rebecca Carman, General Manager (Appointed by Board)
- Carol Coleman, Associate Director Engineering
- Glenn Dees, Director Health & Human Services
- Jackie Diminie, Customer Service Representative
- Jaclyn McDougall, Customer Service Representative
- Julie Kennedy, Developmental Housing & Homelessness Supervisor
- Rob O'Neil, Facilities Manager
- Willie Reyns, Project Manager
- Matthew Stergios, Executive Assistant to CAO
- Kim O'Leary, Financial Planning Manager
- Negar Pakzadian, Project Manager, Major Capital Projects

1. **Call to Order**
   - Chair Victor Fiume called the meeting to order at 2:01 p.m.

NCHC
Northumberland County Housing Corporation

2. **Territorial Land Acknowledgement**
   Victor Fiume

3. **Approval of the Agenda**

   Moved by: John Logel
   Seconded by: Lou Rinaldi

   "**That** the agenda for the March 29, 2025 regular meeting of the Northumberland County Housing Corporation Board of Directors be approved."

   Disposition: **Carried**

4. **Declaration of Interest**

   - Cathy Borowec declared a disqualifying interest (see attached Declaration of Interest form) with regards to Closed Session agenda item 5 relating to a position, plan, procedure, criteria or instruction to be applied to any negotiations carried on or to be carried on by or on behalf of the municipality or local board (473 Ontario Street)

5. **Approval of Regular Board Meeting Minutes** (attached)
   Minutes of January 29, 2025 Regular Board Meeting

   Moved by: Steve Gilchrist
   Seconded by: Cathy Borowec

   "**That** the minutes of the January 29, 2025 Regular Meeting of the Northumberland County Housing Corporation be approved."

   Disposition: **Carried**

6. **Approval of Construction Standards Sub-Committee Meeting Minutes**
   Minutes of November 29, 2023 Construction Standards Sub-Committee Meeting

   Moved by: Cathy Borowec
   Seconded by: John Logel

   "**That** the minutes of the November 29, 2023 Construction Standards Sub-Committee Meeting be approved."

   Disposition: **Carried**

NCHC
Northumberland County Housing Corporation

7. **Construction Standards Sub-Committee Meeting Update – March 3, 2025** (verbal)
   Rebecca Carman, General Manager

   - Rebecca Carman provided an update on the construction standards Sub-committee meeting that took place on March 3. Follow-up meeting scheduled to finalize report.

   Moved by: Mandy Martin
   Seconded by: Cathy Borowec

   "**That** the NCHC Board of Directors receive the verbal update on the Construction Standards Sub-Committee Meeting for information."

   Disposition: **Carried**

8. **Gender Based Violence in Community Housing Sub-Committee Meeting Update – March 21, 2025** (verbal)
   Chair, Sub-Committee

   - The sub-committee met last week to discuss key priorities.
   - In the process of creating a task list to manage issues.
   - Working group will have a positive impact in leading the work on addressing gender-based violence.

   Moved by: Lindsey Reed
   Seconded by: John Logel

   "**That** the NCHC Board of Directors receive the verbal update on the Gender Based Violence in Community Housing Sub-Committee Meeting for information."

   Disposition: **Carried**

9. **2024 Year End Financial Update**
   Kimberly O'Leary, Financial Planning Services Manager

   - Kimberly O'Leary provided an update on 2024 year-end financials, noting numbers have not been finalized while audit is underway.
   - Nothing unexpected in the year end financials, highlights include 129 Kent St. purchase, Campbellford.

Moved by: Lou Rinaldi
Seconded by: Mandy Martin

"**That** the NCHC Board of Directors receive the 2024 Year End Financial Update for information."

Disposition: **Carried**

10. Facilities Update: 2024 Project Update and 2025 1st Quarter Report
Rob O'Neil, Facilities Manager

- Rob O'Neil provided an update on 2025 1st quarter report.
- Highlights include the addition of a 2nd hot water tank.
- 40 unit renovations completed in 2024, including 28 full renovations. 25 units in 2025 to date.
- Installing new lock system, higher security and more control over who has keys. New system will be rolled out to all NCHC buildings going forward.
- Funding requested for Kent St. foundation repair work, sidewalk, hot water tank, flooring.

Moved by: Jacqueline Pennington
Seconded by: Cathy Borowec

"**That** the NCHC Board of Directors receive the Facilities Update: 2024 Project Update and 2025 1st Quarter Report for information; and

Further That the NCHC Board of Directors receive this report as information and approve the requested budget of $75,000 for renovation work at 129 Kent Street, Campbellford, to be funded through CMHC Affordable Housing Fund for Renovations of NCHC buildings."

Disposition: **Carried**

11. Elgin Park Redevelopment Progress Update
Willie Reyns, Major Capital Projects Manager

- Willie Reyns provided an update on the construction of the Elgin Park Affordable Housing Redevelopment to date.
- Building #3 Exterior siding is complete and eavestrough installation ongoing. Painting flooring and millwork complete. Final electrical and plumbing connections are in progress.
- Building #4 Exterior siding and fascia installation ongoing. Insulation and boarding are complete and finish drywall, painting and flooring are

Moved by: Steve Gilchrist
Seconded by: John Logel

"**That** the NCHC Board of Directors receive the Elgin Park Redevelopment Progress Update for information."

Disposition: **Carried**

12. **Update to Rent Supplement Program Signing Authorities** (verbal)
Rebecca Carman, General Manager

- Previous resolution indicated rent supplement addendum could be signed by housing supervisor, that position has been removed.
- Requesting title change for signing authorities.

Moved by: Mandy Martin
Seconded by: Lindsey Reed

"**That** the NCHC Board of Directors confirm signing authorities for Rent Supplement programming as follows:

- Existing signing authority for the NCHC Board of Directors for creation of new rent supplement agreements
- Delegated authority to the Financial Planning Manager and Housing and Homelessness vices Operations Supervisor or delegates for all agreement addendums."

Disposition: **Carried**

13. **New Business**
Victor Fiume, Chair

- No new business

14. **Move to Closed Session**

Moved by: John Logel
Seconded by: Jennifer Moore

"**That** the NCHC Board of Directors proceed with the next portion of the meeting, being closed to the public at 2:29 p.m.; and

Further That the meeting is closed to the public as permitted under the Municipal Act Section 239 (2.k) in order to address a matter relating to a position, plan, procedure, criteria or instruction to be applied to any negotiations carried on or to be carried on by or on behalf of the municipality or local board (473 Ontario Street) and that Glenn Dees, Rebecca Carman, Emily Corkery, Julie Kennedy, and Matthew Stergios, Jackie Diminie, and Jaclyn McDougall remain present."

Disposition: **Carried**

15. Motion to Rise and Results from Closed

Session Recommended Motion (1):

Moved by: Mandy Martin
Seconded by: Steve Gilchrist

"**That** the NCHC Board of Directors rise from Closed Session at 2:42 p.m.; and

Further That the confidential resolution moved in Closed session regarding a matter relating to a position, plan, procedure, criteria or instruction to be applied to any negotiations carried on or to be carried on by or on behalf of the municipality or local board (473 Ontario Street) is hereby referred to this open session of the NCHC Board of Directors for adoption."

Disposition: **Carried**

16. Next Meeting

- Wednesday April 30, 2025 at 1:30 p.m.
  Location: In Person – 555 Courthouse Road, Cobourg – Council Chambers

17. Adjournment

Moved by: Lindsey Reed
Seconded by: Molly Anthony

"**That** the meeting be adjourned at 2:42 p.m."

Disposition: **Carried**

Northumberland County Housing Corporation (NCHC)
Report to Board

April 30th, 2025

Subject: Approval of the NCHC Affordable Housing Design Guidelines

Prepared by: Willie Reyns, Manager, Major Capital Projects, Public Works

Issue

Northumberland County Housing Corporation (NCHC) has developed the Affordable Housing Design Guidelines (AHDG) to support the development of high quality, efficient, and accessible affordable housing across the County. These guidelines now require Board approval to become standard reference for all future NCHC housing development projects.

Recommendation

That the NCHC Board approve the Affordable Housing Design Guidelines – April 2025 as the official design standards for new affordable housing developments and major retrofits undertaken by NCHC, and that staff use these guidelines in the planning, procurement, design, and construction phases of housing projects.

Background

The NCHC Asset Management Plan (2023) identified the need for consistent, high-quality, and sustainable approaches to housing development. The Affordable Housing Design Guidelines (AHDG) were created to standardize minimum acceptable standards for affordable housing projects, ensuring safety, accessibility, durability, energy efficiency, and integration within the broader community.

Analysis

The guidelines encompass a wide range of housing development considerations including:

- **Regulatory Compliance**: Align with all relevant standards (Ontario Building Code, Fire Code, AODA, CSA).
- **Site Development**: Promote environmentally conscious and accessible designs along with focusing on sites that are in proximity to transit and schools and public amenities.

- **Built Form**: Incorporate durable, efficient building elements, universal accessibility, and safety features.
- **Building Materials**: Specify minimum standards for structural, interior, and exterior components to improve lifecycle performance.
- **Energy Efficiency**: Encourage sustainable construction practices and technologies.
- **Accessibility & Adaptability**: Define standards for fully accessible and adaptable units to accommodate residents of all abilities.
- **Security**: Includes Crime Prevention Through Environmental Design and surveillance guidelines.

These guidelines were developed by the NCHC Construction Standards Subcommittee, with review and input from County staff, and are aligned with best practices in affordable housing development. The subcommittee approved the guidelines on April 10, 2025. Their adoption will promote consistency across future projects and support NCHC's mission to provide safe, sustainable, and inclusive housing.

Financial Impact

There is no immediate financial impact from approving the guidelines. However, the standards may influence capital project budgets by encouraging higher-performance materials and systems. These upfront costs are expected to be offset over time by reduced maintenance, increased energy efficiency, and improved building performance.

Conclusion

It is recommended that the Board approve the Affordable Housing Design Guidelines – April 2025 as the official design standards for NCHC projects. The AHDG provides a comprehensive framework that aligns with NCHC's values of sustainability, accessibility, and community integration. Their approval will guide the development of long-term, cost-effective, and resident-centered housing.

Affordable Housing Design Guidelines

April 2025

Contents

1. INTRODUCTION

Northumberland County Housing Corporation (NCHC) provides a vision and strategy to revitalize housing communities through future redevelopment and growth. The NCHC Asset Management Plan (AMP) was developed in 2023 to ensure the continued support and improvement of services for all tenants.

These Affordable Housing Design Guidelines (AHDG) include both requirements and recommendations to guide staff, consultants, and contractors throughout the design and construction process of affordable housing for NCHC. The AHDG define the nature, functions, and elements that combine to form the built environment of NCHC affordable housing communities. The AHDG are intended to promote the development of attractive, efficient, and functional housing.

The AHDG have been established as minimum acceptable standards relating to materials, products, workmanship, and services. Staff, consultants, and contractors are encouraged to go beyond these requirements and recommendations to foster innovation, efficiency, and functional affordable housing developments that are to be compatible to the surrounding neighborhood and that provide support services to allow families and individuals to live independently.

The AHDG have been developed for new construction of affordable housing. Retrofit of existing housing should strive to meet these guidelines, but it is understood that physical and costing limitations may mean that this is not feasible to meet all these guidelines.

The guidelines will be reviewed by County staff on a regular basis. Any recommended changes to the guidelines will be brought to the NCHC board for approval.

2. REGULATORY REQUIREMENTS

All services, processes, products, and workmanship as required shall conform to the current applicable standards, codes, and regulations of authorities having jurisdiction. Consider all the references and documents such as standards, codes, specifications, and applicable instructions referred to in the document to be the latest published and/or issued editions at the date of submission of the proposal, unless otherwise stated in the document or as required by the authorities having jurisdiction.

The AHDG constitute minimum acceptable standard of services, materials, products, and workmanship. Ensure that materials, products, and workmanship meet or exceed requirements of the reference standards specified.

In the event of conflict between documents specified herein, the most stringent requirements shall apply. Where no standards are referred to, provide services, products, materials, and workmanship that meet or exceed the minimum requirements of the applicable standards in North America.

For reference purposes, applicable standards and regulations shall include, but not be limited to: Canadian Standards Association, Ontario Building Code, Ontario Fire Code, and Accessibility for Ontarians with Disabilities Act.

3. SITE DEVELOPMENT

The purpose of this Section is to identify the desirable characteristics of the exterior built environment for NCHC communities. Consider building locations on the site carefully in the context of any negative impact on the site's environmental and geographic characteristics. Select suitable building locations that minimize site disruption.

The nature of adjacent lands and developments should be considered in relation to the proposed new build. This requires a careful review of the buildings' fit into the proposed site while restricting the potential negative impact on the existing neighbouring properties, roadways and sidewalks, parks and open spaces and properties. The desired outcome is affordable housing that is truly integrated into the community.

3.1. Site Servicing

All designs should provide the required supplementary equipment and services, such as gas, water and hydrometers, cable, telephone and other service appurtenances (accessories necessary for the efficient operation of the services) that are to be coordinated and integrated into the project.

3.2. Transportation

Where possible to consider, affordable housing buildings should be located within walking distance of public transportation routes, schools, recreational facilities, shopping and services and should support the planning and land-use policies of Northumberland County and member municipalities.

3.3. Environmental Protection

Affordable housing building designs should demonstrate an intention to minimize environmental impact with the use of products with projected high-performance standards, long life cycles, and high efficiencies; and where possible, recycle and/or

salvage construction, demolition and land clearing waste. Buildings should be designed to conserve existing natural areas by restoring any damaged areas and incorporate new areas to provide habitat and promote biodiversity.

3.4. Built Environment

Design of the building should take into consideration the potential negative impacts of adjacent properties including, but not limited to, overshadowing, overlooking, and wind-tunnel effects. Ensure that the building's height and mass is appropriate to the type and nature of adjoining development. The building should be oriented to take into consideration climatic factors where there are maximum benefits to be derived from natural lighting, energy efficiency (e.g. solar heat gain), and protection from weather elements. Consider preparation for the installation of a future solar thermal system or solar photovoltaic system. Areas that are open to the public (e.g. pathways, entrances, lobbies) will be designed for universal accessibility.

Mechanical equipment, elevator, and telecommunications rooms should be located on the ground floor or in a basement and should be screened from street view if applicable and accessible without interfering with leased areas. Transformers should be integrated into the site plan creating minimal impact on the building's operational and functional needs. Utilities and entrances to utility spaces should be secured and protected from vandalism.

Emergency generators shall be included per the Ontario Building Code to provide power for essential building services.

3.5. Exterior Space

Utilize the site's existing features in creating compatible and well-defined amenity areas for adults and/or child-oriented activities. Minimize overshadowing of amenity spaces by neighbouring buildings and create shading through natural means (e.g. deciduous tree planting).

The exterior space of the building should comply with Crime Prevention Through Environmental Design principles for crime prevention. Well-defined, universally designed public places (e.g., street, garden, park, walkway, mews, or squares) should be created through the massing of built-form and creating residual, unusable spaces should be avoided.

Play areas should be inclusive with at least 50% accessible features. Consider locating play areas adjacent to communal laundry room, lobby, or amenity space, with good sightlines to play area.

Consider allocating areas such as pathways and outdoor exercise space to promote active living.

3.6. Landscaping

Landscaping should be designed to complement the development and amenity spaces, enhance the image of the neighbourhood, and address practical considerations such as wind protection, buffering, and shade. Consider planting hardy, water saving, indigenous species, especially in passive areas, to reduce the demand for irrigation and maintenance.

Develop a site plan that utilizes and complements existing landscaping features and topography. Maintain part of the site in its natural state where practical and appropriate.

Use landscaping for practical benefits and solutions, such as:

- A colonnade of trees for protection from sun, rain, wind and noise.
- Landscape elements such as trees and shrubs to define circulation edges, which will also be a benefit for microclimatic conditions.
- Incorporate landscaping elements to provide maximum shade for hard surface areas.
- Design site-landscaping layout to accommodate and support all desired and required outdoor activities, such as garden plots and/or outdoor exercise areas.
- Consider the ease of maintenance of grounds (hard and soft surfaces) and snow removal.

For areas that are to be designated for snow storage, consider snow drifting patterns, and consider the use of planting and screening to mitigate drifting. Design landscape layout with sufficiently wide mowing strips between lawns, planting beds, buildings, retaining walls, planters or steps to avoid the need for trimming the edge of grass areas to reduce maintenance requirements.

3.7. Storm Water Management

Provide low-impact design options such as detention ponds, emergency spillways and/or wetlands for storm water management. The amount of storm water runoff should be limited by encouraging on-site infiltration and by designing swales and permeable surfaces.

3.8. Signage

Provide a comprehensive signage system that considers the orientation, location, direction, and distance of signage based on the physical layout of the project. Property identification signs should be located at the main entrance and should include the site address. Ensure that all exterior signage is durable, low maintenance, and vandal resistant. Provide internal way-finding signage in all lobby areas and at each elevator location. Construction signage should include the project name and appropriate contact information.

3.9. Access and Circulation

Vehicular and pedestrian entrances should be universally accessible and designed to evoke a sense of arrival (e.g., drop-off, canopy, or change of hard surface material from concrete to interlock and/or stone).

Internal road networks should be designed to enable vehicular traffic to enter and exit the site while travelling in a continuous forward direction to minimize vehicle turnarounds. This feature shall extend to the entry/exit points at the main roadway and to the drop-off and parking area(s), where possible. Ensure that the road network and flow of traffic are designed to complement the development. Attempts should be made to avoid the glare of car headlights into the windows of ground and/or first floor units.

Circulation areas should be designed with wide multi-purpose pathways for different users (e.g., children on bicycles, pedestrians and barrier-free needs). The layout of walkways should follow natural pedestrian traffic patterns with a hard surface such as concrete, unit pavers, natural stone pavers, or other suitable material to discourage routing across lawns and play areas.

Consider the design of garbage and move-in/out areas to ensure ability of large trucks to manoeuvre.

3.10. Surface Parking

Surface parking must comply with municipal parking standards, including meeting barrier-free parking requirements.

Parking spaces for residents and visitors should be located away from children’s play area, if applicable. Illuminate all outdoor parking areas with direct illumination towards the paved areas only and not into any adjacent buildings. Make provisions for pedestrian routes through parking area(s) with sightlines at intersections of walkways and vehicular traffic. Demarcate and provide appropriate lighting on pedestrian routes.

Snow storage and removal should be considered when designing parking area(s) and access routes.

Consideration should be given for providing an area for a maintenance vehicle or contractor to park that does not interfere with traffic flow on the property.

4. BUILT FORM

The purpose of this Section is to establish the minimum standards and characteristics required for the building and its interior spaces. Buildings should be designed to be low maintenance and durable, achieve optimal energy efficiency (i.e. limits energy use), and maintain a comfortable interior environment. New buildings should be universally accessible and provide a sense of security to residents and visitors while meeting quality design expectations to promote good energy conservation practices, environmental protection, pedestrian movement, vehicular functionality and sustainable design considerations. Buildings should also be designed with consideration for the health and safety of staff and maintenance workers.

4.1. Safety and Security

The principles of Crime Prevention Through Environmental Design should be incorporated into the design of the building layout. Exterior circulation and built forms routes should be designed in a manner that prevents the creation of areas that lead to potential confusion, entrapment, dead ends or hidden spaces. Adequate lighting needs to be provided at public and secluded areas.

All “Exit” lights should be LED-type and securely mounted on walls or ceilings above exit doors.

Design for the installation of surveillance cameras and alarm signal devices to be located at the exterior building entrance(s), at the front & back lobbies, and in other locations as specified by the NCHC. Ensure that the system is compatible with Northumberland County security systems.

4.2. Accessibility

The NCHC supports designs that are inclusive of all residents and allow basic access to everyone regardless of age and level of mobility. Beyond consideration of only mobility impairment, creating spaces that have universal accessibility accommodates both immediate and future needs of residents and visitors to the building. Universal design

applies a goal-oriented approach. It defines the outcomes in ways that can be measured and applied to all design domains within the constraints of existing resources.

- Body fit: Accommodating a wide range of body sizes and abilities.
- Comfort: Keeping demands within desirable limits of body function and perception.
- Awareness: Ensuring that critical information for use is easily perceived.
- Understanding: Making methods of operation and use intuitive, clear and unambiguous.
- Wellness: Contributing to health promotion, avoidance of disease and protection from hazards.
- Social integration: Treating all groups with dignity and respect.
- Personalization: Incorporating opportunities for choice and the expression of individual preference.
- Cultural appropriateness: Respecting and reinforcing cultural values, and the social and environmental contexts of any design project.

The design of new buildings that target housing for persons with disabilities should provide accessible units with features and design details above the minimum Ontario Building Code requirements and Accessibility for Ontarians with Disabilities Act and strive to meet universal design criteria.

4.2.1. Fully Accessible Units

The following guidelines will apply to fully accessible units.

- Prior to the start of each new build, the NCHC will establish a target for the number of accessible units within the development.
- It is desirable to have fully accessible units provided in a range of unit sizes with sizes guided by waitlist trends and needs.
- Accessible units should be scattered throughout the building with other non-accessible units.

- Exterior routes to buildings, entranceways and common areas within buildings should meet accessibility requirements.
- All rooms should have a clear floor turning space of at least 1700 mm x 1700 mm square.
- Doorways
    - In common spaces, entry doors should have power door operators.
    - All doors should have flush thresholds or a maximum height difference less than 12 mm.
- Accessible Kitchens (where practical and possible)
    - Kitchens shall be designed to be as open as possible.
    - Cupboards can be mounted on a track system or on legs that are adjustable in height.
    - It is recommended that designers consider providing under-counter storage with drawers (on full extension glides) moveable on wheels to free up counter space for working spaces.
    - Accommodate the installation of double door fridges.
    - Accommodate a separate stove top and wall oven.
    - Accommodate the future installation of stove tops with a height of 860mm, front controls, clear knee space below and 300 mm on each side of stop top at same height for ease of cooking and safe operation.
    - Accommodate the future installation of wall ovens with doors that swing sideways and with front controls.
    - Kitchen sinks should be a maximum of 860 mm above finished floor, have open knee space below, insulated pipes or shallow cupboards under sink.
    - Provide a minimum of 765 mm (30") width for future installation of refrigerators and stoves.
    - Kitchen storage should be accessible from a seated position.
- Accessible Bathrooms

- Where provided, bathtubs should have edged seating around tub and non-slip surface.
- Shower controls should be lever type, easy to control and at the appropriate height for someone seated.
- Install mixing valves that limit the water temperature.
- Shower head should be handheld or adjustable to variety of heights.
- Bathrooms should have a clear floor turning space of at least 1700 mm x 1700 mm square.
- Flooring should be slip-resistant and preferably ceramic tile (or comparable).
- Provide raised toilet seats with a minimum height of 450 mm +/- 10 mm.
- Provide storage options for bathroom supplies at a variety of heights.
- Sinks should be 860 mm above finished floor, have a clear space below and insulated pipes or shallow cupboards below.
- Units with two full bathrooms should have one bathtub and one roll-in shower.

- Balconies:
  - If provided, balcony thresholds should be level or a maximum of 12 mm high.

4.2.2. Adaptability:

Adaptable features allow units to be easily modified in the future to meet peoples' changing needs over time allowing them to age in place or to accommodate different needs. This will be more cost effective and efficient over the long term, bearing in mind the Human Rights Code.

All units which are not fully accessible should consider the following measures for future adaptability:

- Hallways that are a minimum of 1100 mm in width.
- Plumbing rough-in for future walk-in or roll-in shower.
- Electrical rough-ins at accessible suite entry doors for the future installation of power door operators.

- Roughing in blocking from 500 mm to 1200 mm above finished floor along entire length of bathtub/shower and all walls adjacent to the water closet for the future provision of grab bars.

- Provide flush door thresholds to accommodate persons with disabilities.

4.3. Structure

The NCHC encourages innovative designs that are durable, low maintenance, energy efficient, and affordable. Affordable housing built under these guidelines must:

- Be similar in size and amenities to other types of housing in the community.

- Improve environmental performance of buildings based on current established principles, practices, materials, and standards.

- Promote good energy conservation practices.

- Have durable materials and equipment at the time of construction which will reduce maintenance and replacement costs.

4.4. Building Envelope

The NCHC requires new buildings to meet or exceed the principles of LEED Silver standard. Consider exceeding the LEED Silver standard, where possible.

The building envelope should be designed to achieve low air leakage, eliminate thermal bridging, and reduce summertime solar heat gain and winter heat loss. Where possible, consider the building orientation and incorporating shading devices to achieve these goals. Also explore passive and active solar possibilities.

Use a wall type construction which is durable, low maintenance, and provides a proper pressure equalized rain screen through use of sufficient venting. Faced sealed joints for precast concrete panels and EIFS (exterior insulation and finish system) are not allowed; instead use two-stage seals in joints that provide for water drainage at the source.

Include architectural features, such as outward projection of the roof, cornice, sills, and drip ledges to prevent large scale wetting of the building envelope. The building envelope should visually integrate with the surrounding neighbourhood to reduce impact on community members.

To prevent thermal bridging conditions as well as align thermal mass of wall insulation, use thermal breaks in door and window frames and insulate floors over all unheated spaces. Ensure the air/vapour barrier retardant system within the walls is continuous, properly connected to window frames, and installed on the warm side of the wall. Ensure that the location of the air/vapour barrier is not creating a vapour trap for concealed condensation, and that it is rigid and made of or supported by structural components capable of withstanding wind loads and thermal expansion.

4.5. Heating, Ventilation and Air Conditioning (HVAC)

HVAC systems should be designed to achieve optimal energy performance on equipment and materials selected. Ensure uniform conditioning (both heating and cooling) is provided year-round throughout the building and in all units. Materials and equipment should be low maintenance and selected from a reputable manufacturer with the ability to provide competent and thorough technical services through local a representative with the ability to deliver spare parts expeditiously.

Building designs should provide for adequate access and service space for all major mechanical equipment (such as boilers, chillers, cooling tower, air handling units and fans) and for motorized dampers and actuators, control sensors and devices, humidifiers, coils (e.g., heating, cooling and reheating), drain pans, isolating valves, drain valves, filters, strainers, and expansion joints.

4.6. Exhaust Fans

Provide direct drive exhaust fans, complete with louvers and shutters. Ensure louvers are anodized or powder-coated aluminum construction and wall mounted hood design on the outside wall. Provide inline blowers for extraction of dryer vents for the common laundry facility and ensure that all exhaust fans are vented outside.

Exhaust fans should be ceiling-mounted, energy-efficient, and high-volume. Bathroom exhaust fans should also be motion/humidity activated with timing.

4.7. Ductwork

Design all ductwork with straight, short runs with few turns and a maximum efficiency of airflow. Use rigid ducting of at least 100 mm (4 in.) diameter for bathroom fans; for longer runs provide 150 mm (6 in.) diameter. Seal all ductwork joints with aluminum duct tape to prevent air, moisture and noise leakage. Ensure any duct running through unheated areas or vented outside is insulated and all joints are sealed.

4.8. Plumbing and Drainage

One water meter should be provided for each complex to simplify the mechanical system and minimize the number of hot water tanks and pressure tanks required for every individual unit. Design domestic hot water system with redundant heater capacity to ensure continuous supply of hot water. Provide high efficiency water heaters and insulated storage tank(s). Ensure all shut-off valves are clearly marked and easily accessible from common corridors.

Provide each unit with a main water shut-off valve and ensure each hot and cold-water supply fixture within the unit has an easily accessible isolation valve.

Units should not have integrated drain stops in fixtures, Floor drains should be provided in all barrier-free bathrooms and public bathrooms.

Kitchens located in all common/multipurpose rooms should be provided with a rough-in for a dishwasher. Laundry facilities should have adjustable water mixing valves. Clean-outs should be located on every third floor for accessing and cleaning drainage stacks.

4.9. Electrical

Solar power systems or other energy conservation systems should be considered to minimize operational costs associated with electricity use.

Consider individual revenue-grade suite metering for each unit, common laundry facility, common amenity space, and exterior use. Provide a minimum 100-amp electrical breaker panel for each unit. Where required, electrical rooms, should be independent from all other spaces and should be located in one area as far as possible from residential units, adjacent to other service rooms, and preferably accessible by a service corridor. Ensure that adequate ventilation is provided in transformer vaults and switchgear rooms to prevent overheating and equipment failure and consider heat recovery options for energy efficiency.

The building design should ensure all electrical conduits are concealed (i.e. surface mounted conduits will not be permitted). Rough-ins for telecommunications equipment (e.g., computer, telephone, cable, etc.) and audiovisual equipment should be provided in all common areas. A rough-in box for fiber optic cable should be provided in each primary bedroom closet (consult provider for sizes of the rough-in).

Consideration for future electric vehicle charging stations should be made (e.g., rough-in conduits, electrical panel sizing, etc.).

4.10. Lighting

All unit entrances should have overhead lighting fixtures. All parking areas, parking drop-offs, building entries, ramps, stairs, and walkways should be well lit with uniform lighting levels along all pedestrian routes. Light fixtures should be vandal-resistant, of sturdy construction and low maintenance, and non-institutional in appearance.

Install ENERGY STAR-qualified low power options for interior and exterior lighting fixtures, appliances and equipment. All fixtures are to be LED and in accordance with NCHC standards for colour and temperature. Provide motion sensors for lighting control service rooms. The number of types of light fixtures should be minimized to facilitate future maintenance.

4.11. Roofing

Roof lines should be designed and sloped to accommodate proper drainage, reduce snow build-up around mechanical equipment and air intakes/exhaust outlets, and eliminate snow slides and icicle build-up that could threaten pedestrians during winter months. Install snow guards and/or heat tracing on eaves of high-sloped roofs. For flat or low slope roofs, use ENERGY STAR-rated (highly reflective) and high emissivity-type of roofing for the roof surface.

Select materials used in roof assemblies for compatibility with physical and thermal behavior. Preference shall be given to the assemblies that use materials having proven long life-cycle expectancies and low maintenance requirements.

Sloped metal roofs should be designed as decorative building features to disguise mechanical penthouse and should consider the need for water protection to the walls below. Eave protection should be provided for six feet from the edge to reduce ice-damming effect. Provide effective passive ventilation of the attics (e.g., ridge vents, roof vents) and soffits. Provide baffle walls at the soffits to prevent blockage by insulation.

Design flat (i.e. low-sloped membrane) roofing system assemblies capable of lasting at least 20 years. Adequate protection to exposed roofing systems (i.e. materials and surfaces) should be provided to compensate for negative effects such as uplift forces due to wind and floatation; differential thermal movements; roof traffic due to servicing roof-mounted equipment, access to service room(s), window washing and maintenance; and all work performed post-roof installation. Roof ballast material should be a light colour to reduce heat build-up.

Roof-mounted equipment should be placed such that fall protection measures are not required during regular maintenance. A protective railing is required at all maintenance

walkways as per the Occupational Health and Safety Act. Ensure that all service walkways are suspended on neoprene spacers and obstructions are bridged at walkway locations. Sufficient roof anchors should be installed for suspended equipment and rolling stages normally used for window cleaning operations, general cleaning, repair, painting, maintenance and inspections.

4.12. Windows

Windows should be recessed into the building's façade to ensure minimal temperature heat loss or gain of the glazing, create a solid expression and to increase shadow lines for visual interest. The design and proportion of window openings should be relative and adequate for the room's intended use and located according to building orientation to maximize natural light and minimize need for artificial lighting. When designing windows with mullions (i.e. horizontal and vertical dividers), consider the impact of their placement on views to the exterior from both sitting and standing positions. Provide restrictors to limit the opening for child safety requirements.

Windows should be energy efficient and should be tested and certified by the Canadian Standards Association. They should have above-average ratings for air filtration, water penetration, and strength from wind load. Exterior windows will be double-glazed, sealed units with 6 mm (1/4 inch) thick inner and outer pane. Triple pane windows should be considered, where budget permits.

Provide thermally broken frames with provisions for internal drainage to exterior. Provide sills with drips clear of wall cladding and with sill deflectors and ensure windowsills/ stools are constructed out of a moisture resistant material. Provide proper weather seal between framing of opening and wall.

4.13. Door Design

Heavy-duty, commercial grade, aluminum doors should be provided for the building vestibules. Ensure that the common entry doors are power-operated sliders with a motion detection sensor operation system and auto-lock feature.

All exterior doors should have heavy-duty weather stripping, kick plate, and a metal-covered doorsill. Exterior emergency exit doors should not have any exterior hardware or glazing.

Main entrance doors to units should be fire rated, insulated metal doors. Interior unit doors should be solid core doors without decorative laminate finishes. All unit doors should have lever handles as opposed to knobs.

4.14. Common Building Entrance

Where applicable and practical building entrances should create a sense of entry with distinctive project identity. The exterior drop-off area should be visible from the front lobby. Entry vestibules should provide protection from weather elements by recess or a detailed and finished canopy for the front and rear building entrances. Ensure that vestibule doors and components are manufactured and installed so that when in closed position, they:

- Control air leakage and resist wind loads.
- Provide required thermal performance and reduce thermal conductivity.
- Resist forced entry.
- Provide easy and smooth operation.

A private telephone intercom system should be installed for primary entrances. A rental telephone system is not acceptable.

Provide built-in seating that is durable and vandal-resistant for the front lobby.

4.15. Security Camera Layout:

Security camera coverage inside the building should adequately capture common areas (Hallways, lobbies, common rooms, laundry rooms, tenant storage areas, etc) with overlapping fields of view with a focus on minimization of blindspots. Exterior perimeter of the building should be captured thoroughly including all entrances, parking areas, sidewalks, garbage areas etc. Exterior cameras should be specified to have minimum 4K resolution with low light or full colour night capability. If vulnerable to attack (being installed below 12ft off ground) vandal domes should be used. Interior cameras should be specified as minimum 1080p and vandal dome models where vulnerable to attack. All camera’ s must be IP cameras and utilize CAT6A cable (10Gbps).

All cameras shall be terminated to a secure room accessible to maintenance staff only.

4.16. Door Security:

Design of the floorplan should encourage secure point(s) of entry for tenants and guests. Emergency exits should be equipped with exit only panic hardware, preventing tenants from accessing the building through non approved points of entry (main entrances, tenants with patios if they wish to use that as their main entrance, etc.). Also, any common areas with exterior doors should have automatic closing devices (door

closers, automatic openers, or spring hinges etc.) to ensure the building remains secure.

All building exterior, suite entrances, and designated interior access doors shall be equipped with card access control readers. Door position sensors and door prop alarms shall be provided for all exterior doors only, integrated into the access control system and included in the design. The access control system shall include the capability for secure remote management and monitoring from offsite locations via VPN. (Virtual Private Network)

4.17. Main entrance Intercom:

In addition to proper security cameras, main entrance should come equipped with an intercom system that allows tenants to be contacted using their phone. Intercom will allow for the remote unlocking of the main entrance for guests.

4.18. Materials/Finishes

The variety of interior materials and finishes used should be limited to reduce the complexity of future maintenance. All products used shall be environmentally friendly, durable, aesthetically pleasing, and resilient.

Units are required to be finished with painted drywall and ceilings using low-volatile organic compound (VOC) paint. Carpet flooring should be avoided. Mock-up units should be provided to allow NCHC to review the quality of workmanship and finishing criteria before proceeding with the remainder of the units.

4.19. Acoustical

Building layouts should be designed to minimize noise conflicts between public, service, and private areas both on the interior and exterior sides.

Sound transmission classes should exceed the Ontario Building Code requirements:

- Between residential units: Minimum Sound Transmission Class (STC) of 55.
- Between residential units and other (non-residential) spaces: Minimum STC 55.
- Between residential units and mechanical or electrical rooms, emergency generator room, elevator room and/or elevator shaft (hoist way), any service room and refuse chute, exterior wall assembly: Minimum STC 60.
- Rating for floor assembly: Minimum Impact Insulation Class (IIC) of 50.

4.20. Equipment

All mechanical equipment installed in buildings should be provided with lockout instructions. Equipment should be installed to allow for convenient access on all sides for maintenance and operations staff.

4.21. Furnishings

Furnishings for common areas will be finalized by the NCHC on a project-by-project basis. At a minimum, design common areas to accommodate furniture such as sofas, tables, chairs, benches, shelving, waste receptacles, plants, bulletin boards, and artwork.

4.22. Stairwells

Stairwells should have natural daylight where possible. The open area at the bottom of the stairwell should be secured to prevent loitering.

4.23. NCHC Staff Office

For larger buildings or complexes, an office for NCHC staff should be located on the main floor, easily accessible from the front lobby. The office should be able to accommodate two staff members with furniture as well as provide seating for visitors.

4.24. Amenity Space/Multipurpose Room

Any amenity spaces or multipurpose rooms are required to be universally accessible. These spaces should consider including the following:

- Moveable partition walls.
- Storage and coat closet.
- Intercom with remote release of main entrance door.
- Direct exit to exterior.
- Conduit, cable outlets, and receptacles for floor and wall-mounted televisions as well as telephone and data cabling.
- Unisex barrier-free washroom with a feminine napkin dispenser and disposal unit, a baby change table, a recessed garbage receptacle and a paper towel dispenser.

4.25. Bicycle Room

Bicycle storage is to provided outdoors with protection from the elements.

4.26. Mailrooms

Mailrooms should be designed in accordance with Canada Post requirements. They should be universally accessible and should provide exterior access by Canada Post.

4.27. Public Washrooms

For buildings with communal spaces, one universal washroom should be accessible from the main floor corridor and include the following accessories:

- Feminine napkin dispenser and disposal unit.
- Baby change table.
- Recessed garbage receptacle and a paper towel dispenser.
- Exhaust fan ducted to the outside.
- Motion activated high efficiency lighting.

4.28. Common Laundry Facility

Laundry rooms are to be universally accessible. The ratio of equipment to units will be based on the type of building. If possible, laundry rooms should be located at ground floor level with view to an outdoor child play area or amenity area. All dryers are to be electric. Provide individual shutoff valves for individual washing machines as well as a separate cleanout drain for each washing machine with appropriate slope. Provide a clothing folding counter/table with dual height to accommodate accessibility requirements. Include a laundry sink that is accessible.

4.29. Storage Space

Preference will be given to providing storage space within each individual unit rather than storage lockers in the basement. Alternatively, storage spaces could be provided in a separate building on site.

Where possible, a secure storage space for maintenance staff to store replacement parts and appliances should be provided.

4.30. Standard Unit Sizes

The average unit sizes listed below should be considered as preferred requirements. The average applies to all units of the same size in a project. Municipal zoning by-laws may vary in sizes and need to be taken into account. Minimum size is to be based on applicable municipal by-laws.

Size	Studio	1 Bedroom	2 Bedroom	3 Bedroom	4 Bedroom
Average Size	400 ft^2 or 37.2 m^2	550 ft^2 or 51.1.0 m^2	725 ft^2 or 67.4 m^2	950 ft^2 or 88.3 m^2	1175 ft^2 or 109.2 m^2

5. BUILDING MATERIALS

Building materials play a crucial role in the construction of safe, durable, and sustainable housing. These guidelines provide a generic framework for selecting and using building materials in Northumberland Housing construction. When considering materials for use in NCHC buildings, priority should be given to materials that have high-performance abilities, come from sustainable resources, enhance energy efficiency, contribute to the health and well-being of occupants, and are durable and cost-effective.

5.1. Safety and Compliance

All building materials shall comply with the building, safety, and energy codes.

Consideration should be given to fire resistance, load-bearing capacity, lifecycle of material, architectural design, sustainability, and durability of materials.

Prioritization of health and safety including but not limited to, non-toxic and low-volatile organic compound VOC)) materials to maintain good indoor air quality and avoid harming the environment.

5.2. Structural Components

5.2.1. Foundations

The foundation will depend on the design of the building, geographical location and climate, soil and moisture conditions, and project budget. Poured concrete, insulated concrete forms (ICF), or concrete block is the preferred material for

foundations. Concrete should be correctly designed, mixed, poured, and set to eliminate the possibility of cracks, buckling, or deterioration.

5.2.2. Framing

Wood-based materials use less energy and emit fewer greenhouse gases and pollutants over their life cycle. Using wood can help reduce our carbon footprint and help achieve the climate change goals.

Timber framing is the preferred method of building as it is sustainable and renewable. Consideration should be given to engineered lumber products such as Trus Joist® (TGI) joists and oriented strandboard (OSB). Cut-offs from framing should be incorporated back into the building to minimize waste and help reinforce other areas of the building.

5.3. Exterior Materials

The designers are responsible for all material choices on the project and should consider the material properties of the designed assemblies. Material properties include structural rigidity, contraction and expansion under thermal and moisture cycles, rate of thermal gain and loss, rate of moisture absorption and storage, rate of wetting and drying, and vapor and air permeance. The assemblies should create a structure that is capable of accommodating movements, and moisture, thermal, and air flow loads. Enclosures should not be susceptible to moisture damage and have a properly designed and constructed air barrier system. Materials on the exterior of the building should have the same design theme as the surrounding building’s architectural style and architectural style within the community.

5.3.1. Exterior Walls

Typical material options for exterior walls include brick, stone, and vinyl siding. Preference will be given to the most cost effective and durable product. Windows

Window types vary depending on the design and could be operable or non-operable; however, each occupied space should be equipped with minimum 1 operable window to allow for fresh air. Possible performance issues including transmission of light, solar energy and acoustic, air leakage, thermal transfer (heat loss or condensation), privacy and safety should be reviewed and evaluated in choosing a window product.

Insulated Glass Units (IGUs) with a Low-E coating should be used in the windows. Double-glazed windows should be considered the minimum standard. Window placement should prioritize privacy and security.

Window frames made from composite material, fiberglass, and vinyl are preferred to wood, aluminum, and metal.

5.3.2. Insulation

Various types and products are available to provide the maximum R-value based on the building codes, design, energy targets, and performance requirements. The preferred materials for insulation are fiberglass (batt) and spray foam depending on the area being insulated.

5.3.3. Roofing

The minimum service life of the roof assembly is preferred to be 25 years.

Acceptable low-slope roofing materials are metal, asphalt including built-up and modified bitumen, and single-ply membranes. For sloped roofs, asphalt shingles are preferred. Consideration will also be given to metal and synthetic roofing products.

We understand there are innovative roofing systems (smart roofs, green roofs, cool, solar roofs, etc.), and emerging technologies and materials such as solar tiles, phase changing, self-healing and cleaning, nanotech, etc. These can be reviewed on a project-by-project basis.

5.3.4. Parking lots

Parking lots will be paved with asphalt instead of concrete as it is a more cost-effective material. White line paint should be used to delineate individual parking spots. Consideration will be given to permeable material.

5.4. Interior Materials

5.4.1. Drywall

Utilize proper drywall or gypsum board type and thickness including standard, mold-resistant, moisture-resistant, fire-resistant, and soundproof for interior walls and ceilings depending on the application.

5.4.2. Flooring

The use of luxury vinyl flooring should be utilized throughout the living areas for ease of cleanliness and maintenance. Priority should be given to durability and watertightness. Transitions should be kept as even as possible for accessibility purposes.

5.4.3. Paint and Finishes

Choose safe, nontoxic, low-VOC, and eco-friendly paint and finishes for a healthier indoor environment. Doors and trim should be painted in a durable finish. Colours for walls and ceilings should be consistent for all NCHC housing units. Countertops should be made of laminate so that they are durable and cost-effective.

5.4.4. Backsplashes

Fiberglass-reinforced plastic (FRP) sheathing is preferred for the use of backsplashes for ease of cleanliness. Priority should be given to watertightness.

5.4.5. Doors

Doors used solely for interior purposes should be solid core and be manufactured from molded wood composite.

Doors used at the entrance of the building should be wood cores with aluminum cladding. These doors should include peepholes as privacy and security should be given priority.

5.5. Plumbing

5.5.1. Pipes

Use copper or cross-linked polyethylene (PEX) for plumbing systems.

5.5.2. Fixtures

All units should be equipped with a minimum of one bathtub, one sink for the bathroom, and one sink for the kitchen.

Toilets should be low flow to conserve water consumption.

On-demand hot water tanks should be considered as part of the design.

5.6. Electrical

Wiring should be insulated copper suitable for a 120V or 240V system dependent on the electrical requirements. Outlets and switches are to be compatible with either 120V or 240V systems as per the design requirement. Use wire gauge and breaker size appropriate for the load requirements and ensure all electrical components are installed in compliance with the Electrical Safety Authority. Sustainability and Energy Efficiency

5.7. Quality Control

Regularly inspect and test materials to maintain quality and safety throughout the construction process.

5.8. Documentation

Maintain thorough records of material specifications, installation and maintenance manuals, testing results, warranties, and compliance with local regulations.

6. ENERGY EFFICIENCY

NCHC takes responsibility for energy efficiency and reducing our carbon footprint seriously, and strives to reduce the energy consumed, use building materials that will have less impact on the environment and continue to learn and improve from each project.

Energy efficiency should be achieved using proven technology, executed correctly.

Buildings should be designed to a recognized, registered energy efficiency program. Common sense, achievable goals that take budget implications into account. Energy efficiency and environmental responsibility goals shall be achieved by prioritizing the cost using a ‘budget envelope’ approach.

Energy efficient building methods shall be reviewed based on initial (capital) cost, demonstratable cost saving vs. other technologies, maintenance, life cycle, and priority vs other technologies.

Where practical sub-slab insulation of at least 2” shall be installed.

Consideration should be given to including sun shading on south and west elevations. Roof overhangs should be 24” especially on south and west elevations.

Supplies to all fixtures shall have isolation valves at the fixture.

Dual flush toilets are encouraged.

6.1. Building Envelope

The building envelope should be designed to achieve low air leakage, eliminate thermal bridging, and reduce summertime solar heat gain and winter heat loss. Consider the building orientation and incorporating shading devices to achieve these goals. Also explore passive and active solar possibilities.

All exterior walls shall have thermal break (polystyrene product). Notwithstanding that properly installed exterior foamboard serves the purpose of an air barrier, an air barrier will be installed over the foam board.

Preference shall be given to materials that have higher ratios of pre- and post-consumer recycled material, provided they perform to the same standards as conventional materials and are cost effective.

Corners in exterior walls, where partitions intersect exterior walls, rim joists shall be insulated using high density spray foam.

Windows shall be installed such that the inner most pane of glass is close to being flush with the interior surface of the wall. Contractor shall ensure long lasting, effective flashing is applies to the exterior of the windows.

The rough opening sill for windows shall have a negative slope towards the outside of the wall.

Roof trusses will have raised heels to allow for maximum insulation to the outside edge of the exterior wall, while allowing for proper air flow in the attic.

Wood baffles shall be installed, at framing stage, between all roof trusses. Baffles will extend to the full height of the anticipated insulation. Attic insulation shall not be installed until baffles are installed.

Soffit over window openings shall not be of the vented type.

Consideration should be given on using low vs high heat gain windows, based on orientation of building.

6.2. Heating, Ventilation and Air Conditioning (HVAC)

The importance of design of the heating/ cooling systems shall take priority over other considerations. A home/building can not be designed properly until the HVAC system has been specified.

Where possible, heating/ cooling systems shall be provided either by a central system or heat pump(s).

New homes using a central heating/ cooling system shall have a central air handling (forced air) capability and include a conventionally available air filter (MERV 10).

All ductwork shall be sealed using aluminum duct tape. This includes where the plenum joins the furnace, if applicable.

Mechanical rooms (areas) shall have a floor drain.

All homes shall have at least one high wall dedicated return air, located in the largest room. Consideration should be given for an additional dedicated return air.

Bathroom and kitchen fans that are vented to the exterior shall have a minimum 100 mm (4 inch) smooth surface pipe attached to the fan unit as close as practical.

6.3. New or innovative technology.

If the architects, designers, engineers or contractors are proposing the use of a new or innovative product or technology it shall be incumbent upon them to demonstrate the reliable performance and reasoning behind the proposal.

Emerging methods, materials and technology will be judged using reverse onus. That is, for the proponents to demonstrate their energy savings and cost efficiencies. We are not a testing facility.

Northumberland County Housing Corporation (NCHC)
Report to Board

April 30, 2025

129 Kent Street. Campbellford Additional Dwelling Unit Review

Prepared by:

Negar Pakzadian Project Manager, Major Capital Projects, Public Works

Issue

Staff have assessed the feasibility of adding an additional dwelling unit (ADU) to the property located at 129 Kent Street, Campbellford. This report provides an overview of the research and analysis completed to date and presents a recommendation for proceeding with the project.

Recommendation

That the Northumberland County Housing Corporation (NCHC) direct staff to proceed with the development of a 1-bedroom additional dwelling unit on the property located at 129 Kent Street, Campbellford. It is recommended that the unit be constructed using a prefabricated volumetric modular home, due to the method's accelerated construction timeline, minimal on-site disruption, and compatibility with the site conditions. Furthermore, a design & construction budget with an upset limit of $400,000 be approved utilizing funding from the NCHC Housing Reserves to support the further intensification of the site.

Background

The property originally built circa 1920, currently has a single detached duplex. While minor renovations to the existing structure are required, staff have identified an opportunity to increase site capacity through the addition of a backyard ADU, directly supporting the County's efforts to expand affordable housing options.

To support this initiative, staff explored a range of project delivery models, construction technologies, and permitting strategies. A design-build delivery approach, using pre-designed housing prototypes, was identified as a model that could streamline project timelines and reduce design and permitting complexity. This method has been successfully employed by other municipalities seeking expedited housing delivery.

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Housing Corporation

In parallel, staff reviewed various construction options with an emphasis on minimizing tenant disruption, maintaining site safety, and ensuring cost efficiency. Options considered included:

- Prefabricated homes
- Modular ADUs
- Manufactured homes
- Kit homes
- Panelized building systems
- Shipping container structures

Following this comprehensive review, volumetric modular and panelized prefabricated construction methods were identified as the most viable. Of these, volumetric modular homes emerged as the preferred solution.

Volumetric modular construction involves building entire modules off-site in a controlled factory environment. These modules are then transported to the site and placed on a permanent foundation. This approach can reduce overall construction time by 30–50% and minimize the impact on existing site conditions, tenants, and neighbors. The method also supports enhanced quality control and environmental sustainability, making it highly suitable for infill and backyard developments.

Understanding Modular Construction

These homes are fully compliant with local building codes and utilize the same building materials as traditional stick framed site-built homes.

Key Features of Modular Construction:

- **Prefabrication:** All major components—walls, floors, ceilings, electrical, and plumbing are constructed off-site in a controlled environment.
- **Modular Assembly:** The structure is built in multiple sections (modules) that are later assembled on-site. The preferred method for this project is a single module.
- **Permanent Installation:** The modules are installed on a permanent foundation and finished by qualified contractors.

Benefits of Modular Construction:

- **Accelerated Delivery:** Reduces build time by 30–50% compared to conventional methods. Site work can be completed in parallel with module construction off site.
- **Minimal Disruption:** Ideal for infill or tenant-occupied sites.

- **Quality Control:** Factory setting allows for precision construction and protection from weather delays.
- **Environmental Sustainability:** Reduces material waste and promotes efficient use of resources.

A common misconception is that modular homes are the same as mobile homes or trailers. In fact, once installed, modular homes are permanent structures that closely resemble and function like any traditionally constructed home, meeting the same building codes and standards.

Below are examples of modular homes currently available on the market, highlighting their design features and standard inclusions:

Figure 1: Some examples of modular ADUs

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Schedule Impact

The estimated construction timeline for the proposed modular dwelling unit at 129 Kent Street is outlined below. These estimates reflect typical durations based on standard project conditions and assume no significant delays in permitting or site preparation.

Estimated Project Timeline:

- Site feasibility and assessment: approximately 2 weeks
- Permit application and design development: approximately 2 weeks
- Permit approval: Variable, depending on municipal processing timelines
- Site preparation: Dependent on specific site conditions
- Off-site modular construction: Typically, 4 to 8 weeks
- Delivery and on-site installation: Typically, 1 to 2 weeks
- Final inspection and occupancy: Timing subject to municipal scheduling

Turnkey modular home providers can manage the full scope of the project, from initial design through to installation and final occupancy. Assuming timely approvals and site readiness, the project is expected to be completed within approximately 4-6 months from initiation.

Financial impact:

The estimated cost of prefabricated modular units ranges from $300 to $400 per square foot, depending on the choice of foundation type, structural requirements, and the level of interior and exterior finishes selected.

In addition to the base unit cost, site-specific expenses—such as permitting, site servicing, foundation work, delivery and craning, civil work including parking upgrades—can add an estimated $100,000 to the total construction cost.

Conclusion

The proposed addition of a modular dwelling unit in the backyard of 129 Kent Street presents a strategic opportunity to expand affordable housing options within the County using a cost-effective and low-disruption construction method. The review by staff supports the use of volumetric modular construction due to its accelerated timelines, high-quality standards, and suitability for infill development. With a clear implementation path, manageable costs, and the potential for timely delivery, this project aligns with the County's broader housing goals and delivery capacity. It is therefore recommended that NCHC and the County continue to work towards preparing a detailed implementation plan and advancing the project to the next phase.

NCHC Expenditure vs Budget Variance Report
as at March 31, 2025

	YTD Actual	YTD Budget	Variance	Variance Explanation
Taxation	995,664	995,	-	
Grant & Subsides	-		-	
Permits & Fees	-	-	-	
Interest Revenue	6,869	3,000	3,	Interest earned on bank account
Social Housing Revenue	528,065	526,561	1,	
Other Revenue	10,701	5,500	5,	Laundry revenue
Total Revenue	**1,541,300**	**1,530,725**	**10,**	
Travel & Training	-	1,750	(1,750)	
Materials & Supplies	8,630	4,346	4,	
Insurance	28,540	37,521	(8,982)	
Information Technology	4,044	3,412	633	
External Services	1,250	21,375	(20,125)	($11.2K) Legal services; ($8.7K) Contracted Services
Utilities & Fuel	276,771	251,428	25,	
Rent & Property Tax	122,304	155,526	(33,222)	Timing of budget allocation
Repairs & Maintenance			-	
Building/Land Improvements	46,878	19,023	27,	
Plumbing	10,029	6,962	3,	
Paint & Drywall	28,626	11,	17,532	
Roofs	90		90	
Moveouts	12,151	5,790	6,	($77.5K) Winter maintenance
Security	38,664	27,889	10,	($22.0K) Electrical
Winter Maintenance	178,660	101,960	76,	($18.1K) Refrigerator/stove stock
Cleaning Contracts	37,643	36,	1,142	($17.5K) Paint
Landscaping		2,182	(2,182)	($10.8K) Security
Waste Disposal	17,649	21,982	(4,333)	
Electrical	35,094	13,	22,033	
Other R&M		-	-	
TCAs under Threshold	123,778		123,	Timing of budget allocation
Internal Chargebacks	602,308	602,308	(	
Financial Services	112,892	59,524	53,	Timing of budget allocation
SS Program Expenses	640	3,000	(2,360)	
Total Expenditures	**1,686,641**	**1,386,633**	**300,**	
TCAs over Threshold	482,470		482,	Timing of budget allocation
Transfers to Reserve	37,500	37,500	-	
Total Investments	**519,970**	**37,500**	**482,**	
Long- Term Liabilities	-	-	-	
Transfer from Reserve	(220,000)	(220,000)	-	
Total Financing	**(220,000)**	**(220,000)**	**-**	
Surplus/(Deficit)	**(445,311)**	**326,593**	**(771,904)**	

Northumberland County Housing Corporation (NCHC)
Report to Board

April 22, 2025

Housing Services Operational Update

Prepared by: Julie Kennedy**,** Housing and Homelessness Operations Supervisor

Issue

Regular update of NCHC staff and programming operations

Recommendation

That the NCHC Board receive the Housing Services Operational Update report for information.

Year to Date Activity

This report will be quarterly as a mechanism to share operational updates and information.

Vacancy Report – January 1, 2025, to April 22, 2025, there have been 13 new move ins to RGI units, and 3 new move ins to Market Rent units. Additionally, we have 2 new move ins to RGI units currently scheduled for May 2025.

Arrears – As of April 2025, current arrears total $107,485.31 owing from 64 tenants for various reasons including disposal of furniture, damages, and owed rent. Arrears span from $10.00 - $19,408.00, with 21 tenants currently having payment plans in place.

We are actively engaged in an analysis of arrears data trends to be able to provide a more in-depth report that will be available in Quarter 3.

Programming – The Housing team will be hosting spring socials at our NCHC properties in Campbellford, Brighton, Colborne, Cobourg and Port Hope the week of June 16, 2025, to June 19, 2025.

All of the bulletin boards in our NCHC buildings have been updated with current information.

Letters have been distributed to all tenants in our buildings to advise of the policy around no smoking in their units. This is part of an ongoing enforcement effort to

ensure that smoke damage to units and disruption to other tenants is minimized where possible.

We are in the working with our Procurement Team on a Request for Proposal (RFP) to seek partnerships for the cleaning program.

A Levels of Service survey was distributed to all tenants through paper mail and electronic distribution to seek tenant feedback and engagement. Housing Caseworkers attended buildings to pick up surveys from tenants to ensure that people had equitable access to provide feedback. Our team plans to compile this data and will be providing a report back to the Board in Quarter 3.

We have a newly formed partnership with the Community Health Centres of Northumberland (CHCN) to have a Diabetes Educator attend paramedicine clinics at several of our buildings in Port Hope, Cobourg and Colborne. They will provide education and information on diabetes, as complete referrals where appropriate.

Inspections – Spring inspections are currently under way with a target completion date of May 1, 2025, for the first round of inspections. We anticipate there will be follow-up required after this first round of inspections and can provide more data around the number of follow-ups and potential issues identified in Quarter 3.

Staffing – A maternity leave contract position of up to 15 months for a Housing Services Caseworker will be posted internally on April 23, 2025, to cover a Housing Services Caseworker who will be off as of June 2025. Another staff member currently off on maternity leave will be returning to work on May 12, 2025.

Financial Impact

No impact outside of the approved budget.

Conclusion

It is recommended that the NCHC Board of Directors receive this report for information. Staff will bring this report to the board quarterly (or as required) to provide an update on NCHC operations.