

WINDSOR

RIVER. PEOPLE. OPPORTUNITY.

A STRONGER
WINDSOR TOGETHER

MANUFACTURING
LOGISTICS
SKILLED TRADES
STRONGER COMMUNITIES



Windsor Foundational Homes & Municipal Tiny Homes Manufacturing Opportunity

A supporting proposal to the Community-Driven Municipal Model

ADVANCED
MANUFACTURING

PANELIZED
HOME COMPONENTS

MODULAR SOLUTIONS
FOR STRONGER COMMUNITIES

LOCAL SKILLS
REAL IMPACT



SMALLER FOOTPRINTS. BRIGHTER FUTURES.



FOUNDATIONAL HOMES
STABILITY TODAY



TINY HOMES
OPPORTUNITY TOMORROW



STRONGER NEIGHBOURHOODS
A MORE INCLUSIVE WINDSOR



LOCAL JOBS
LASTING ECONOMIC GROWTH



A STRONGER
BRIGHTER
WINDSOR

HOMES TODAY.
A STRONGER WINDSOR TOMORROW.

Purpose of the Second Windsor Proposal

SUPPORTING DOCUMENT TO THE MAIN WINDSOR CDMM PROPOSAL

This proposal is the second Windsor document in the CDMM series. It supports the main Windsor Community-Driven Municipal Model proposal by focusing on one specific opportunity: Windsor's ability to become a serious producer of Foundational Homes and Municipal Tiny Homes under Housing Autonomy.

The main proposal explains the full CDMM architecture. This supporting proposal narrows the focus to housing production, manufacturing, logistics and workforce capacity.

Core purpose: Windsor can use existing manufacturing, automation, warehousing, logistics, skilled trades and private-sector capacity to build permanent housing for Windsor first, then potentially support Ontario, Canadian and North American municipalities as CDMM-type municipal housing systems grow.

This proposal does not tell Windsor to create a municipal factory. It explains a development pathway Windsor could evaluate through legal, planning, financial, construction and community review.

Executive Summary

WINDSOR AS A HOUSING-PRODUCTION CITY

Canada's housing problem is also a production problem. Communities require more permanent homes, more affordable pathways, faster delivery and a stronger link between housing development, workforce development and local economic capacity.

Windsor-Essex is one of the strongest places in Canada to examine this issue because the region already contains advanced manufacturing, automation, tool-and-mould expertise, transportation infrastructure, warehousing, logistics, skilled trades and cross-border supply-chain experience.

Foundational Homes and Municipal Tiny Homes provide two practical housing forms under CDMM Housing Autonomy. They can be standardized enough to support manufacturing and procurement efficiency while remaining adaptable to household size, accessibility, climate, site conditions, municipal zoning and local design.

Strategic question	Proposal answer
Can Windsor build permanent homes as a production system?	Yes, this should be formally evaluated because Windsor already possesses relevant manufacturing, automation, skilled-trades, warehousing and logistics capacity.
Does this replace private builders?	No. Private builders, manufacturers, suppliers and contractors remain central to delivery.
Does this belong inside CDMM?	Yes. Foundational Homes and Municipal Tiny Homes are components under Housing Autonomy.
Can it serve communities outside Windsor?	Potentially, after Windsor-first production proves quality, cost, delivery and demand.

Relationship to the Main Windsor CDMM Proposal

HOUSING PRODUCTION IS ONE PART OF A LARGER MUNICIPAL SYSTEM

This document should be read beside the main Windsor CDMM proposal. The main proposal establishes the complete municipal systems framework. This proposal focuses on how Windsor could produce the housing that Housing Autonomy requires.

The manufacturing opportunity connects directly to Housing Autonomy, Workforce & Skills Autonomy, Transportation Autonomy, Energy Autonomy, Digital & Communications Autonomy and Resource Development Autonomy. Housing production needs people, land, utilities, transportation, procurement, data systems and long-term asset management.

The main proposal answers what CDMM is. This proposal answers how Windsor could build the housing capacity required to make Housing Autonomy practical at scale.

Origin of Foundational Homes

A LIVED-EXPERIENCE AND COMMUNITY-DEVELOPMENT HOUSING CONCEPT

Foundational Homes did not begin as a conventional institutional housing product. The concept developed from lived experience of homelessness in Saint John, New Brunswick and from direct conversations with homeless residents about what type of housing would actually change their future.

The development process included discussions with people living through homelessness, including gatherings near the cemetery by the former shelter area and later discussions in the Yellow Zone. Through those conversations, the housing question moved beyond temporary shelter and toward permanent housing, ownership, dignity and a real foundation for the next stage of life.

The Foundational Homes concept was further developed through discussions with Romeo and brought back into shelter conversations. Residents discussed temporary housing versus permanent housing and ownership. The preference was clear: permanent housing and a pathway that could build stability.

Foundational Homes are not only a housing design. They are a response to a community question: what does a person need after homelessness, high rent, instability or exclusion so life can begin again on solid ground?

Origin of Municipal Tiny Homes

SMALL PERMANENT HOMES, NOT TEMPORARY SYMBOLS

Municipal Tiny Homes are a practical companion to Foundational Homes. They respond to the fact that not every resident or household requires a full-size home, and not every permanent housing solution must begin with a large unit.

Municipal Tiny Homes can serve single adults, couples, seniors, residents leaving homelessness, residents requiring supportive housing, people on fixed incomes, young workers and households that want a smaller low-operating-cost home.

The key distinction is permanence. A Municipal Tiny Home should not be treated automatically as a camp, shelter or temporary structure. When built to legal standards and connected to proper services, it can be a permanent home.

Housing Autonomy: Where FH and MTH Fit

OFFICIAL CDMM STRUCTURE

Foundational Homes and Municipal Tiny Homes are components under Housing Autonomy. They are not separate Autonomies. Housing Autonomy is the municipal field that allows a community to develop permanent rental, ownership, supportive housing, accessible housing, municipal subdivisions, land banking, infill, apartments, townhouses and other locally selected housing strategies.

FH and MTH give Windsor two standardized and scalable tools, but the City would still decide the broader housing mix. The correct housing mix should be driven by waitlists, bedroom demand, accessibility needs, homelessness data, household size, land availability, servicing capacity, location, financing and resident priorities.

Housing Autonomy component	Role in Windsor
Foundational Homes	Permanent homes designed as a foundation for residents and families seeking affordability, stability and possible ownership.
Municipal Tiny Homes	Smaller permanent homes for singles, couples, seniors and supportive-housing pathways.
Municipal rentals	Permanent rental options where ownership is not suitable.
Ownership pathways	Rent-to-own, affordable municipal sale, shared-equity or other lawful structures.
Land development	Municipal land, infill, subdivisions and partnerships with private/non-profit builders.

Why Windsor Is the Right City

MANUFACTURING CAPACITY MEETS HOUSING NEED

Windsor has a specific advantage many municipalities do not have at the same scale. It is not simply a city with housing pressure. It is a city and region with a deep industrial ecosystem that already understands production, quality control, automation, tooling, logistics, skilled trades and supply chains.

Invest WindsorEssex describes the region as having more than 1,000 manufacturers, more than 250 machine/tool/die/mould manufacturers, more than 500 automation-related firms and a skilled manufacturing workforce of roughly 40,000 designers, engineers, production workers and technicians.

Windsor's opportunity is to add housing to its production identity. The city has helped build cars, tools, automation systems, infrastructure and cross-border industrial capacity. The next national need is homes.

Windsor Builds Complex Things

CARS, BRIDGES, TUNNELS, COMPONENTS, AUTOMATION - NOW HOMES

The Windsor argument is not that automobile manufacturing and housing construction are identical. Housing has different codes, inspections, financing, approvals, servicing, weather exposure and occupancy standards.

The argument is that Windsor's existing industrial culture has transferable value. A region capable of precision manufacturing, automation, robotics, tool-and-die, mould making, automotive supply chains, warehousing and cross-border logistics is well positioned to evaluate housing as a manufactured system.

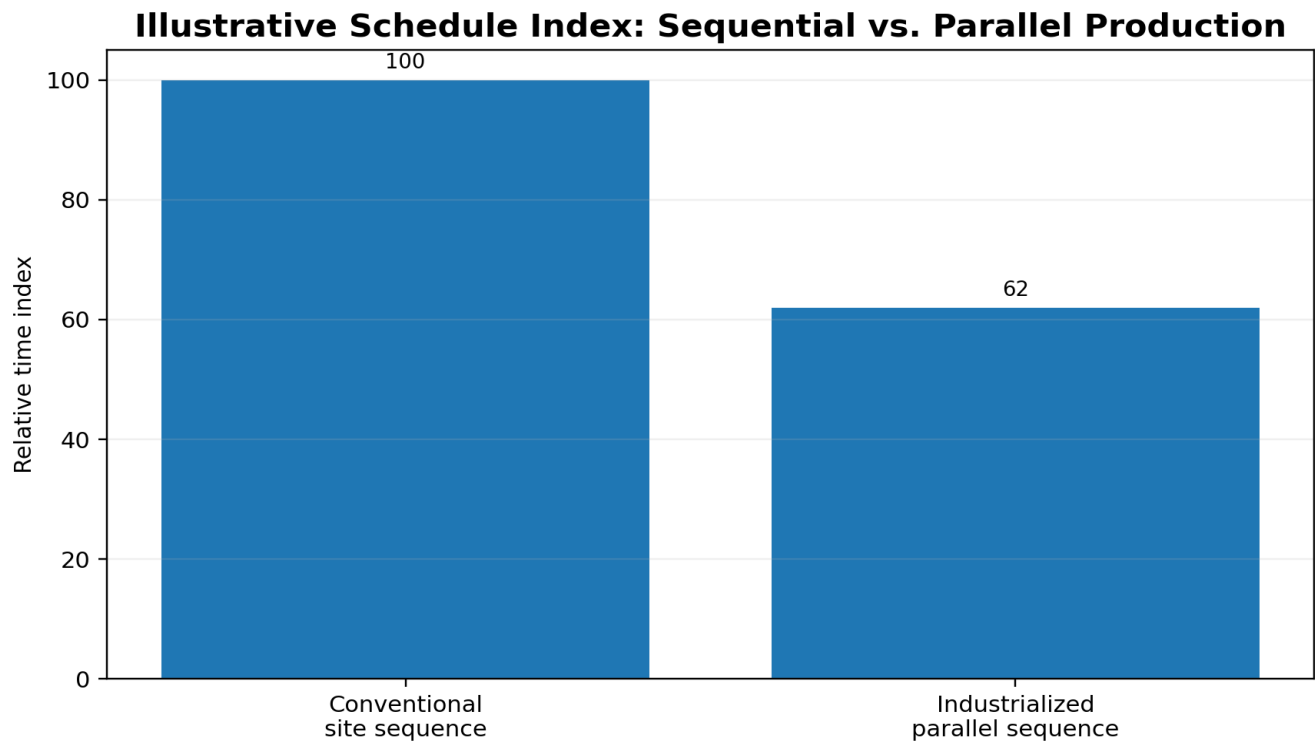
Existing Windsor capability	Housing-production application
Automation and robotics	Repetitive component production, cutting, fastening, material handling and quality checks.
Tool, die and mould expertise	Production tooling, jigs, fixtures, repeatable assemblies and component precision.
Automotive supply-chain discipline	Supplier coordination, delivery sequencing, traceability and quality standards.
Warehousing and logistics	Material staging, regional distribution, finished component storage and delivery routes.
Skilled trades	Factory assembly, site installation, electrical, plumbing, HVAC, finishing and maintenance.
Engineering and design	Code-compliant product families, energy efficiency and adaptable designs.

From Automotive Production to Housing Production

TRANSFERRING DISCIPLINE WITHOUT PRETENDING THE INDUSTRIES ARE IDENTICAL

Automotive manufacturing demonstrates how complex goods can be produced repeatedly with quality control. Housing production can learn from that discipline without becoming an automobile assembly line. Homes require human-centred design, site adaptation and long-term habitability.

The transferable model is a disciplined production system: define standard home families, identify repeatable components, certify code-compliant designs, create procurement lists, establish quality checkpoints, build components indoors, prepare sites simultaneously, deliver components or modules when sites are ready, inspect, connect services and occupy.



The Foundational Home Product Family

PERMANENT, DURABLE, EFFICIENT AND ADAPTABLE

Foundational Homes should be designed as a product family rather than a single fixed house. A product family allows standardization while preserving municipal choice and household fit. Windsor could begin with a small set of code-compliant designs and adjust them through measured experience.

The objective is to reduce avoidable design repetition, purchasing fragmentation and construction delay. Standardized components can support variety in exterior treatments, neighbourhood form and household configuration.

Type	Illustrative purpose	Design considerations
FH-1	Single person, couple or senior	Small footprint, low operating cost, one bedroom, accessible options.
FH-2	Small family	Two bedrooms, efficient layout, site-dependent foundation options.
FH-3	Standard family	Three bedrooms, long-term family stability, energy efficiency, future adaptability.
FH-4	Larger or multigenerational household	Larger households, family caregiving, culturally appropriate or extended-family housing where required.
FH-A	Accessible or adaptable home	Barrier-free entry, wider clearances, adaptable bathroom/kitchen, aging-in-place options.

The Municipal Tiny Home Product Family

SMALL HOMES WITH PERMANENT PURPOSE

Municipal Tiny Homes can be developed as detached homes, small clusters, rows, courtyard-style developments, infill units or supportive-housing sites where planning rules permit. They can also be combined with shared outdoor space, community rooms, staff support, transit access and service coordination.

Tiny-home manufacturing can begin with repeatable structural shells, panelized wall systems, bathroom/kitchen cores, energy packages and standardized service connections. The municipality can then decide whether units are rented, owned, leased, used for supportive housing or integrated into larger mixed-housing sites.

Type	Illustrative purpose	Implementation notes
MTH-1	Single adult or senior	Small permanent unit, low operating cost, compact kitchen/bath/living space.
MTH-2	Couple or two-person household	Slightly larger unit, two-person storage and service capacity.
MTH-A	Accessible tiny home	Accessible entrance, turning radius, adaptable bathroom and emergency access.
MTH-S	Supportive permanent tiny home	Integrated with support services, outreach, health care, addiction/mental-health support or case management where required.

Manufacturing Pathways Windsor Could Evaluate

CONTRACTED PRODUCTION, MUNICIPAL PRODUCTION, PARTNERSHIPS AND HYBRIDS

The manufacturing opportunity does not require one ownership model. Windsor can test different delivery models and choose what performs best. The correct structure should be based on legal authority, capital cost, risk, speed, quality, procurement rules, labour availability and long-term public value.

Pathway	How it works	Strengths	Risks / safeguards
Private contract manufacturing	City contracts private manufacturers/builders to produce FH/MTH components or units.	Fastest start; uses existing firms; lower municipal startup risk.	Requires strong specs, pricing transparency, warranty, inspection and procurement discipline.
Public-private partnership	Municipal assets, orders or land combine with private production expertise.	Shares capability; can scale; supports local industry.	Contract complexity; must protect public value and avoid hidden liabilities.
Municipal production cell	City or municipal corporation operates a small production unit for selected components or homes.	Direct control; workforce training; local asset creation.	Capital risk; requires experienced management and certification.
Regional production consortium	Several municipalities coordinate demand and production capacity.	Bigger order book; stronger purchasing; regional benefits.	Governance, allocation and cost-sharing must be clear.
Hybrid model	Private builders deliver first phase while municipal/regional production develops.	Practical transition; avoids waiting for a factory.	Requires coordination so early builds inform later manufacturing.

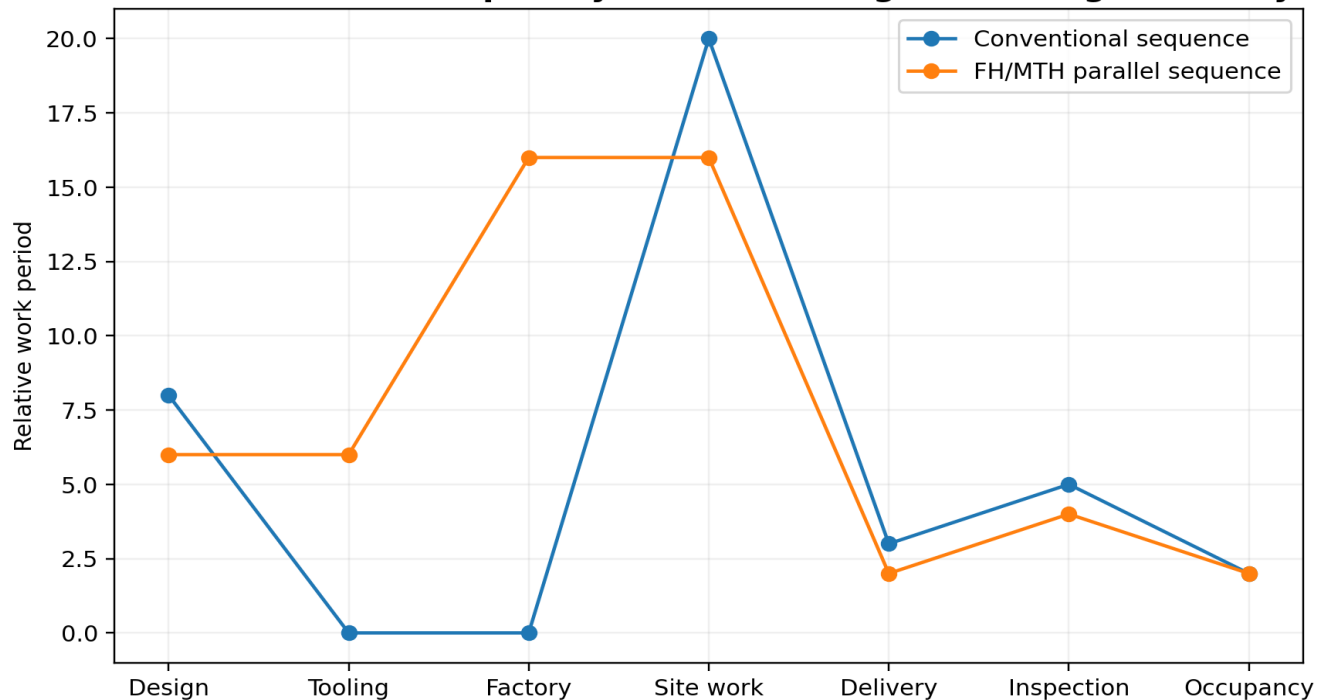
Production Sequence: From Need to Occupancy

A DISCIPLINED OPERATING PATHWAY

Manufactured housing succeeds when each stage is deliberately organized. The municipality should begin with the production pathway required to turn approved need into occupied homes.

Stage	Key action	Analyst questions
1. Housing need	Define household type, accessibility, support needs, location and tenure pathway.	Who is the home for? What problem is being solved?
2. Site readiness	Identify land, servicing, zoning, environmental constraints and transportation access.	Can the site accept housing on the required schedule?
3. Design family	Select FH/MTH type and approved code-compliant design package.	Is the design repeatable, adaptable and inspectable?
4. Procurement	Order materials, components, factory capacity and site contractors.	Are costs transparent and procurement rules followed?
5. Factory production	Build panels, modules, cores or complete units under quality-control conditions.	What defects are prevented before site delivery?
6. Site work	Prepare foundations, utilities, access, drainage and inspections in parallel.	Can factory and site schedules align?
7. Occupancy	Move residents in and monitor performance.	Is the household stable and the asset performing?

Workstream Overlap: Why Manufacturing Can Change Delivery



Timeline: How Long It Could Take

ORGANIZING PRODUCTION BEFORE PROMISING VOLUME

The expected timeline depends on whether Windsor uses existing private capacity, leased facilities, a new municipal production cell or a larger regional manufacturing operation. The following timing is a planning framework, not a guarantee.

A small initial production structure can be organized far faster than a full housing factory. The preferred CDMM approach is to build, measure, improve and scale.

Period	Practical work	Expected output
0-3 months	Confirm mandate, legal authority, steering group, evidence baseline, potential sites, interested private manufacturers and procurement pathway.	Decision framework and feasibility scope.
3-6 months	Complete concept designs, cost estimates, supplier mapping, site shortlist, code review, prototype requirements and funding application.	Approved pilot package.
6-12 months	Use existing builders/manufacturers for prototypes or early production; begin workforce partnerships and quality-control systems.	Initial FH/MTH builds possible if land and approvals are ready.
12-24 months	Scale contracted or hybrid production; evaluate municipal production cell if warranted.	Repeatable production system with measurable costs and completion times.
24+ months	Regional orders, intermunicipal agreements, larger production facilities or specialized component lines where demand supports them.	Windsor-first production with possible Ontario/Canada supply.

Year-One Production Scenario

400-800 HOMES IN THE MAIN PROPOSAL, SUPPORTED BY MANUFACTURING LOGIC

The main Windsor proposal uses a year-one planning range of 400-800 permanent homes. This supporting proposal explains how that range could be approached without requiring immediate full factory ownership.

Year-one production can combine existing private builders, modular suppliers, panelized construction, municipal procurement, conventional construction for some sites, and early prototypes for FH/MTH product families.

Year-one channel	Potential role
Existing contractors	Immediate site builds, foundations, services, finishing and local trades.
Modular / prefab suppliers	Early units or components while local capacity is evaluated.
Windsor manufacturers	Prototype panels, frames, interiors, fixtures, logistics or production tooling.
Municipal procurement	Standard specifications, batch purchasing and transparent pricing.
Workforce partners	Apprenticeships, training placements and certification pathways linked to actual builds.
Housing operators/support services	Resident selection, support planning, occupancy and retention monitoring.

Production Scale Scenarios

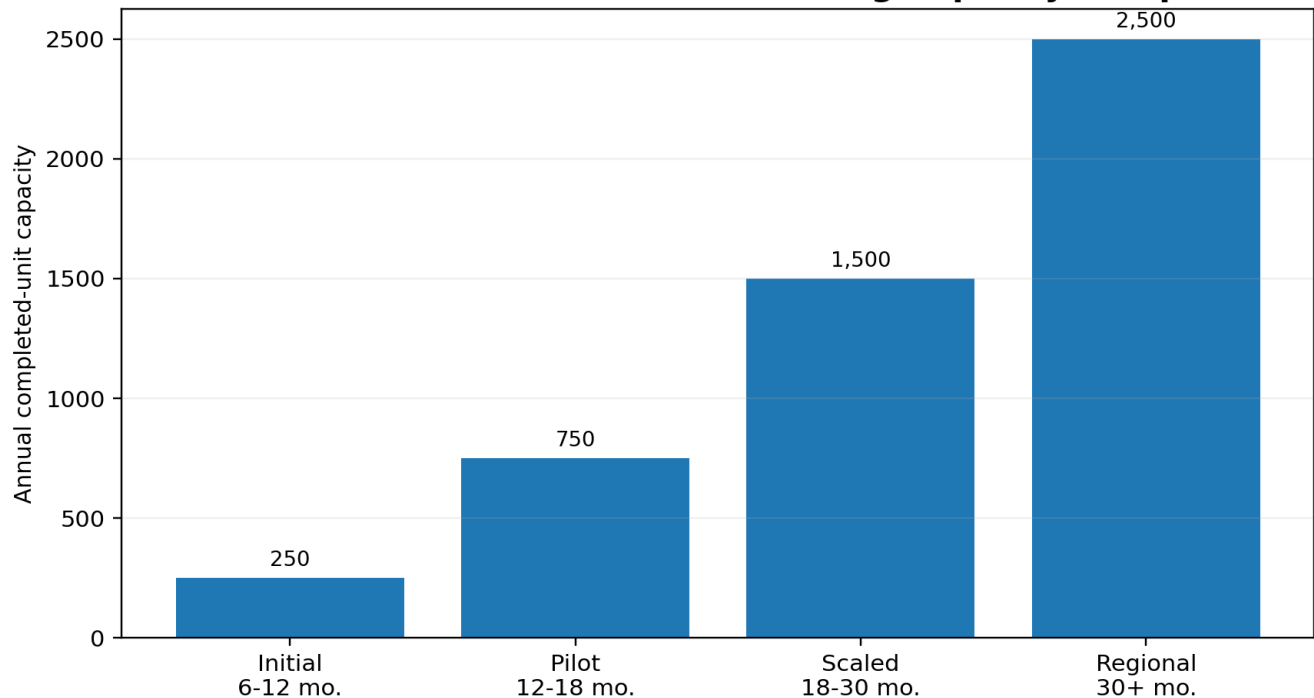
500, 1,000, 1,500 AND 2,000+ ANNUAL UNITS

Large production numbers should be treated as capacity scenarios. They force analysts to test facility size, labour, supply chain, transportation, capital cost, land, inspections, demand and governance. They should not be presented as automatic outcomes.

The strongest strategy is staged scale: prove the product, prove the cost, prove delivery, prove resident outcomes, then expand.

Annual capacity scenario	What it likely requires	Best use
500 units	Contracted builders, modular partners, limited standardization, strong procurement coordination.	Windsor-first pilot and early housing expansion.
1,000 units	Repeatable designs, local component production, dedicated management, larger material contracts and predictable site pipeline.	Windsor + regional municipal demand.
1,500 units	Dedicated line or multiple suppliers, warehousing, workforce pipeline, inspection capacity and multi-year financing.	Ontario municipal supply potential.
2,000+ units	Regional or provincial order book, larger plant capacity, specialized component lines and intermunicipal/provincial coordination.	Canadian housing supply network.

Illustrative FH/MTH Manufacturing Capacity Ramp



Facility Options

USING WHAT EXISTS BEFORE BUILDING WHAT IS NEW

Windsor does not need to begin with a new purpose-built plant. A production system can start in existing industrial buildings, leased warehouse space, private manufacturing facilities or partner facilities.

The facility choice should follow the product. If Windsor begins with MTH units, factory and transport requirements differ from FH panels or modular cores. Analysts should define the product family before selecting the facility.

Facility option	Use case	Considerations
Existing private manufacturing facility	Prototype and contracted component production.	Fast start; depends on available capacity and fit with housing materials.
Leased industrial warehouse	Kitting, storage, light assembly, inspection and staging.	Lower capital; useful for early material control and logistics.
Municipal production cell	Small controlled production of panels, cores or standard components.	Builds local asset and training capacity; requires management expertise.
Regional housing plant	Larger operation serving Windsor-Essex and other municipalities.	Needs predictable order book, capital, certification and governance.
Distributed supplier network	Several firms produce components under common specifications.	Supports private sector; requires strict quality control and coordination.

Warehousing and Logistics

THE HIDDEN SYSTEM BEHIND FASTER HOUSING

Manufactured housing depends on material flow. Warehousing determines whether components are available, protected, sequenced, traceable and delivered when a site is ready.

A Windsor FH/MTH housing-production system could use warehousing for lumber, engineered wood, steel, insulation, windows, doors, plumbing, electrical components, HVAC systems, fixtures, roofing, fasteners, panels, modules, bathroom/kitchen cores and finished units awaiting site readiness.

Logistics function	Why it matters
Material staging	Reduces site delays caused by missing components.
Batch procurement	Allows larger orders and more predictable supplier terms.
Kitting	Packages materials by unit/site so crews can work efficiently.
Cross-docking	Moves components from suppliers to sites with less storage time.
Backhaul planning	Reduces empty trips and improves vehicle utilization.
Inventory traceability	Tracks cost, origin, quality and warranty for each home.

Supply Chain Strategy

LOCAL WHERE PRACTICAL, CANADIAN WHERE STRATEGIC, COMPETITIVE WHERE NECESSARY

A Windsor housing-production program should not assume every input must be local. The better rule is strategic sourcing. Local suppliers should be used where quality, price, availability and capacity make sense. Canadian suppliers can strengthen national resilience. Competitive procurement remains necessary to protect the public interest.

Supply-chain planning must also protect against overdependence on a single supplier. CDMM production should be resilient enough to continue if one supplier fails, prices spike or delivery windows change.

Component category	Possible sourcing approach
Structural systems	Local or Canadian panelized/steel/wood suppliers; quality and code compliance first.
Windows/doors	Batch procurement; energy performance and warranty important.
Mechanical/electrical/plumbing	Standardized packages; local trades and inspection coordination.
Interior finishes	Durable, repairable, easy-to-source materials.
Energy systems	High-efficiency equipment; optional solar-ready packages where viable.
Accessibility features	Standard accessible options built into product families.
Transportation/installation	Local carriers and contractors where cost-effective.

Workforce and Skills Autonomy

HOUSING PRODUCTION AS A TRAINING PIPELINE

A housing-production strategy can be a workforce strategy. Windsor's existing trades, manufacturing and education ecosystem can support a structured pathway into construction, modular assembly, quality control, logistics, procurement, maintenance and building operations.

Training is strongest when linked to real demand. A resident can train for panel assembly, drywall, framing, electrical support, plumbing support, HVAC, warehouse operations, forklift operation, quality inspection, site preparation, finishing or maintenance because the homes are actually being produced.

This creates an economic loop: the municipality needs housing, the production system needs workers, residents need opportunity, and the resulting homes create stability for the same community.

Training stream	Connection to FH/MTH production
Carpentry/framing	Panels, assemblies, site work and repairs.
Electrical/HVAC/plumbing	Standardized service packages, installation and inspection support.
Manufacturing/automation	Factory process, component production and quality checks.
Logistics/warehouse	Inventory, staging, kitting, transport and delivery.
Construction management	Scheduling, cost tracking, site readiness and quality documentation.
Maintenance	Long-term municipal asset care and resident support.

Private-Sector Participation

MUNICIPAL LEADERSHIP DOES NOT MEAN MUNICIPAL ISOLATION

This proposal depends on private-sector participation. Windsor's builders, manufacturers, automation firms, suppliers, logistics companies, engineers, architects, trades, insurers, lenders and service providers can all participate in a municipal housing-production system.

Municipal leadership can create a predictable demand signal. Predictable demand is valuable to private firms because it allows investment in equipment, training, inventory and production planning.

The CDMM question is how public purpose and private capability can be organized so that more housing, jobs, assets and benefits remain connected to the municipality.

Private-sector participant	Possible role
Builders and general contractors	Site work, foundations, assembly, finishing, warranty and project management.
Manufacturers	Panels, modules, frames, components, fixtures, tooling and production systems.
Automation firms	Manufacturing process improvement, robotics, inventory systems and quality inspection.
Suppliers	Materials, equipment, appliances and replacement parts.
Logistics firms	Storage, transportation, sequencing and delivery.
Professional services	Architecture, engineering, legal, financial, insurance and certification support.
Small businesses	Maintenance, landscaping, cleaning, resident services and local supply.

Provincial Funding and Cost Control

UPFRONT INVESTMENT CAN REDUCE LONG-TERM TEMPORARY PRESSURE

The Province could play a major role in reducing the fixed cost of housing-production capacity. Provincial support could include capital grants, low-interest loans, guarantees, infrastructure funding, training support, industrial-site preparation, certification support or multi-year procurement commitments.

The long-term question is whether permanent housing capacity reduces the growth of temporary responses over time. Provincial investment can help keep unit costs lower by spreading startup costs over a larger production base.

Provincial support area	Reason it matters
Capital equipment	Reduces startup burden for production machinery, tooling and material handling.
Infrastructure	Serviced land, utilities, roads and site readiness determine how quickly homes can be occupied.
Training	Builds labour supply for manufacturing and construction.
Certification and code support	Speeds safe approval of repeatable designs and inspection procedures.
Multi-year demand coordination	Improves scale, supplier confidence and price negotiation.

Housing, Homelessness and Support Services

PERMANENT HOMES PLUS APPROPRIATE SUPPORT

Foundational Homes and Municipal Tiny Homes are not a substitute for every support service. Some residents leaving homelessness need mental-health care, addiction support, income assistance, identification replacement, case management, tenancy support, healthcare access, transportation and community integration.

The policy distinction is important: emergency shelter answers immediate danger; permanent housing answers long-term stability. CDMM Housing Autonomy aims to increase permanent exits from temporary systems while preserving appropriate support for residents who need it.

Resident pathway	Possible housing response
Street/tent/unsheltered	Immediate safety, outreach, shelter or bridge support, then permanent housing placement.
Shelter resident ready for independence	MTH or FH rental/ownership pathway depending on need and income.
Resident needing ongoing support	MTH-S or supportive permanent housing with services.
Low-income family	Foundational Home, apartment, townhouse or rent-to-own option.
Senior/fixed income	MTH, FH-1, accessible unit or permanent municipal rental.

Ownership Pathways

FROM HOUSING PAYMENT TO HOUSEHOLD ASSET

A core reason Foundational Homes matter is ownership. Permanent rental remains necessary, but ownership pathways can change a household's long-term position. Rent buys occupancy. Ownership can create equity, security, borrowing capacity, inheritance and intergenerational stability when structured responsibly.

Municipal ownership pathways must be financially sound. They should consider income, mortgage qualification, social-assistance rules, default protection, resale restrictions, maintenance obligations, insurance, property tax, shared equity, land leases and long-term affordability covenants where appropriate.

Ownership is not only a housing mechanism. It is a community wealth strategy when properly designed.

Pathway	Description	Safeguard
Affordable municipal sale	Municipality sells a home at a controlled price under lawful terms.	Protect against speculation and hidden subsidy loss.
Rent-to-own	A portion of payments contributes to eventual purchase where feasible.	Clear contract, resident protections and transparent accounting.
Shared equity	Municipality or partner retains partial equity to reduce purchase price.	Rules for resale, buyout and appreciation must be clear.
Land lease / home ownership	Resident owns structure while municipality retains land.	Long-term security, lease terms and financing must be workable.
Permanent municipal rental	For households not pursuing ownership.	Stability, maintenance and fair tenancy administration.

Design, Codes and Quality Control

BUILDING FASTER MUST STILL MEAN BUILDING SAFELY

Manufactured housing must meet applicable building codes, fire safety requirements, accessibility rules, zoning, servicing standards, energy-performance requirements and inspection procedures. Speed cannot come from cutting standards. It must come from better planning, controlled production, repeatability and parallel workstreams.

A Windsor FH/MTH production system should use a quality-management framework. Each home or component should have drawings, materials specifications, serial or batch tracking, inspection records, deficiency logs, warranty responsibilities and maintenance manuals.

Repeatability is the advantage. A defect found in one prototype can be corrected in the next batch before hundreds of homes are produced.

Quality checkpoint	Purpose
Design approval	Confirm code compliance before repetition.
Supplier qualification	Ensure materials meet performance, warranty and availability requirements.
Factory inspection	Catch defects before transport and installation.
Transport inspection	Verify damage, moisture and securement.
Site inspection	Foundation, utilities, drainage, access and safety.
Occupancy inspection	Final systems, safety, documentation and resident handover.
Post-occupancy review	Measure defects, energy, resident satisfaction and maintenance.

Energy, Maintenance and Lifecycle Performance

LOWER OPERATING COSTS SUPPORT AFFORDABILITY

A home that is cheap to build but expensive to heat, cool, insure or maintain is not truly affordable. FH/MTH design should therefore examine lifecycle cost. Energy performance, durable materials, repairability, moisture control, ventilation and maintenance access directly affect residents and municipal asset value.

Windsor can also connect housing production to Energy Autonomy. Homes can be solar-ready, battery-ready, high-efficiency, heat-pump compatible or designed for future neighbourhood energy systems where economically viable.

Lifecycle area	Why it matters
Energy efficiency	Reduces resident operating cost and demand on support programs.
Durable exterior materials	Reduces maintenance and extends asset life.
Standardized parts	Makes repairs cheaper and faster.
Moisture/ventilation design	Protects health and building durability.
Accessibility adaptability	Allows residents to age in place and reduces future retrofit costs.
Maintenance manuals	Supports residents, landlords and municipal asset managers.

Land, Servicing and Municipal Planning

MANUFACTURING CANNOT SOLVE UNAVAILABLE SITES

A housing-production system only succeeds if buildable land and servicing keep pace. Homes can be manufactured faster than sites can be approved, serviced or connected. That is why Housing Autonomy must include land banking, site readiness and infrastructure planning.

Windsor should separate production capacity from occupancy capacity. A factory can build 1,000 units; the city can only occupy them if sites, water, wastewater, stormwater, roads, electricity, broadband, zoning, inspections and transportation access are ready.

The manufacturing proposal must therefore be paired with municipal land strategy. Homes cannot be delivered only from the factory gate.

Planning requirement	Analyst test
Land inventory	Which parcels can accept FH/MTH, apartments, townhouses or mixed sites?
Servicing capacity	Are water, wastewater, stormwater and energy connections sufficient?
Transportation access	Can residents reach jobs, groceries, healthcare and schools?
Zoning and approvals	What changes or variances are required?
Neighbourhood integration	How will density, design, public space and resident concerns be handled?
Support services	Which sites require healthcare, social supports, transit or community facilities?

North American Municipal Demand

CDMM-STYLE MUNICIPAL HOUSING SYSTEMS CAN CREATE A NEW MARKET

Municipalities across North America are increasingly being forced to examine housing supply, homelessness, food security, essential costs, infrastructure resilience and local economic capacity. CDMM provides one complete framework, and municipalities may also develop their own local variations.

Housing production is one of the most transferable tools. Windsor can potentially become a producer, training partner or knowledge centre that helps those municipalities build faster without forcing them into one standard design.

The United States side is especially important because Windsor sits beside Detroit and near major cross-border infrastructure. If American municipalities expand public, non-profit or municipal housing production, Windsor's experience could become strategically valuable. This should be treated as a future opportunity, not an immediate assumption.

As municipalities develop their own CDMM-type systems, they will need practical housing supply. Windsor can position itself as a production and knowledge centre rather than only a buyer.

Market level	Potential Windsor role
Windsor	Build homes for local Housing Autonomy and homelessness/housing pressure.
Windsor-Essex	Coordinate regional demand, suppliers, training and logistics.
Ontario municipalities	Supply components, designs, units or manufacturing knowledge.
Canadian municipalities	Support municipal housing systems adapted to local climate and need.
United States municipalities	Future cross-border opportunity if demand, law, procurement and trade conditions align.

Rural and Urban Applications

DIFFERENT COMMUNITIES, DIFFERENT HOUSING SYSTEMS

Foundational Homes and Municipal Tiny Homes can serve both rural and urban communities, but implementation will differ. CDMM does not require one design template for every municipality.

Windsor's role could be to manufacture adaptable housing systems rather than identical homes. A northern home may need a different envelope. A rural home may need different servicing. An accessible home may need different layout. A city site may need stacked, row or cluster configuration.

Community type	Likely housing-production priorities
Large urban municipality	High-volume apartments, infill, MTH clusters, supportive housing, transit-connected sites, faster occupancy.
Industrial city	Manufacturing, workforce training, component production, mixed housing, supplier development and regional distribution.
Rural municipality	Smaller sites, land availability, transportation challenges, local trades, energy resilience, broadband and aging residents.
Northern/remote community	Climate-specific design, durable materials, transport constraints, local assembly training and energy resilience.
Agricultural region	Worker housing, family homes, producer-linked communities, transportation and food-system integration.
Border region	Logistics, customs, supply chains and cross-jurisdiction demand.

Municipalities Making Their Own Story

THE CULTURAL AND ECONOMIC VALUE OF LOCAL DESIGN

One of the most important ideas in CDMM is that municipalities can develop their own economic story. A community should not have to wait for one distant government template to define its future. It can use its people, assets, land, businesses, institutions and culture to create a local path.

A Windsor housing-manufacturing strategy could create a new local identity: a city known not only for cars and cross-border trade, but for building permanent homes and practical housing systems for Canada. That identity could support pride, skilled work, supplier development, education, innovation and new business formation.

Other municipalities will make different choices. One community may become known for municipal greenhouses and food distribution. Another may develop rural broadband. Another may build renewable energy. Another may specialize in water systems. CDMM allows those differences because the model is a framework for local capacity, not a single cultural script.

This is why the manufacturing proposal matters beyond homes. It is an example of how a municipality can convert local strength into a new form of public value.

Financial Structure and Municipal Risk

PUBLIC VALUE REQUIRES DISCIPLINED FINANCE

Housing manufacturing should not be pursued without financial discipline. The municipality should distinguish capital cost, operating cost, unit cost, land cost, servicing cost, debt, grants, revenue, rent, ownership payments, maintenance liabilities, warranties and long-term asset value.

Public value can appear in several forms. A project may generate direct revenue, reduce emergency-system pressure, create municipal housing assets, lower household costs, support employment, strengthen suppliers or improve resilience. These outcomes should not be mixed together without measurement.

Financial question	Required analysis
What is the full cost per occupied home?	Include land, servicing, factory, transport, installation, inspection, financing and maintenance.
Who carries construction risk?	Assign responsibility between municipality, contractor, manufacturer and insurer.
How are homes priced or rented?	Define affordability, cost recovery, subsidy and ownership rules.
What happens if demand changes?	Use staged capacity and avoid overbuilding production infrastructure.
What is the public return?	Measure housing outcomes, asset value, avoided costs, jobs and community benefit separately.
How are losses handled?	Set limits, reserves, reporting and correction mechanisms.

Risk Register

A STRONG PROPOSAL IDENTIFIES WHAT CAN GO WRONG

A strong municipal proposal must include risk. Housing manufacturing can fail if it underestimates approvals, costs, land readiness, labour shortages, code requirements, supplier reliability, transportation, resident needs or operating complexity.

Risk	Potential effect	Mitigation
Insufficient site readiness	Units built but not occupiable.	Land pipeline, servicing plan and site-readiness gating before production.
Cost overruns	Affordability target missed.	Open-book pricing, independent quantity survey, staged procurement and contingency.
Code/certification delay	Production paused or redesigned.	Early building-code, fire and inspection engagement.
Supplier failure	Material shortage or quality issue.	Multiple qualified suppliers and inventory strategy.
Labour shortage	Production slows.	Workforce & Skills pipeline, apprenticeships and private-sector training.
Poor resident fit	Homes do not match household needs.	Use waitlist, homelessness, household-size and accessibility data before design selection.
Political resistance	Program delayed or cancelled.	Transparent reporting, resident engagement and measurable pilot outcomes.
Overcentralized design	Homes unsuitable for other municipalities.	Adaptable product family, regional customization and feedback loops.

Implementation Governance

WHO MAKES THE SYSTEM WORK

A Windsor FH/MTH manufacturing opportunity requires clear governance. It should not be managed as a vague innovation project. The municipality would need a defined lead department or corporation, legal review, procurement authority, financial controls, technical advisers, resident engagement and reporting procedures.

Governance should protect flexibility. A pilot may reveal that one home type works well and another does not. CDMM should be able to adapt without losing the overall objective.

Governance element	Purpose
Council direction	Defines mandate, scope, reporting and limits.
Administrative lead	Coordinates housing, procurement, finance, planning, engineering and legal work.
Technical advisory group	Manufacturing, building code, construction, logistics, workforce and energy expertise.
Resident/community input	Ensures housing types match lived needs and neighbourhood realities.
Private-sector engagement	Identifies builders, manufacturers, suppliers and logistics partners.
Provincial/federal liaison	Aligns funding, regulation, infrastructure and housing programs.
Public dashboard	Reports units, costs, timelines, outcomes, risks and corrections.

Measurement Framework

THE PROPOSAL MUST PROVE RESULTS

The manufacturing proposal should be judged by measurable results. A beautiful design is not enough. Analysts should compare manufactured FH/MTH delivery against conventional alternatives using cost, time, quality, resident outcomes and long-term public value.

Results should be published annually. That gives Council, residents, provincial partners and private participants a shared view of what is working.

Measurement area	Indicators
Production	Units started, units completed, cycle time, factory defects, site defects, rework, weather delays.
Cost	Cost per occupied home, land/servicing cost, transport, financing, maintenance reserve, lifecycle cost.
Quality	Code compliance, energy performance, accessibility, durability, warranty claims, resident satisfaction.
Housing outcome	Occupancy, housing retention, exits from homelessness, ownership uptake, arrears and moves.
Workforce	Training participants, apprenticeships, certifications, placements, retention and wages.
Economic development	Local procurement, supplier contracts, new firms, private investment and regional orders.
Municipal finance	Asset value, debt, operating cost, revenue, subsidy level, reinvestment and risk exposure.

Analyst Questions Before Scaling

A CHECKLIST FOR SERIOUS REVIEW

Before Windsor scales from pilot production to regional or national housing supply, municipal analysts should answer a defined set of questions.

Question	Why it matters
Which FH/MTH types are most needed?	Production should match real household demand.
Which sites are ready?	Factory output is useless without serviced land.
What is the full cost per occupied unit?	Affordability depends on more than factory cost.
Which firms can produce components safely and competitively?	Private capacity is central to the opportunity.
What volume justifies a production cell or plant?	Avoids building infrastructure without demand.
How will quality be certified?	Protects residents, insurers, lenders and the municipality.
Which residents can pursue ownership?	Aligns housing design with income, supports and financing.
How will risk be shared?	Protects taxpayers and avoids hidden liabilities.
Can other municipalities participate?	A regional order book can support scale.
What evidence triggers expansion or redesign?	Keeps the program performance-based.

Avenue for North American Municipal CDMM Development

WINDSOR CAN BECOME A PRACTICAL SUPPLIER OF MUNICIPAL HOUSING CAPACITY

As more municipalities across North America examine local housing supply, food security, public asset ownership, municipal enterprises and essential-service resilience, they will need practical implementation tools. CDMM provides one integrated framework, and municipalities may also develop their own local variations.

The long-term opportunity is not simply selling units. It is creating a municipal housing-production ecosystem: designs, components, procurement templates, training, logistics, quality systems, installation support, maintenance guidance and data from real municipal deployments.

If Windsor proves FH/MTH production locally, it can become a leader in the next municipal development economy: communities using local authority and public-purpose investment to build productive assets instead of relying only on outside programs.

Conclusion

HOMES TODAY, STRONGER MUNICIPALITIES TOMORROW

The Windsor Foundational Homes & Municipal Tiny Homes Manufacturing Opportunity is a practical extension of the main CDMM proposal. It translates Housing Autonomy into a production strategy: identify housing need, standardize useful home families, use Windsor's industrial strengths, involve private firms, train residents, build permanent homes, measure results and expand only where evidence supports expansion.

The proposal's importance comes from the connection between housing and economic capacity. Windsor can build homes while also building jobs, skills, supplier relationships, municipal assets, regional production knowledge and future opportunities for other municipalities.

The origin of Foundational Homes grounds the proposal in lived experience. People who experienced homelessness and housing instability helped shape the concept toward permanent housing and ownership. Windsor's manufacturing capacity can now test whether that lived-experience idea can become a scalable municipal housing production system.

CDMM grows with the community. This supporting proposal shows how Windsor could grow a specific part of that model: housing production. If successful, the result would not only be more homes. It would be a new avenue for municipal capacity, local industry, household stability and North American community development.

Invest in Ourselves.

Selected Evidence Base and Source Notes

SOURCE DISCIPLINE FOR ANALYST REVIEW

This proposal separates verified evidence, proponent records and CDMM scenarios. Verified evidence supports the Windsor industrial and housing baseline. Proponent records explain the development and origin of the CDMM/FH/MTH concepts. Scenario figures test possible production pathways and should not be represented as municipal commitments or forecasts.

Before formal submission, this evidence base should be expanded with the latest City of Windsor, CMHC, Statistics Canada, provincial housing, building-code, zoning, land inventory, servicing and procurement records.

Source area	Use in this proposal
Invest WindsorEssex - Advanced Manufacturing	Regional manufacturing, automation, tool-and-mould and skilled workforce profile.
Invest WindsorEssex - Transportation and Logistics	Regional warehousing, transportation, cross-border and supply-chain capacity.
City of Windsor / Windsor-Essex Housing Needs Assessment	Housing need, tenure, waitlist and affordability context for the main proposal and this supporting proposal.
CMHC housing and prefab/modular resources	National housing supply, modular/prefabricated housing context and mortgage-insurance relevance.
Government of Canada / housing construction references	General modular and prefabricated housing construction context.
CDMM proponent records	Origin of Foundational Homes, Municipal Tiny Homes and CDMM Housing Autonomy as described by Bola Ademolu.
Main Windsor CDMM proposal	Complete nine-Autonomy architecture and Windsor municipal systems framework.

WINDSOR FOUNDATIONAL HOMES & MUNICIPAL TINY HOMES

MANUFACTURING OPPORTUNITY



A supporting proposal to the Community-Driven Municipal Model.

Housing Autonomy | Workforce & Skills | Manufacturing | Warehousing | Local Jobs | Permanent Homes

Proponent and Author: Bola Ademolu

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