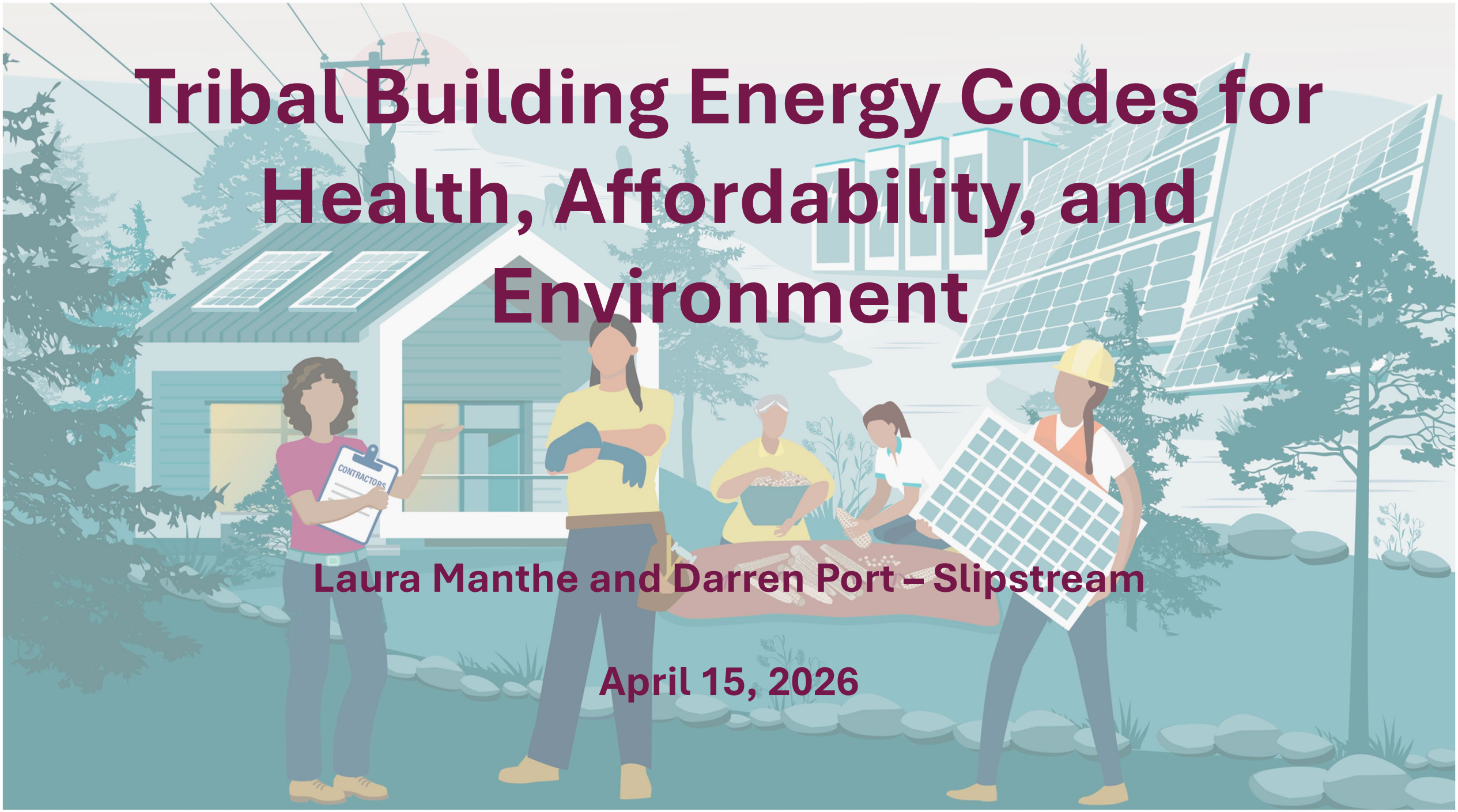
Tribal Building Energy Codes for Health, Affordability, and Environment



Laura Manthe and Darren Port – Slipstream

April 15, 2026

Agenda

- Introduction and Projects Overview (10 min)
- Energy Codes for Tribal Nations (30 min)
  - Tribal Building Challenges
  - Codes and Tribal Sovereignty
  - Building Code Overview and WI Landscape
  - Resilience
  - Cost effectiveness of codes
- Discussion (10 min)
- Health, Safety, and Affordability (5 min)
- Roadmap to Code Implementation (25 min)
- Discussion (10 min)

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MIDWEST ENERGY EFFICIENCY ALLIANCE

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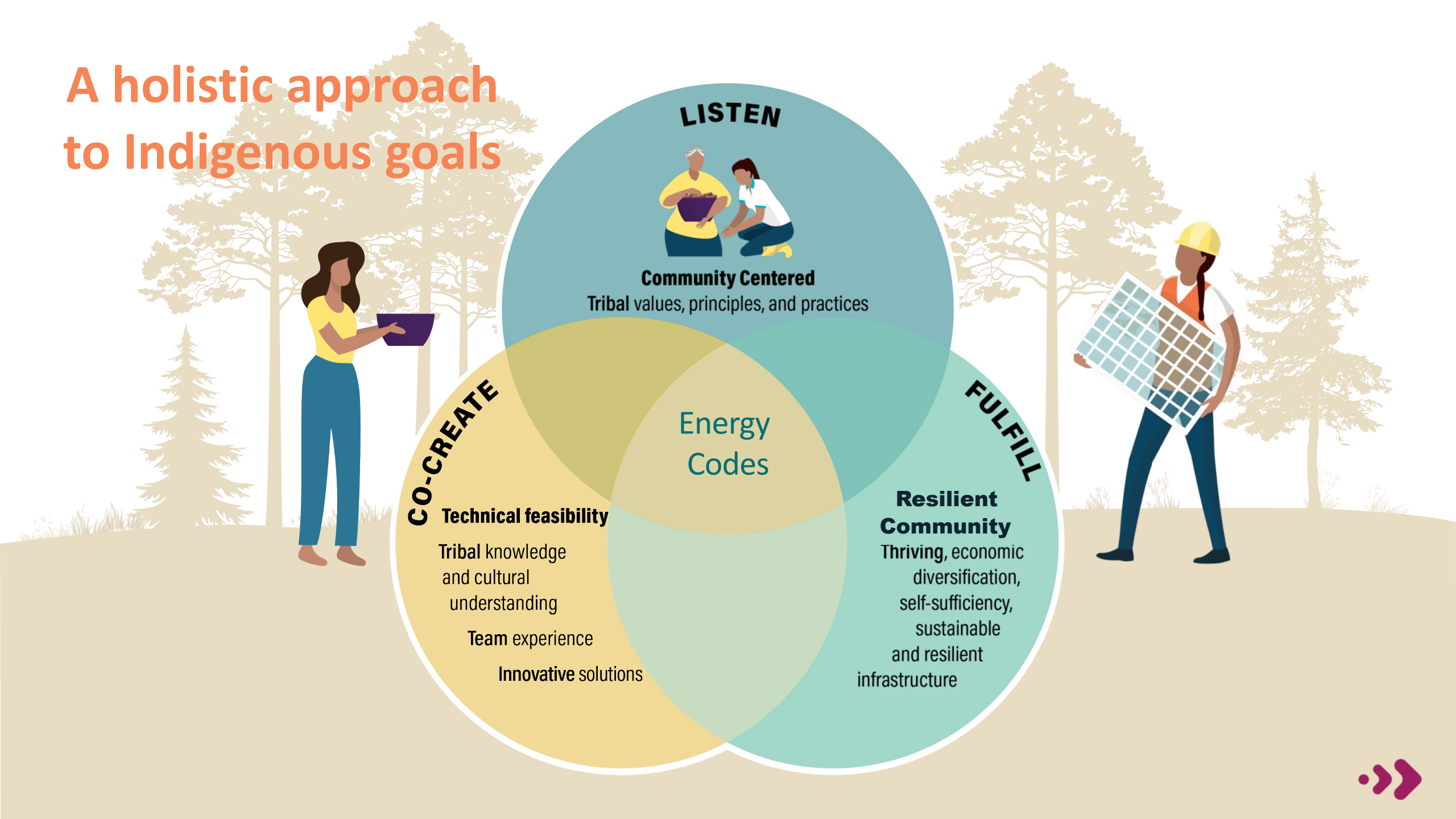
Accelerating climate solutions.
For everyone.

Slipstream accelerates solutions that equitably solve energy challenges.

A holistic approach to Indigenous goals



Slipstream's Native Nation work

- MN Card Native Nation Energy Characterization Study
- WI OEI Energy Plan LCO
- MI PSC Energy Plans LVD, SSM and Pokagon Band
- WI, IA and ILL (RECI) Resilient and Efficient Codes Implementation
- MI (RECI) Building a Strong Foundation for Energy Codes for Native Nations
- MI IOU Native Nation Residential Energy Efficiency Demonstration

Tribal Energy Code Project Overview

Building a Strong Foundation for Energy Codes for Native Nations in Michigan

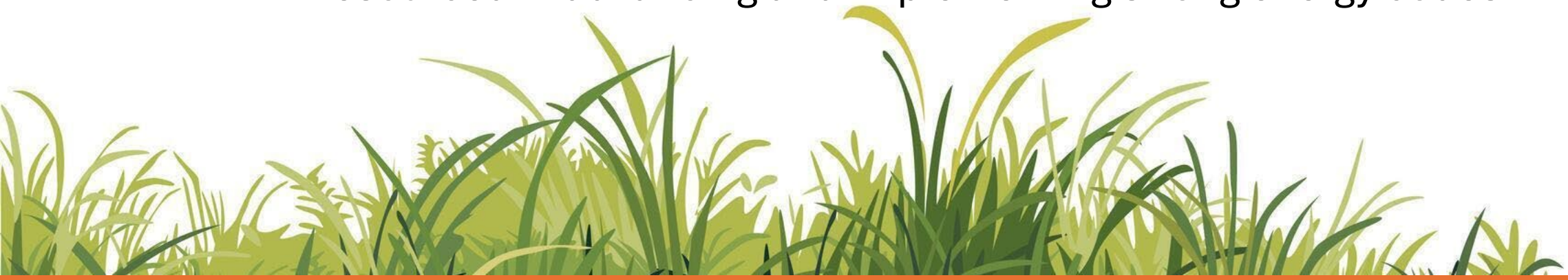
- DOE Resilient and Efficient Code Implementation (RECI) Grant to Tribes in advancing and implementing building codes.
- The Team: Inter Tribal Council of Michigan, Bay Mills Indian Community, Midwest Energy Efficiency Alliance, Michigan Energy Options, 5Lakes
- Provide assistance - technical, admin, policy
- Collaboratively identify paths and best practices for Tribes to adopt building codes
- Develop comprehensive resources and training to support energy code enactment, enforcement, and workforce development

Tribal Energy Code Project Overview

Focus on Under-Resourced Tribal and Home Rule (FURTHR): Aligning Energy Codes with Community Values

Department of Energy (DOE) Resilient and Efficient Code Implementation (RECI) Grant

Federal grant that helps improve base energy efficiency requirements and building practices in communities that historically have had challenges and been under-resourced in advancing and implementing strong energy codes



Building Energy Codes for Tribal Nations

Tribal Housing Challenges

- Housing Shortages
- Overcrowding
- Affordability
- Energy Burden
- Substandard Building and Infrastructure
- Health Conditions (mold, asthma)
- Complex Land Ownership
- Regulatory Barriers (Federal and State)

Native American households have an average energy burden (the percentage of gross household income spent on energy costs) that is 45% higher than that of white households.

MEEA Sept 2022

Building Codes Overview

Building and Energy Codes

Building Codes

- Minimum building regulations
- Specifies uniform criteria for construction
- Focused on safety, durability
- Latest technologies and construction methodologies
- Updated every three years

Energy Codes

- Energy codes a part of a building codes
- Reduces energy use and emissions
- Focus on building envelope and systems
- Electrification and Decarbonization

Code Benefits to Tribes

- Improved health and safety
- Greater confidence in housing quality
- Safeguard tribal housing investments
- Reduce long-term maintenance costs
- Safe and reliable infrastructure
- Affordability: lower energy and repair costs
- Clear standards for builders
- Economic development through skilled trades

Codes and Tribal Sovereignty

Tribal Building Codes Address Needs, Customs & Traditions of the Tribe

- Support Tribal self-determination by enacting its own laws
- Allow alignment with cultural values and priorities: provisions for cultural practices, materials, traditional Tribal architectural and mechanical features, and allow for Elders to age-in-place.
- Strengthen tribal governance capacity
- Provide local control over development standards, holding contractors and businesses accountable
- Focus on the long-term and generational safety, health, and economic well-being of the Tribe and Tribal residents

The enactment of Tribal laws is one of the greatest paths to Sovereignty and Self-Determination.

Building Codes Enactment and Enforcement

Code Enactment

- Codes are enacted by:
  - States and municipalities
  - Counties and townships
  - Tribal Nations
- An entity having jurisdiction formally enacts a code through legislation, Tribal Council, code councils and boards, and city council resolution or ordinances
- Jurisdictions may amend codes to fit needs
- Enactment establishes legal authority for enforcement

Code Enforcement

- Publication of the code or ordinance
  - Education and Training
- Plan review before construction
- Inspections during construction
  - Inspection for each code
  - Ratings for energy
- Final approval before occupancy
- Enforcement may be done by tribal staff or third parties

Codes or No Codes

Codes Brings: Opportunity

Collaborative Long-term Investors
Reputable Developers
Licensed-Insured Contractors
Licensed-Trained Tradespeople
Training Programs for Tribal Members
Lower Property Maintenance
Economic Development
Tribal Sovereignty

Initiatives, work, and outcomes that last for generations.

No Codes: Brings Systematic Challenges

Quick Scheme Investors
Unreputable Developers
Unlicensed-Uninsured Contractors
Unlicensed-Untrained Tradespeople
No Training Programs for Tribal Members
Higher Property Maintenance
Lack of Economic Opportunity
Loss of Autonomy

Profit-driven. No investment in the community or thought to long-term outcomes

Resiliency and Safe Occupancy

Buildings That Protect Occupants During Disruptions

- Resilient buildings maintain safe indoor conditions during emergencies
- Codes contribute to resilience through:
  - Structural safety and fire protection
  - Energy-efficient building envelopes that slow heat loss or heat gain
  - Ventilation systems that support indoor air quality
  - Moisture protection that prevents damage after storms or flooding
- During events such as:
  - Power outages, Extreme weather, Wildfire smoke episodes
- High-performance buildings can:
  - Maintain safe indoor temperatures longer
  - Reduce smoke and pollutant infiltration
  - Support sheltering in place when necessary

Resilient housing strengthens community health, safety, and emergency preparedness

Codes and Affordability

Energy-efficient housing supports long-term affordability and community stability

- Energy codes improve durability, reduce maintenance, repair and replacement
- Reduces energy consumption and monthly utility costs

Why This Matters for Tribal Communities

- Many households face high energy burdens,
- Midwest climate conditions—long, cold winters and humid summers
- Lower utility costs help:
  - Reduce financial stress for families
  - Improve housing stability
  - Increase household income for food, healthcare, and other necessities
  - Keep money local

Building energy codes have saved U.S. homes and businesses over $60 billion in the last 40 years, with projections reaching $182 billion in savings by 2040.

Wisconsin Code Landscape

Wisconsin Commercial 2021 IECC

Adopted November 2025

Energy Code Impact Buildings designed to meet the 2021 IECC use less energy for heating, cooling, and lighting, resulting in significant cost savings over time.

The 2021 IECC is estimated to improve site energy efficiency by 17.2%, the national average, for commercial buildings compared to the 2015 IECC, depending on building type.

A 50,000 square foot office building in northern Wisconsin (Climate Zone 6A), built to the 2021 IECC code, would save an estimated 14.1% in energy costs or $10,480 per year compared to one built to the 2015 code.

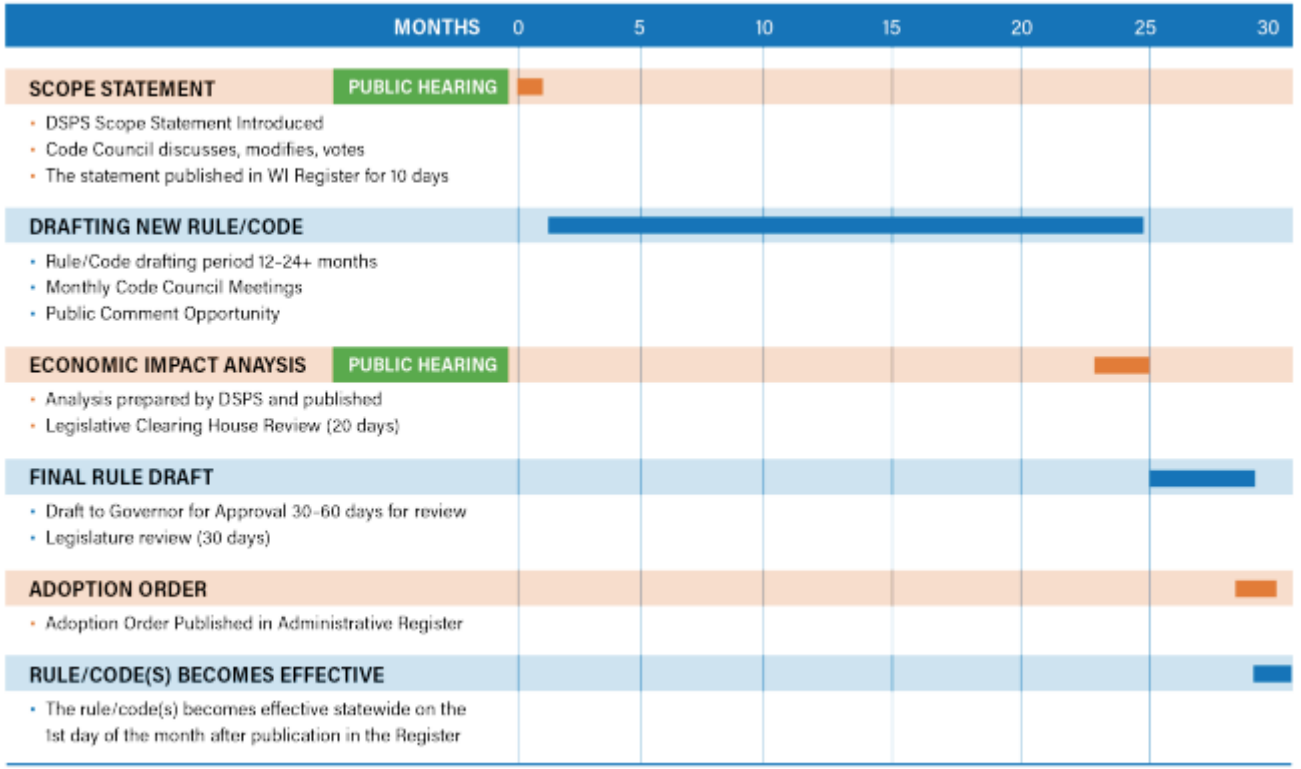
Wisconsin Landscape

WI Residential Energy Code 2009 IECC (amended) and UDC

WI Commercial Energy Code 2021 IECC and ASHRAE 90.1-2019

UDCC Statement of Scope May 2025; New Committee being seated, next meeting May or June

Stretch Code legislation in committee



Wisconsin Landscape

2021 IECC Residential Savings for Homeowners Compared to Wisconsin UDC

- Average annual savings of **21%** compared to the Wisconsin UDC
- Equating to **$817** of annual utility bill savings

Cash Flow Year One	Cash Flow 30 Year
• Amortized costs and benefits over a typical 30-year mortgage • First-time homebuyers positive cumulative cash flow in the ***first four*** years • Average homebuyers positive cumulative cash flow in the ***first six*** years	Over the course of 30 years, both a first-time homebuyer and an average-income homebuyer will net approximately **$10,600** in life-cycle cost savings

Wisconsin

Year One	Over 30 Years
Wisconsin residents could expect to save over **$12,210,000** in energy costs and **56,100 metric tons** in avoided CO_2 emissions	Wisconsin homeowners would save **3.26 billion dollars** in energy savings and reduce CO_2 emissions by **25.8 MMT**

2024 IECC Residential Savings for Homeowners Compared to Wisconsin UDC

- Average annual savings of **24%** compared to the Wisconsin UDC
- Equating to **$993** of annual utility bill savings

Cash Flow Year One	Cash Flow 30 Year
• Amortized costs and benefits over a typical 30-year mortgage • First-time homebuyers positive cumulative cash flow in the ***first three*** years • Average homebuyers positive cumulative cash flow in the ***first five*** years	Over the course of 30 years, both a first-time homebuyer and an average-income homebuyer will net approximately **$11,800** in life-cycle cost savings

Wisconsin

Year One	Over 30 Years
Wisconsin residents could expect to save over **$13,650,000** in energy costs and **62,700 metric tons** in avoided CO_2 emissions	Wisconsin homeowners would save **3.62 billion dollars** in energy savings and reduce CO_2 emissions by **28.8 MMT**

Discussion and Questions

Discussion (10 min)

- How does your Nation reduce energy burden and improve energy efficiency?
- Has your Tribe ever considered enacting a building or energy code?
- What are the challenges to energy code or standards adoption in your Tribal Nation?
- What is the energy code or standard, if one is adopted?

Building Energy Codes - Supporting Health, Safety, Affordability, and Tribal Sovereignty

Energy Codes and Healthy Buildings

Codes Support Health, Safety, and Resilient Communities

- Building and energy codes establish minimum standards for safe, durable, and efficient buildings
- These standards directly affect conditions that influence occupant health and wellbeing

Indoor Air Quality (IAQ) - Ventilation, exhaust systems, and air sealing help control indoor pollutants, allergens, and smoke.

Moisture and Mold Prevention - Water management, drainage, and humidity control reduce mold growth and damp conditions linked to respiratory illness.

Thermal Comfort and Safety - Insulation, air sealing, and efficient heating and cooling systems help maintain safe indoor temperatures.

Resilience and Safe Occupancy - Durable building systems help homes remain safe during extreme weather, power outages, and other disruptions.

Indoor Air Quality (IAQ)

- Building and energy codes help ensure buildings provide **fresh air, pollutant control, and safe indoor environments**
- Key code strategies include:
  - Mechanical ventilation requirements to provide consistent fresh air
  - Exhaust systems in kitchens and bathrooms to remove moisture and pollutants
  - Air sealing and compartmentalization to control contaminant movement between spaces
  - Filtration through HVAC systems to reduce dust, allergens, and smoke particles
- Health connection outcomes:
  - Reduces exposure to fine particles, allergens, and indoor pollutants
  - Reduction in asthma and respiratory conditions
  - Reduces medical costs
  - Reduced Fossil Fuel Combustion: Transitioning to high-efficiency, all-electric, or high-performance buildings reduces on-site emissions, improving both indoor and regional air quality.

Asthma rates among Native children are as high as 27% in some areas.

Allergy & Asthma Network, June 2025

Mold and Moisture Control

Moisture Control and Health

- Mold growth is primarily a result of excess moisture in buildings
- Moisture-related problems can lead to:
  - Mold and microbial growth
  - Structural deterioration
  - Respiratory irritation and asthma triggers
- Building codes address moisture through:
  - Roof and wall drainage systems and flashing requirements
  - Water-resistive barriers and foundation moisture protection
  - Air barrier design to prevent moist air from condensing inside walls
  - Bathroom and kitchen exhaust ventilation

Healthy buildings manage moisture by keeping water out, controlling humidity, and allowing assemblies to dry

Thermal Comfort and Health

Thermal Comfort as a Health and Safety Issue

- Thermal comfort refers to maintaining safe and stable indoor temperatures
- Building and energy codes influence comfort through:
  - Insulation in walls, roofs, and floors
  - High-performance windows and doors
  - Air sealing to reduce drafts
  - Properly sized heating and cooling systems
- Health impacts of poor thermal conditions:
  - Heat stress during extreme heat events
  - Cold stress and hypothermia in winter
  - Increased vulnerability for children, elders, and people with chronic illnesses
- Energy-efficient building envelopes via codes help:
  - Maintain indoor temperatures longer
  - Reduce heating and cooling costs
  - Improve comfort and overall health outcomes

Energy codes yields significant public health co-benefits, often valued at 24%–72% of the energy cost savings.

New Buildings Institute (NBI)

Tribal Code Enactment

Enactment of Codes by Wisconsin Tribal Nations

The following guide outlines enactment options for Wisconsin Tribes. Tribal Nations in Wisconsin have multiple sovereign pathways to enact Wisconsin energy code standards:

- Direct enactment of the Wisconsin State code by ordinance
- Model code enactment
- Hybrid tribal amendments
- Program-specific requirements
- Intergovernmental cooperation
- Fully independent but equivalent tribal codes
- Appendices, Stretch Code, Zero Code, Green Codes

Guide to Enacting and Implementing Codes as Tribal Law

Step 1: Convene a small code enactment working group

Step 2: Scope and Intent

Step 3: Choose the Technical Standard

Step 4: Draft the Tribal Energy Code Ordinance

Step 5: Design the Enforcement Protocol

Step 6: Create the Permitting and Inspection Workflow

Step 7: How compliance is demonstrated

Step 8: Build capacity (training + certifications)

Step 10: Begin with a “first-year” implementation plan

Step 9: Formal enactment and effective date

Step 11: Quality assurance and continuous improvement

Discussion (10 min)

- What are the challenges to energy code enforcement in the Tribal Nation?
- Who enforces the energy code? Are third party inspections allowed?
- Do you think there would be interest from Tribal members in becoming a code inspector or energy rater?
- Is there a lack of building code officials and building workforce that prevents meeting demand in either capacity or capability?

  Could you foresee working with other geographically accessible Tribes or entities for code inspection (i.e. circuit rider, county inspector)?

Thank you!

For more information, contact:

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