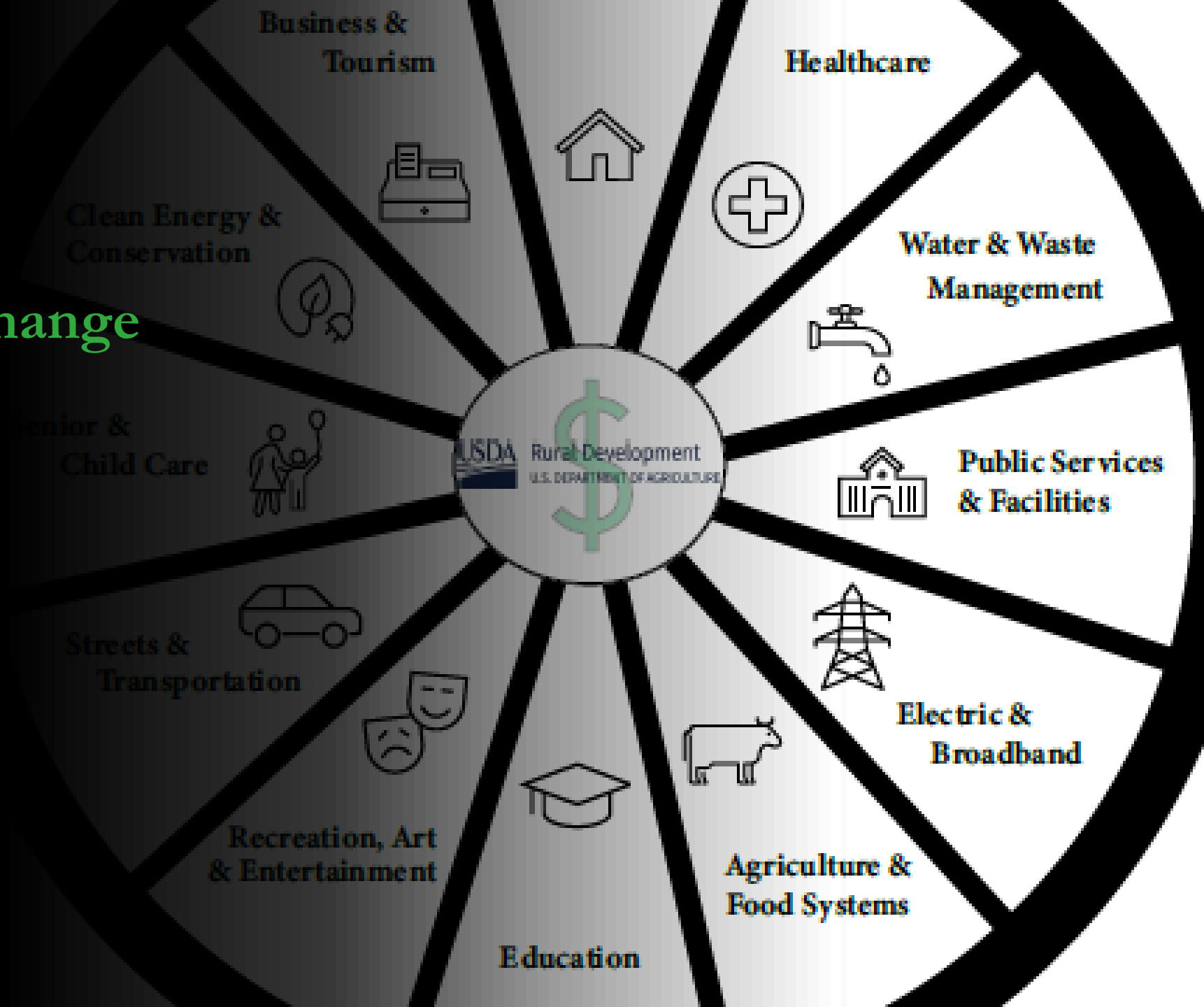


Getting Stuff Done Through the Noise: Complex Systems Change

Building Better By Design 2023:
Mission to No Emissions
April 5, 2023



Renewable
energy
generation

Food security

Increase electric
mobility

Real Net-Zero
Building



Curb
deforestation

Land use
planning

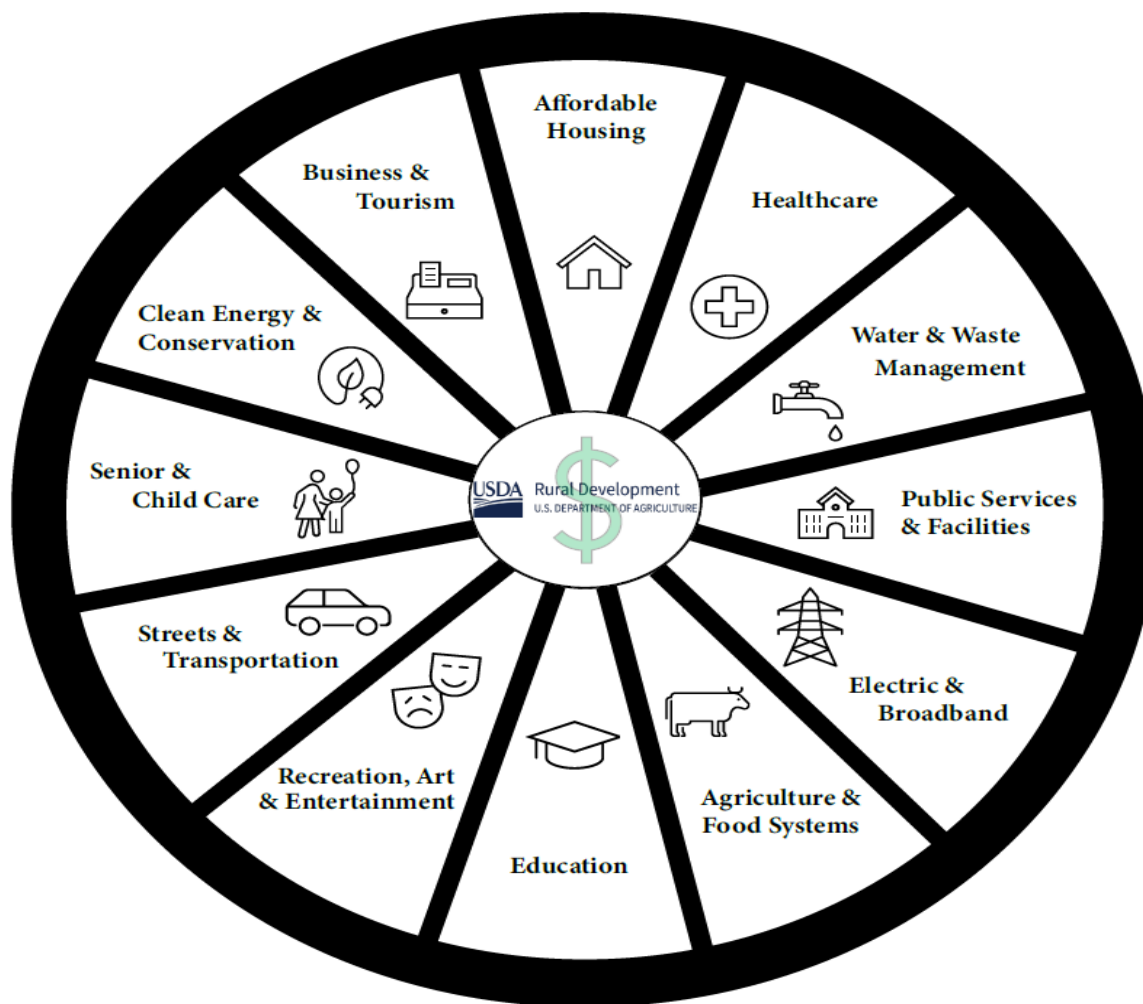
Plant-rich diets

Regenerative
Agriculture

Manage
population
growth

Helping Rural Communities Stay in Motion

With more than 50 loan, grant and loan guarantee programs to stimulate economic development, USDA RD funding supports and benefits every aspect of a rural community's health, safety and vitality



Challenge – *Opportunity?*



Underlying data: Need for primary homes by 2030 (pandemic-era household growth)

New homes needed 2024-2029	Rental	Owner	Total
Additional households expected*	6,632	17,054	23,686
Needed to house homeless (2022 PIT)	2,780		2,780
Needed to replace homes lost	727	1,869	2,596
Needed to achieve a healthy vacancy rate**	1,923	9,099	11,023
Total new homes needed	12,062	28,022	40,084

Assumptions: Assumes that the average rate of household growth that occurred between 2019 and 2021 continues (i.e. 1.4% per year), that 5% is a healthy vacancy rate, and that the 0.15% of the housing stock is lost to decay and other conversions each year.



The image features a central brain-like shape composed of a dense, tangled network of colorful lines (blue, green, red, yellow, purple) on a dark grey background. From the left side of this central shape, several thick, colored bands radiate outwards, each containing a white text label. The labels, from top to bottom, are: 'performance', 'interconnections', 'environmental impacts', 'variability', 'safety', and 'availability'.

What is a Complex System?

- Hard to model correctly
- New 'collective' system behaviors or outputs
- Distinct things happen in complex systems

Complex System Characteristics



EXPLORE

VERMONT'S FOOD SYSTEM



Local Food System Revitalization

Challenge

- Dairy prices
- Economic crisis
- Local food surge

Authority and Funding

- 2009 Farm to Plate Investment Fund
- 2012 Working Lands Investment Fund

Collective Impact

- Backbone Organization – VSJF
- 10 yr plan with common goals
- Tracking metrics across the system



Resident Owned Communities

Challenge

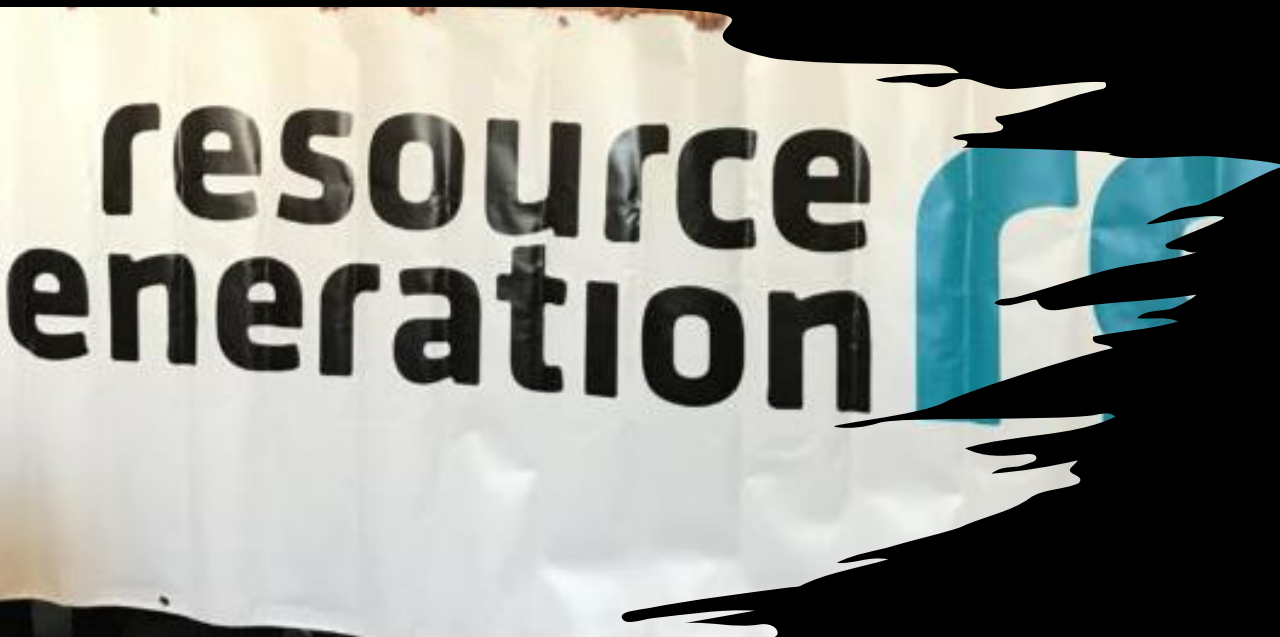
- Extreme vulnerability, flood risk
- High energy burden
- At risk for predatory MHC owners

Authority and Governance

- Vermont and New Hampshire resident purchase option
- Cooperatively owned and managed business

Climate Impact

- ROC NH, ROC USA, CDI
- Governance, tech/financial/managerial skills
- Investment in water, sewer, solar
- Housing stability and affordability for residents



Social Change Philanthropy

Challenge

- Billions of dollars
- Small number of decision makers
- Projects funded, but root causes not solved

Change in the Power Dynamic

- Diverse leadership
- People impacted become decision makers
- Fewer grants made to institutions, more 'grassroots'
- Unrestricted, pro-active and transparent processes

Shift in Leadership

- Resource Generation example

BUILDERS FOR
CLIMATE ACTION

BEAM



**BUILDING EMISSIONS
ACCOUNTING** FOR MATERIALS

Emissions of Materials Benchmark Assessment

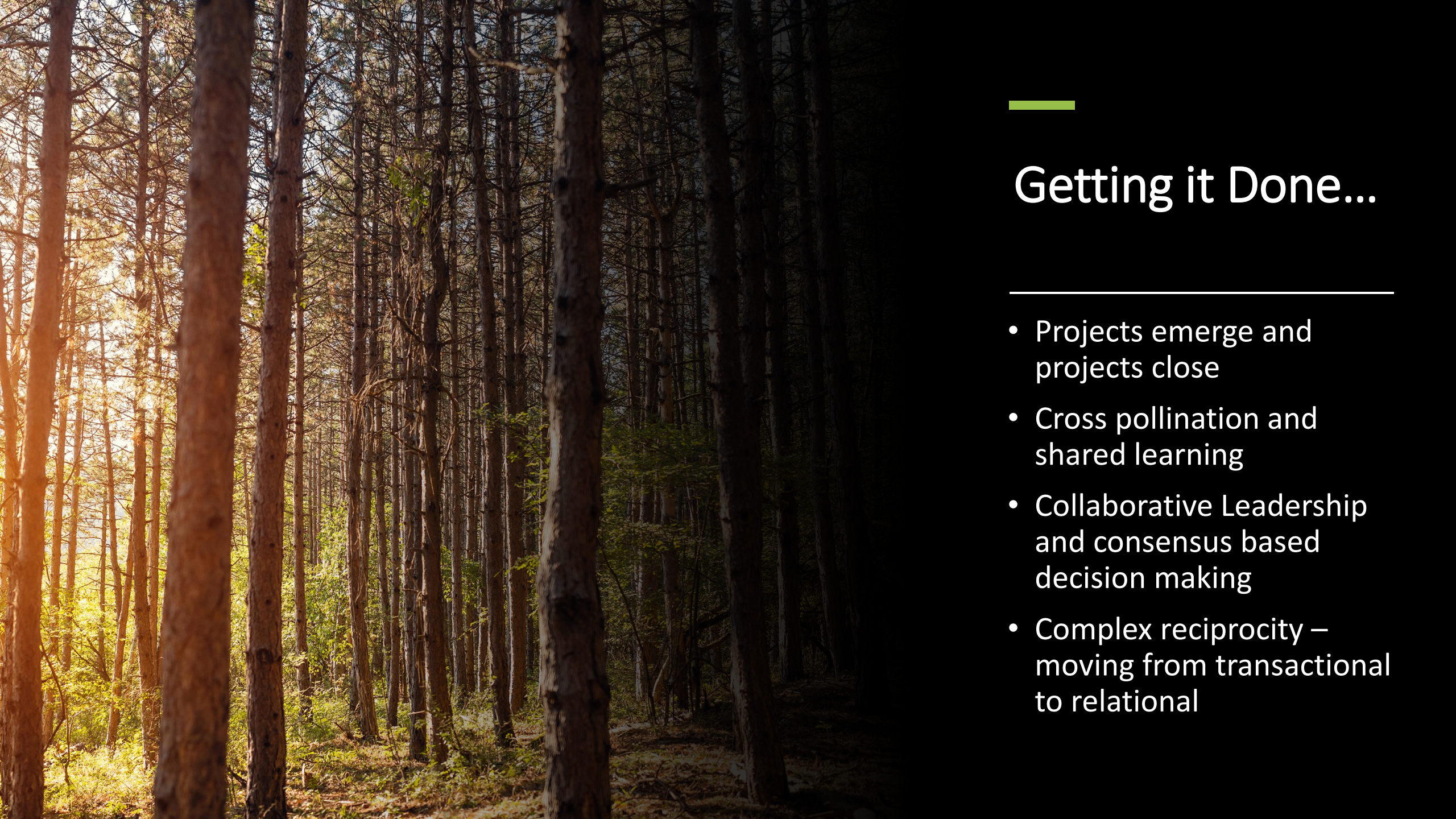
for Residential Construction



BUILDERS FOR
CLIMATE ACTION

**PASSIVE BUILDINGS
CANADA**

TAF



Getting it Done...

- Projects emerge and projects close
- Cross pollination and shared learning
- Collaborative Leadership and consensus based decision making
- Complex reciprocity – moving from transactional to relational

Thank you!

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