



NDN COLLECTIVE

»» INTRODUCTION TO ««

INDIGENOUS REGENERATIVE DEVELOPMENT

BY
DR. PENNELYS DROZ



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INTRODUCTION

We live in a remarkable time of healing and crisis; transformation and power. Ultimately, we have a need to provide homes, clean water, healthy food, energy, communications, transportation infrastructure, and a balanced economic life for ourselves in a manner that supports, cultivates and re-emerges our power, values, relationships, and community resilience in the face of change. NDN Collective understands that these values, relationships, and our knowledge of our homelands is the wisdom that needs to guide the development of our Nations into the future. We work to support empowered Indigenous communities and new regenerative systems for abundance, impact, and equity.

What does Regenerative Mean?

Regeneration means the ability to continuously regenerate life. Living in a way that fosters the continuance of life is the core of our Indigenous teachings. Regenerative practices are those that regenerate the health of the land and people. We seek to base all design and development decisions within regenerative practices.



DESIGN FOR DEVELOPMENT

Design

A standard definition of design is;

“The shaping of matter/energy, and process to meet a perceived need or desire.”¹

Design inherently connects culture to Creation, connecting our needs, desires, and ideas to the way we interact with the rest of Creation. It is a relational act. Sim van DerRyn, ecological engineer, stated;

“Design manifests Culture, and culture rests firmly on the foundation of what we believe to be true about the world.”

The design of much of our contemporary lives was based on the beliefs and values of colonial cultures. We obtain our food, building materials, and goods from far away places, much of it produced through exploitation of the Earth and workers. We live in cities and towns and villages that are often laid out according to plans that are not expressive or cultivating of our community values. The water and sanitation systems we rely on are often wasteful and create contamination. These colonial cultures are founded on beliefs of human dominance, the sense that resources belong to those who can take them forcibly from others, the values of individualism and competition, and no sense of a homeland to be responsible to. These beliefs were applied to the design and development of our current economy, governance, and the systems of infrastructure we depend on. As Anishinaabe scholar and philosopher Renee Gurneau said, “we have become financially dependent on our own cultural destruction.”

Indigenous Regenerative Design is a tool to design and develop systems, infrastructure, and economies that heal, based on our beliefs, values, and responsibilities to the Land and each other.



A **‘system’** is a collection/collective of beings/materials/processes that work together as part of an interconnected network. We recognize that it has often been used in mechanistic and exploitive contexts that diminish the living world, but it is a word that can be (and is often) used to describe active living relationships, making it an ideal term to discuss design that cultivates living relationships. In this toolkit, we apply this term to everything from water and energy systems, to organizations, to communities of people. All ‘systems’ can be designed. This curriculum will offer ways to consider systems that are designed to reflect and sustain the natural world.

Science/Engineering and Indigenous Alignment

Scientists across disciplines of study have been researching what elements, practices, and principles support the resilience and regeneration of what they call “social-ecological systems.” Through study of Creation, these scientists are slowly catching up to our understanding that you cannot separate “Nature” and “People,” or “Society.” The principles they have discovered thus far align strongly with our ways of being, teachings, and approaches.

Consistent with both Indigenous teachings and ways of being, as well as contemporary science, resilient and regenerative social-ecological systems share the following features:

- Made up of small, networked systems
- Holding a worldview of interconnected, dynamic, self-organizing social-ecological systems
- Emphasis on adaptation and continual change
- Recognizing the creative value of small disruptions or disturbance
- Recognizing the presence and importance of boundaries
- Emphasis on long-term decision making and productivity for the future
- Cultivation of diversity and functional redundancy²
- Learning from and intentional mirroring of ecological forms, patterns, and processes
- Recognition of and planning for unpredictability
- Focus on creation of strong social networks
- Encouragement of new knowledge while retaining traditional
- Land-based, relational way of learning
- Sense of responsibility for the health of social-ecological communities ^{3 4}

It can be a valuable practice to go through each one of these principles and explore how they are reflected in your Nations’ stories, teachings, and ways of life.

INDIGENOUS DESIGN PRACTICES

When preparing to design, be it a building, transportation plan, community, water system, business, or other, we encourage each person who is part of the design process to use a **design notebook** to record ideas around each of these practices in order to share with each other and ensure deep consideration and diversity of thought.

Design Practice 1: Build and Re-build your Relationships

The basis for Indigenous design is the learning relationship and responsibilities between people and homeland, guided by cultural practices, stories, and ways of being. Good design is grounded in our ability to maintain these relations. If you are a hunter, fisher, farmer, or gatherer you likely have honed the ability to observe and interact creatively with your living homeland. In preparation for design, we recommend the following;

1. Engage with the land. Communicate with your place of 'design.' Observe over time, writing down or drawing your observations if it helps you remember. Engagement can take the form of observation, hunting, gathering, and farming, walking observations.
2. Remember you live with beings capable of interacting with you, helping you, giving their consent (or not) to live and thrive with them.



The following activities can support you to transition from the daily grind to a ‘design mind.’

Activity 1: Listening Sessions

Go outside and choose a place you will go to, ideally daily, for a month. Bring a journal and write:

- I see _____
- I hear _____
- I feel _____
- I smell _____
- I taste _____
- My spirit senses _____

Complete these questions every listening session.

Activity 2: Sun Position Sketch Journal

If you are a morning person, go out every morning with your journal and sketch where the sun rises on the horizon.

If you are an evening person, go out every evening for a month and sketch where the sun sets on the horizon.

The purpose of this is to align your senses with the motion of the sun in relation to the earth in a way that also engages your mind. Connecting your feelings and heart with your observing mind in relation to the Earth is a critical skill to do design work well.



Design Practice 2: Learn and Reflect!

Learn your place well. Learn place names in your language, stories, histories, and ecological details. Don't limit the sources of potential knowledge! Gather from everywhere; stories, elders, cultural/historical book research, scientific hydrological data and soil testing. All of this knowledge is a study of Creation and is important. Make sure to reflect this knowledge with your personal observations.

When doing a design 'inventory' for a project or business, you will need to observe and journal:

- Energy flows (sun energy, people's work energy)
- Water flows
- Animals, people, and insects
- Spiritual presence and story
- Soils and rocks
- Plant types and variety
- Air flows
- Pattern of sun motion
- Land history

Design Practice 3: Mirror Creation's forms, patterns, and processes

Creation emerged forms and patterns in response to a purpose. Taking the time to observe forms and patterns creatively brings inspiration and ideas for design.

There are different approaches to pattern, form and process observations.

You can focus on

1. A particular **being** itself (plant, human, animal, rock, soil, etc.)
2. The **community** of the being
3. Extend outwards to the **entire bioregion**.

1. Knowledge related to the **being** can include, among other things:

Shape, color, volume, transparency, organization of parts and systems, structure, stability, gravity resistance, growth and lifecycle function and behavior, healing, motion and aerodynamics, flexibility and adaptation, home-making.

2. **Community** related knowledge can include survival techniques, interaction with other creatures, how knowledge is shared, how groups care for each other, communicate, collaborate and interact, and community protection approaches
3. **Bioregion** related knowledge can be looking at how the being fits in its ecology, how they adapt to climate, light, sound, shading, self-illumination, shelter building, lack of resources, waste management, water and food distribution, saving and harvesting ⁵

Each of these 'levels' of observation can be sources of knowledge.

DESIGN FORMS TO OBSERVE

BRANCHING FORMS:

Moving energy/materials/beings from one place to many, or many back to one. They can create redundancy, ensuring the system continues to function even if one branch is compromised

NETWORKS:

Connecting energy/materials/beings across space and time

SPIRALS:

Condensing and localizing energy/materials/beings. Also, a form that facilitates the moving of energy/materials/beings outwards (growth form)

EGGS/CIRLCES:

Containing, protecting, connecting energy/materials/beings

RESILIENCE FORMS:

Resilience forms and patterns condense and localize energy/materials/beings, while also facilitating the moving of energy/materials/beings outwards (growth)

- Agriculture: Different 'islands' of crops planted (avoiding rows over long distances)
- Community Design: Housing clusters (not rows) interspersed with green space and commercial zones
- Economy: Locally based trade networks, linked to bioregional networks
- Organizations and Governance: Small independent decision making bodies that come together in equity
- Energy: Community scale energy production, potentially linked to larger networks

Activity: Form Observation

Go outside to discover a form, natural process, or pattern to journal about.

What are some of the purposes of the form, pattern, motion, process? Where do you imagine it came from?

Where our work processes, infrastructure, buildings, and other designs are inspired by the forms, patterns, and processes of the natural world, our work is more efficient, our designs more resilient, our hearts more at peace, and our minds clearer. Natural lighting, windows, gardens, the presence of water, and the use of natural building and interior construction materials, as well as other, more subtle elements such as airflow variability, and dynamic and diffuse lighting, which reflect the experience of being outside and have been demonstrated to contribute to the mental, emotional, spiritual, and physical health of people.

Design Practice 4: Edges and Diversity

Think of ways to increase edge space and intersections. **Edge space** is where different beings/materials or energy come together. Examples include a meadow that comes up against the forest, the edge of a body of water, the places where different plants or types of plants come together, or groups of people of different ages, ways of thinking, and ways of being. There is typically an abundance of diversity at these edges. The intersection of ecologies (and minds, ideas, generations, etc.) is the creative space in which abundance flourishes.

Edge creation strategies include creating curved winding paths instead of straight ones, creating “lobed” garden spaces, planting diverse species, using spirals, curves and branches to distribute energy, water, or food, using contour lines and strip cropping in large scale agriculture, designing a constructed wetland with a diversity of rock and plant types and sizes, and ensuring decisions and governance is accomplished with the guidance of diverse people.



Design Practice 5: Observe and Work with Energy

Good designs are centered around caring for energy well. Different types of energy to consider include:

- The winds through the seasons
- The sunlight through the seasons
- Water flow through the seasons knowledge
- Fire and flood potentials
- Peoples' work and other energies

The question we ask in relation to the energy present in our place of design is;

How and when do we block, channel, or open to the different energies?

BLOCKING ENERGIES

Blocking energy involves the creation of protective barriers to support the thriving of life and health. Examples of blocking energy includes:

- Use of windbreaks
- Intentional shading and blocking of sun with plantings, rock, placement
- Design for flood protection and cleared or rock faced areas to protect from fire
- Creation of quiet space in public areas, homes, buildings, and community design
- Creating clearly communicated social boundaries



CHANNELING AND WELCOMING ENERGIES

Channeling energy is designing so that energy is welcomed into the place, and then given a clear pathway out. Welcoming energy involves designing to hold and retain the energy in the place for a longer duration of time. Examples include:

- Landscaping to harvest and infiltrate rainwater into the soil
- Inviting animals to share landscape through creating food and water sources or habitat
- Wind and water turbines, solar power
- Communicating clear invitations to engage in decision making, governance or social spaces
- Clearing vegetation or other blocks to allow light in
- Designing homes or communities with open welcoming space for people to gather in

Design Practice 6: Using Energy Well; Energy Recycling and Zero

Our ultimate goal is to not waste energy; the Earth's energy or ours. When we observe and become aware of energy flows we can design appropriately to conserve, recycle, and care for energy well.

SPACING AND CARE CONSIDERATIONS

Design 'elements' are the different beings and materials we work with to design a place or system. By placing design elements in the right places, we can make sure that energy flows well and is not wasted. An example includes the use of 'zones' in the design practice of permaculture, coined and articulated by designer Bill Mollison.⁶ These 'zones' are visualized as concentric circles around the center home. Design elements are placed in the different zones according to how often we engage with it/them, and the kind of care it/they need.

These zones are:

- Zone 0 - The Home
- Zone 1 - Daily engagement. In a home, examples could be the kitchen garden, herbs, a few small fruit or nut trees, greenhouse, rainwater tanks, fuel, small animals
- Zone 2 - Perennials, orchard, compost, bees, ponds, animal barns and homes
- Zone 3 - Crop farmland, pasture, bird flocks, animal forage trees, dams, landscaping for water storage
- Zone 4 - Cultivated Earth – wild foods, timber, forage
- Zone 5 - Animal homes, plant homes without regular human tending

ENERGY RECYCLING AND ZERO WASTE PRACTICES

Energy should be used as many times as possible before it dissipates outside of the system we are designing, or closes the loop. Examples include:

WATER SYSTEMS:

Water/Rainwater source collection → Water Use → Graywater System → Irrigation →
Cascading irrigation branch is compromised

AGRICULTURE:

Feeding Earth → growing food → eating food → composting food scraps and human waste → feed earth

ENERGY SYSTEMS:

Cook with energy gathered bioregionally (solar, wood, renewable sources) → use residual heat to produce hot water and/or heat home

COMMUNITY AND WORK:

Ensure people do not have to work harder or longer than is necessary for the task.
Use proper tools/teams/shared labor and time to value peoples' energy

Design Practice 7: Consider Elements, Functions, and Redundancy

An element is a being/presence in the land. The water. That tree. That soil type. The bugs. The boulder over there. Us. Thoughtful and transformative design practices analyze the needs, purposes, and impacts of the different elements, in order to align them together in an effective way, fostering good relationships with them and caring for the energy of all.

A function is the range of needs, purposes, and impacts including; needing food and water; being food and water. Needing shade, providing shade. Being medicine, needing medicine.



FUNCTION ANALYSIS EXAMPLE:

Element: Willow Tree:

Needs: Moist soil, full sun, salt, wide variety of soils tolerant, fast growing, short lived

Form and characteristics: Tall, wide sweeping multiple branches and root systems

Purposes/Impacts: Medicine, shade, construction, manufacturing, energy, remediation, land stabilization, windbreak, home for animals, living fences

So, where to place Willow in good relationship within our design?

REDUNDANCY

Redundancy (sometimes referred to as ‘functional redundancy’) is a principle of healthy social and ecological systems. This means that each need, purpose, impact (function) should ideally be supported by more than one element. It is the common sense wisdom of ‘not putting all your eggs in one basket,’ applied across the board.

Redundancy should be built into your design as much as possible. For example:

- Water needs can be provided by rainwater, city water, graywater, swales, infiltration basins, wells
- Energy needs can be provided by solar, microhydro, wind, energy efficiency design, solar heating, passive solar design, or grid power
- Food needs can be provided by diverse agriculture, hunting, gathering, and trade
- Economic redundancy can be created through multiple means of trade and production
- Animal care can be provided through diverse forage areas, traded food, ponds, and complementary animals
- Fire protection can be provided through ponds, clear roads and trails, and landscape design
- Social organizational redundancy can be built through making sure more than one person in an organization is capable of accomplishing a task, and communication systems set in place to enable smooth transition of responsibilities
- Redundancy in our needs for safety, care, and connection can be supported through building intentional relationship networks of care with one another within and outside of our small families

Design Practice 8: Value & Creatively Respond to Change/ Feedback & New Knowledge

Many of our stories share how change, chaos, or upset led to unexpected gifts for our people. The trickster, or the being who creates chaos or ridiculous mistakes, is a consistent presence in our lives, in the form of Coyote, Nanabosho, or Iktomi, offering new insights, teachings about what not to do, and stirring the pot so that new flavors can be experienced. As these teachings offer, we always need to be responsive to change and ready to adapt, learn, and look for new knowledge. This is applied in design through planning with the assumption of change and adaptation, building in redundancy. This can also be applied through planning for periodic fresh observation and feedback gathered from people, the 'system' itself, and the Land.

Every person has their own knowledge, creativity, and observational capacity. The world is a dynamic and ever-changing place. In order to prevent getting trapped in static patterns of action, behavior, or work in an ever-changing world, there need to be planned ways of incorporating and valuing new knowledge. Creating a culture that values each person's capacity to offer knowledge is important, as well as creating effective webs of communication between people, and formalized spaces to collectively incorporate feedback. Including youth and elder observation and feedback can be particularly helpful, as the youth have fresh eyes and elders can have birds-eye-view insight. Open access to documented wisdom, balanced with highly valued new ideas and knowledge, is a recipe for Indigenous resilient development.

Design Practice 9: Start Small. Remain as low-tech as possible

It is important to start small. This helps us to not be wasteful and master our skills before investing big, caring for your energy and the Earth's energy. In addition, it is important to stay as low tech as possible. This is counter to the society we currently are surrounded by, in which bigger is better and more complex and high levels of technology are glorified. When possible, keep systems simple, and install things you can fix yourself, or that can be repaired easily with local support.



Design Practice 10: Cultivate Connections and Relationships

Systems are stronger when the beings and elements within them are well connected and in good relationship. Planning for redundancy is part of this relationship-building practice, as well as cultivation of edges and diversity. Examples of cultivated relationships include:

- Use of fire to create renewed ecologies
- Interplanting complementary crops, such as the ‘three sisters,’ of corn, beans and squash or the fishpond agriculture practice of planting corn with fish, and in turn feeding fish with corn
- Designing buildings, housing, and communities with open and welcoming community spaces and green spaces
- Cultivating social, emotional, and spiritual connections through creating community space, ceremony, and support networks

Design Practice 11: Generosity, Reciprocity, Distribution

It is a healing act to design our living systems to give back to the Earth, our people, and the spiritual world. This is a foundational value of our people, and ancestrally, our ways of life and governance ensured that we lived this way. Imagining and planning this reciprocity and generosity across all aspects of our design decisions can lead us to development that is truly regenerative, offering new life.

A first step in determining how to deepen your reciprocity is to note and acknowledge all of the energy/materials/beings you will need support and offering from in order to accomplish the task. For example, if you are building a building; Where are the materials coming from? Who is doing the work? Where does the energy come from? How can you make choices that localize and reduce harmful impacts along the entire chain of decision making? Then, consider how to offer back along that entire chain. Can you plant trees, recycle water, restore habitats, generate energy, ensure workers are well cared for? We are often dependent on destructive systems these days, but through imagining and researching options to these destructive practices and keeping the spirit of reciprocity strong, we can live with more responsibility to our homelands and people.

When doing economic or production development, it is good to begin with learning or remembering how our ancestors shared and distributed resources. Even if replicating the exact ways of sharing that happened ancestrally isn’t possible, inspiration and hints for today’s economies are often present.

“It is a healing act to design our living systems to give back to the Earth, our people, and the spiritual world. This is a foundational value of our people, and ancestrally, our ways of life and governance ensured that we lived this way.”

A fundamental economic question is; How do we trade and interact with our community to cultivate good relationships and continuous life? Dr. Ron Trosper, a Salish Kootenai economist and elder, who committed much of his life’s work to researching Indigenous economies, recently published a book covering recommendations and articulating an ‘Indigenous economic theory.’ He shared that in Indigenous economies, present.⁷

“relationships are primary and.... the land and all of its components are conscious and able to respond in their own manner to the actions of humans. Whereas standard economics considers individuals the basic units of analysis, Indigenous economics considers relationships the basic units of analysis. Persons do not stand alone; they depend on their relationships, create them, and act in the context of them”⁸

Leanne Betasamo Simpson shared the same sentiment, stating,

“Our ancestors didn’t rely on material wealth for their well-being and economic stability. They put energy into meaningful and authentic relationships. So their food security and economic security was based on how good and how resilient their relationships were—their relationships with clans that lived nearby, with communities that lived nearby, so that in hard times they would rely on people, not the money they saved in the bank. I think that extended to how they found meaning in life. It was the quality of those relationships—not how much they had, not how much they consumed—that was the basis of their happiness.”⁹

Trosper also shared that, in this world of imposed individualism and capitalism, Indigenous folks, where they have had the land base and power to do so, have developed ‘hybrid economies,’ to be able to maintain at least some of their values while making a living in the larger system. He stated, “ Hybrid economies result when Indigenous peoples try to limit the dangerous effects of individualization and of disrespectful treatment of all living beings.”

An exemplary model of a hybrid economy is the Menominee Tribal Enterprises’ forestry operation. The Menominee have produced timber for sale for 150 years in a manner that protects the forest’s health and the diverse ways the Menominee people utilize the resource relatives in the forest.¹⁰ We will explore and share strategies and practices used by our peoples to create thriving Indigenous economies in section 2. of this curriculum, but for this introduction, we will share the principles we have developed at NDN Collective to guide our economic decision-making.



INDIGENOUS REGENERATIVE ECONOMIC PRINCIPLES

We support development and investment that is based on the following principles:

1. THE INTERCONNECTEDNESS OF ALL THINGS

All living things are interconnected, in relation to one another, and operate as a system. Relationships create life, and it is the quality, balance, and health of our interconnected living relationships that determine whether an act is going to be healthy and regenerative of life. We support development and investment that places central value on maintaining and regenerating healthy and balanced relationships with the Land and all of the beings that give us life. Being in good relationship can take many forms, including:

Reciprocity: Honoring the gifts of life we are given by ensuring we also give back to the sources of life.

Generosity: Ensuring that the benefits of a project, business, or program are felt and received by many. Building too much excess resource without distributing is counter to the teachings of our cultures and the teachings of the Land.

Mirroring of Creation and Natural Principles: The ultimate source of knowledge of how to cultivate healthy, harmonious relationships is the Land and Water. Healthy ecologies are diverse, have good energy flow, are circular/nonlinear, and feature an abundance of life and creativity at the edges, or where different ecologies come together. Diversity, ensuring energy and resource flow, circularity, and creation of areas where different ecologies, patterns, societies, ideas, intersect are just a few of the principles we can incorporate into our development projects and businesses.

Cooperation and Collaboration > Competition: Cooperation and building of collaborative partnerships works better than competition at creating ways of being and acting that regenerate life.

Boundaries and Checks on Excess: Boundaries are important for respectful relationships that honor the participants in the relationship. In our work we need to analyze which boundaries and limitations are necessary to ensure the continuance of health. We are surrounded by a society that lives in excess and rewards individualism and greed. We need to honestly evaluate what we need to live and thrive, and continuously be aware of the pressures we may feel to take too much.

2. INDIGENOUS SELF-DETERMINATION

The self-determination of Indigenous Peoples is the cornerstone of our purpose and existence. We support efforts that are Indigenous-led and in alignment with our values. The people most impacted by systems of oppression must be the ones to lead their communities to equity, justice, and liberation. NDN Collective supports economic practices that ensure the maintenance and increase of our land base, sovereignty, rights, and collective healing.

3. INDIGENOUS WAYS OF KNOWING

We know that things are always changing, so we need to be innovative, adaptive, creative, and responsive to changes. The ultimate source of knowledge is the Creator, the Land, and the Water, and we encourage traditional and contemporary practices designed to emerge new knowledge from these sources. We also need to have our knowledge rooted in our teachings and the cumulative knowledge of our ancestors. Development work and decision making should include a balance of both of these elements.

4. ROOTED IN AND HONORING OF PLACE

Inherently, Indigenous regenerative economics recognizes our responsibility to care for the continuity of our homelands and our cultures that came from these lands. Our practices need to be designed to ensure the continued ability of our lands to give life.

5. EQUITY AND JUSTICE FOR ALL PEOPLE AND MOTHER EARTH

Our economic and investment decisions must be centered in the creation of equity and justice. Examples of implementing equity and justice measures can include:

- **Community Participation and Investment:** Deep participation from affected peoples and communities in the design of the system. Ensuring childcare, transportation, and disability accommodations so that participation is truly accessible.
- **Accountable Leadership:** There should be mechanisms in place to make sure that leaders are accountable to the community and land they affect and are in relationship with.
- **Localized Decision-making:** Decision making should be as local as possible so that the ones making decisions feel the impact of their decision making.

6. RECOGNITION OF TIMELESSNESS AND RESPONSIBILITY TO OUR FUTURE

We understand that we are always connected to both our ancestors and descendants. Our planning, decision-making, and actions today should honor the legacy, struggle, and knowledge of our ancestors while working towards a healthy future for our descendants into perpetuity.

VALUES AND PRINCIPLES IN PRACTICE

We need to re-center these values and principles to self-determine the structure of our economies, and only then seek economic partners, rather than focus our efforts on becoming attractive to outside investors who often resist collective land ownership and community decision-making processes.

COMMUNITY VISIONING AND ECONOMIC MAPPING

To begin this self-determination, we suggest coordinating community visioning/mapping sessions within our Nations and communities to determine economic strategies that express the values and visions of the people. Within these sessions, it can be helpful to explore the following:

1. Re-value and re-centralize our traditional practices:

Production and harvest of our foods and materials, and the creation of products that come from our communities serve an economic and a culturally revitalizing purpose, connecting us to our ancestors and descendants, our teachings, and a creative ongoing relationship with our homelands.

2. Re-centralize the practical needs of the people first:

What do we need to thrive? How can we provide for these needs in as local a manner as possible? What products do we have to trade for? Are there other Indigenous people we can trade with? Local, bioregional businesses or co-operatives we can trade with? The more people directly experience the impacts of economic decision-making, the less likely folks will make decisions that are harmful to the land or their neighbor.

3. Look to our lands and waters:

What abundance do they offer? What can the land create/regenerate? What can we give back to the land to cultivate the regeneration of life? These questions should underpin new economic development ideas.

4. Look to our people:

What creative visions and skills do we have? What can we create/regenerate? What reciprocal relationships can be encouraged in your community to allow people to be supported in their work? These questions should also underpin new economic development ideas.

5. Explore ways of making your teachings and spiritual values the core guiding principles of any economic idea. Explore ways of re-integrating traditional resource distribution practices, as well as governance and community accountability mechanisms. Understand that re-integration of our practices will likely take some time, mistakes, and patience.

6. And, above all, remember that **we are the ones with the solutions to our challenges.** We can also learn from and share ideas with other Indigenous peoples and Nations who are exploring ways of rebuilding our economies.¹¹



INDIGENOUS DESIGN PHASES

Each of our Nations and communities are different, with different stories, priorities, needs, and ecologies. Indigenous design and development places good relationships at the center, and the process itself can become a healing practice to bring people together across our diversity.

Indigenous Design phases include:

1. Identify the Design Team
2. Create the Foundation
3. Engage in Land Based Learning
4. Visioning the Whole and Inventory Creation
5. Identify Design Goals, Create, and Evaluate Options
6. Design, Creation and Implementation
7. Evaluation and Learning for Adaptation

1. IDENTIFY THE DESIGN TEAM

There are two parts of the design team: 1. The leads responsible to gather the information necessary to make good design decisions including the community lead, and the drafters/architects/engineers/managers, and 2. community members who have a stake in the design outcome. Even though community members may not hold knowledge of the details, techniques, or technologies of the project, plan or business, they hold knowledge, advice, guidance, and may have concerns that are critical to include in the planning process. It is the responsibility of the community lead to facilitate the relationship between the two parts of the design team. It is also the role of all team leads to create the environment, safety and space, and good communication necessary for community members to embrace their important role.

Design Charrettes

Design 'charrettes' are a standard practice to gather collective community input. A charrette can also be a location to provide community education on the project or business, and the intentions behind the development. Typically, depending on the depth and impact of the project, there are multiple charrettes as the design is developed, allowing feedback and communication throughout the process.

The public announcement for the charrette can be a call to learn and provide guidance. *Make sure that you reach out and ensure access for folks.* Provide childcare, snacks, and see if transportation can be arranged for those who want to attend but do not have transportation. It is important to include the voices of elders as well as youth, so make it clear in the advertising that they are encouraged to come learn and provide guidance.

Structuring your Meeting

Lay out the meeting room in an open fashion, either in a circle, or where participants can gather around small tables. Have butcher paper or a chalkboard up where the information can be recorded in plain sight. Keep your team's initial presentation brief - 15-20 minutes, describing the idea for the project/business/plan, the intention, and the agenda for the session. The agenda will differ according to your project, but should include:

- Opening prayer, gratitude, or grounding practice
- Introductions and a brief personal share of what brought the person to the meeting
- Input gathering around specific questions relevant to the project or business
- If there are more than ten people, they can be broken up into groups to think about the questions together
- An open space created for questions/concerns/input to be expressed and addressed
- Closing expression of gratitude and a way to stay connected to each other

There are trained charrette facilitators that can be brought in to support this process. Equally important is the development of skills and capacity within the community to serve their own needs. If possible, plan for education and skill development support as part of the design and implementation process.

2. CREATE THE FOUNDATION

Once the design team is established, initial charrettes should be hosted to identify common founding values and vision, individual and team roles, responsibilities, and communication approaches. These values, vision, roles, and communication agreements should be documented physically and made accessible to everyone. Helpful questions can be:

- What are the values that make you who you are as a people?
- What is a vision for this (project/business/organization), based on our shared values?

3. ENGAGE IN LAND BASED AND TRADITIONAL LEARNING

The basis for Indigenous design is the learning relationship and responsibilities between people and homeland, guided by culture and teachings. Good design is grounded in the peoples' ability to maintain these relations, and where this engagement has diminished, it should be renewed as the first step in the design process. In this phase the design process may engage traditional knowledge holders with others involved to renew, re-empower, and pass on knowledge and practices that are critical to engaging in this learning relationship. This can also be reinforced by the simple practice of each design team member observing the land and relations present in solitude, daily, over a particular period of time, as well as engaging in group walk-throughs, ceremony, and other gatherings held on the land. The important values, understandings, stories, and relationships that come to light from this phase should be documented.

4. VISIONING THE WHOLE AND INVENTORY CREATION

The lead design team is responsible for the creation of a visual map illustrating all of the *elements*, as explored in the previous section, that are considered the ‘whole system’ in relation to the design. In this phase, inventory of the whole system is compiled, achieved through documenting information about the design site obtained through traditional knowledge, learned observations, as well as standard scientific survey and data. This inventory can be a physical or online folder with sections for the different types of knowledge to be considered in design.

5. IDENTIFY DESIGN GOALS, CREATE AND EVALUATE OPTIONS

Once inventory is taken, documented, and approved by the design participants, specific design goals are outlined. The impacts of different design decisions on the whole system are considered, as well as different alternatives for meeting the design goals. Considerations of mirroring Creation, enhancing networked relationships, respecting the life in the land, energy recycling, and using simplicity and redundancy to address unpredictability are included. The base design is then established, requiring multiple co-design sessions during which the design is taken through several iterations until it represents the gathered understanding and experience of the team, as well as precautions put in place for future design adaptations.

6. DESIGN CREATION AND IMPLEMENTATION

At this point, the engineer, designer, planner, or other people responsible for the drafting process produce the final drafted design document. Upon approval by the design team, this document is used to implement the final project, be it a house, community plan, water treatment facility, economic planning document or farming system. Where possible, the design participants can also be part of the installation, construction, or implementation team, further cultivating their responsibility and connection to the system or building, their community, and each other.

7. EVALUATION AND LEARNING FOR ADAPTATION

Because life is always changing and learning is never-ending, the design should also be evaluated periodically to assess possible adjustments and adaptations, learning from issues and including new knowledge.

Detailed care and management of infrastructure development processes specific to different types of infrastructure, building, and systems are shared in the upcoming topic-specific sections of this curriculum.

CONCLUSION

Our Indigenous communities hold vision, knowledge, and responsibilities to our homelands, ancestors and descendants. This vision, knowledge, and responsibility, as well as the immediacy of our needs, are a profound creative source of transformational strategy and action. The same teachings that allowed our people to survive the various apocalypses our ancestors journeyed through offer us pathways forward through the impacts of globalized capitalism and climate change; to deepen our vision of what is possible, and to guide our decision making in governance, community care, design and development. Contemporary best practices in architecture, design, engineering, and resilience science illustrate that these fields are catching up to our teachings, and this alignment has been creating a new pathway of communication that can ease the Nation-scale application of Indigenous Design. It is our time to build the power of our Nations, leading the way to a future of equity, justice, and care of our Mother Earth.



INDIGENOUS DESIGN DECISION MAKING TOOL

This is a tool developed to support the Indigenous design decision making processes related to infrastructure, business, and community development. We suggest that you and your team work through each of these questions to deepen the regenerative nature of your project, program, business, or organization.

CLIMATE AND ECOLOGICAL CHANGE

1. If your region experiences fires, floods, tornadoes, and other natural disasters, what is your design response? Does your project/business/program include design and planning for this response?
2. What ecological systems, beings and processes (water, Earth minerals, climate, animals, plants, energy sources, people, etc...) does your project/initiative/business rely on? If they are impacted or change, what are your backup and adaptation strategies? How will you mitigate any potential harm?

GOVERNANCE AND COMMUNITY SUPPORT

3. How will you protect your project/initiative/business from unpredictability related to community governance/decision making and community support?
4. Did the creation of this project or initiative include diverse community stakeholders including those who would be affected by the project/initiative?
5. Brainstorm a list of all those impacted BEFORE extensive investment is made into the project initiative and/or business development. Who would you impact through your operation? How will you include those impacted in the development process?

6. What is your strategy for building healthy relationships and caring for conflict?
See Caring for Conflict addendum

ENERGY EFFICIENCY, SOURCING AND CIRCULARITY

7. Do you use multiple strategies and sources (redundancy) to provide needed processes, materials, or energy?
(ex. diverse sourcing of raw materials; both off grid and grid tied renewable energy and energy recycling; diverse locations of information/materials storage; are multiple people trained to do critical tasks across the business ecosystem?)

ENERGY EFFICIENCY, SOURCING AND CIRCULARITY EXAMPLES

Are you providing electricity through multiple sources? Do you have on grid energy, and also back up generators or battery storage? Are you able to employ renewable energy sources, or is this in your future planning? Can some of your electricity needs be met through energy conservation methods? Can your energy use serve multiple purposes and be recycled?

For example: you own a wood fired bakery. The wood is sustainably harvested, and the stove you use is a high efficiency masonry stove that is designed to be integrated with your HVAC systems to also provide heat for the bakery in the winter time. The stove is also designed with hot water coils so that the pre-heat for your hot water heater can be delivered by the operation of the stove. The use of one energy source meets many needs.

Another Example: You have a need for cooling your building. You can plant deciduous trees on the south facing side of your building, and also create a retreat space where your staff and visitors can gather. An additional level of redundancy would be having these deciduous trees be fruit or medicine trees, or creating a native plant medicine, food, or basket material garden in this shaded retreat space.

A Social Example: Your team needs management decision making over aspects of the business.

- Do you have back up decision making strategies and processes if a manager is unavailable?
- Do you have diverse strategies to achieve your purpose?
- If you run a business, do you have multiple 'markets,' and diverse offerings that are available for purchase by different parts of the community? Do you have diverse suppliers, or supplier contacts?
- If you run a project/program/initiative, do you have multiple methods to achieve your mission?

Decentralization, even as a backup plan, of your work's processes is vital.

8. Are energy/materials (including peoples' energy) recycled and used efficiently?
(ex. Can the energy used in production also be used to heat/cool your buildings or pre-heat water? Are waste materials able to be repurposed into another product, even by another organizational partner? How does your project/business infrastructure, work hours, and work delegation impact the wellness (caring of the bodies, minds, and spirits) of the people doing the work?)

9. Does the project planning and structure begin on a small scale, use low tech if possible, and build in complexity as necessary?

10. Does the project/initiative utilize ecological systems to achieve ends where possible?
(ex. Can planted beds and constructed wetlands manage your wastewater? Can trees provide erosion control, shading, and cooling? Can your waste be effectively composted? Can creek water flow, sun, or wind provide your energy?)

11. Does the project/initiative preserve or enhance the surrounding ecology?

12. Is the project/initiative design inspired by and include the natural forms, patterns, and processes of Creation where relevant?

(ex. Agriculture modeled after productive, diverse, mosaiced pattern of natural ecologies; transportation infrastructure for people, energy, and materials taking cues from the efficiency of branched forms in Creation/Nature; buildings designed to maximize ventilation inspired by the ventilation and flow in termite mounds, etc.)

CULTURAL & SOCIAL

13. To what extent does this project/initiative express the values of your community and culture?

14. To what extent does the project/initiative encourage connection of people to their homeland?

15. Does the project involve or encourage multiple connections and relationships between different people and organizations within the community and region?
(ex. is your team made up of diverse people? Who are your partners? Does your economic, transportation, or housing design encourage interconnectedness of people?)

16. Is there an active process in place to value and creatively respond to new knowledge and change?

HEALTH

17. Does this project improve the overall health of the community through cultivation of healthy relationships, improving economic opportunity, housing, education, innovation, social cohesion, safety from crime?

18. Does this project improve the health of the community through improving access to food, access to clean water, access to natural and green space, encouraging physical activity, and healthy, clean ecological surroundings?

GENEROSITY AND ECONOMY

19. Does the project or initiative give back to the people, earth, and community? How does this project ensure that the people, earth, and community are better off seven generations from now?

INDIGENOUS TEACHINGS/ SCIENCE ALIGNMENT ON RESILIENCE NOTES

According to our original teachings, stories, and ways of being, and contemporary science, resilient and regenerative social-ecological systems share the following features. Use this notes section to explore how your teachings, ways of life, and stories might align with these principles!

- Made up of small, networked systems
- Holding a worldview of interconnected, dynamic, self-organizing social-ecological systems
- Emphasis on adaptation and continual change
- Recognizing the creative value of small disruptions or disturbance
- Recognizing the presence and importance of boundaries.
- Emphasis on long-term decision making and productivity for the future

- Cultivation of diversity and functional redundancy¹²
- Learning from and intentional mirroring of ecological forms, patterns, and processes
- Recognition of and planning for unpredictability
- Focus on creation of strong social networks
- Encouragement of new knowledge while retaining traditional knowledge
- Land-based, relational way of learning
- Sense of responsibility for the health of social-ecological communities¹³¹⁴

CARING FOR CONFLICT

By PennElys Droz and Susan Beaulieu

Indigenous regenerative design and development is based on healing exploitation and building good relations. This includes with each other, which can be the most difficult part. For generations our people have experienced the impacts of colonization. The settler colonial mindset and practices have attempted to sever or degrade our sources of strength in order to extend power and control. Our connection with our land and sources of life, as well as our connection to one another as community and family are some of our strongest sources of strength, and all have been targets of intentional disruption. This has taken the form of physical occupation, genocide and land theft, the creation of economic dependency (economic colonization), deep emotional and psychological wounding through the attempted dismantling of family and social structures, and spiritual disruption. Colonial dominance and boarding schools enforced a system of belief that everything Indigenous is lesser, creating intentional hierarchies and division in many of our communities.

The subjugation and forced assimilation of our peoples that we have experienced has led to hierarchical thinking and 'othering' our own. The exploitation of our lands and communities, including the disruption or destruction of our traditional economies and subsequent enforced dependence has led to a scarcity mindset. Our work today involves the deep healing of these disrupted connections, and the undoing of generations of impact. It is not easy, and it takes deep courage.

Creating spaces of nurturance, boundary-setting, reflection, community support, and healthy conflict care is crucial to maintaining the heart-strength necessary to do this healing work for ourselves, our communities, and the generations to come.

"Our connection with our land and sources of life, as well as our connection to one another as community and family are some of our strongest sources of strength, and all have been targets of intentional disruption."



ON CONFLICT

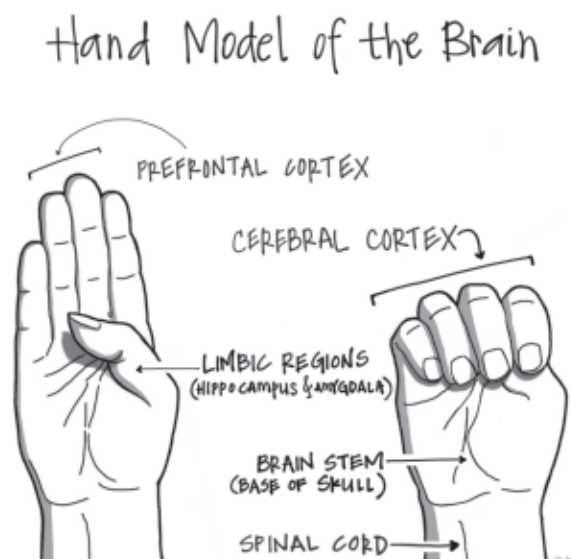
Conflict can be medicine

In traditional stories and the scientific study of resilience, it is shown that disruption and conflict can be a powerful source of new information, new ideas, and sometimes, the 'shake-up' that needs to happen to reveal healing, communication, or other things that need to be tended to.

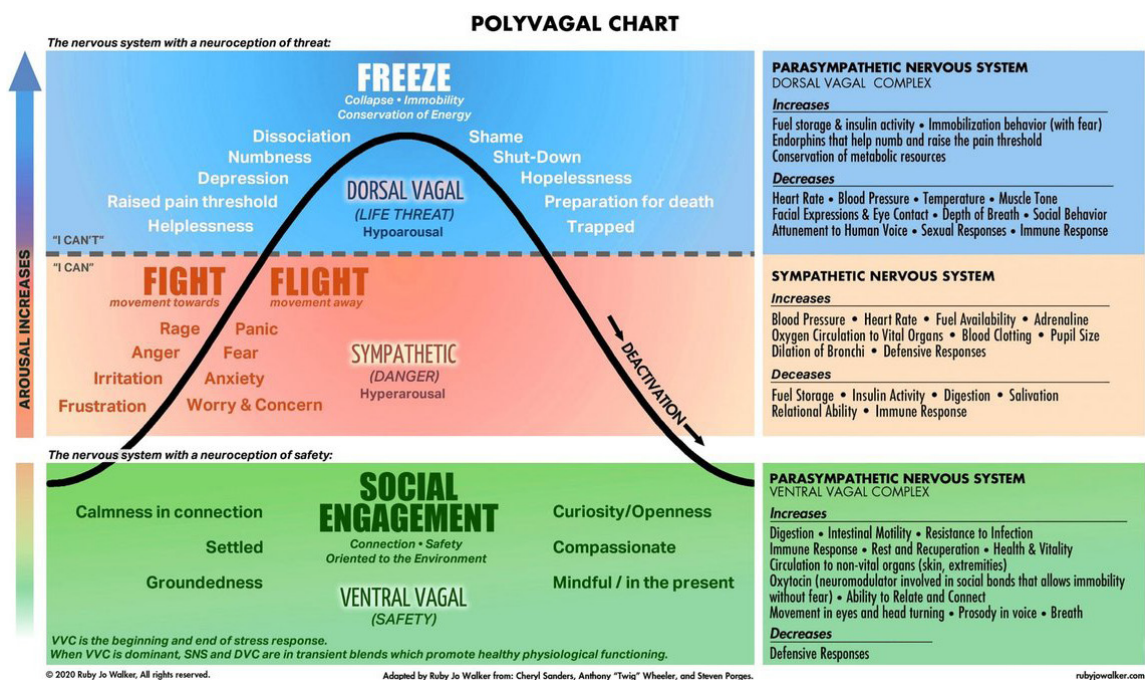
Our perceptions of conflict are shaped by how we saw conflict 'done' while growing up. If conflict meant violence, other lack of safety, and harm, then any kind of conflict today can elicit a strong response of fear, avoidance, or aggression in us. These are also known as "trauma responses".

Trauma responses throw us into our 'flight, fight, fawn, freeze' response and stand in the way of making clear headed decisions and caring for our relations. Most of us are familiar with flight, fight, and freeze, but it is helpful to note that 'fawning,' which can include soothing the person who is triggering our trauma response, or people pleasing to avoid conflict, is another common automatic response. Trauma also impacts our experience of felt safety. You may actually be safe, but not feel safe due to trauma responses. Safety is the prerequisite for trust, and trust is the foundation of caring for conflict well and coming into good relationship with others.

When information comes into the nervous system through our senses, it gets sent up the spinal cord to the brain, and travels from the bottom of the brain up to the top where different parts of the brain process and assess the information for "danger". If information is deemed dangerous to our survival, which is always determined by our previous life experiences, as well as our ancestors, then we "flip our lid". When this happens the thinking part of our brain (the prefrontal cortex) goes offline, and the survival parts of the brain go into automatic responses based on survival in the past, including across generations. This is what leads to the "fight, flight, freeze and fawn" responses.



This diagram describes the different states in our nervous system, and what can happen when we are faced with a conflict.



We live our best lives and are able to more easily create the lives we want when we are able to navigate from the “green”, ventral vagal state. In this state we feel safety and connection, which allows us to be open, curious, compassionate, and in the present moment.

However, stress and challenges are a part of life, and when it occurs we begin to move up into the “red”, sympathetic state, also known as “fight or flight”. This state is often accompanied by emotions such as frustration, anxiety, anger, and panic; it also has a cascade of physiological responses in the body to prepare us for fight/flight. The higher up we go into this state, the more intense the emotions and physiological responses become. However, because this heightened state uses high levels of energy, our bodies can only be in this state for short bursts of time. Long-term survival requires that we address the threat as quickly as possible, then shift back into the “green” ventral vagal state and homeostasis.

If we are unable to run or fight the threat, the next best option for survival is the “blue”, dorsal vagal state. This is also known as the freeze state, which numbs the emotional and physiological energy overwhelming our nervous system so that we don’t feel the pain of what’s happening to us, or so we can continue functioning to some degree. Although we are able to survive in this state, it requires us to numb to ourselves and others, which makes it impossible for us to thrive. Additionally, we often need support from others, or time to develop personal skills, to help us navigate out of the dorsal and sympathetic states in order to move back to the “green” state.

Ideally, we are able to respond to conflict from a grounded, centered place, shown here in the green. Different people will have different strategies that work for them to arrive at that calm, centered place.

GROUNDING INTO THE GREEN

If you find yourself in a trauma response, we offer a few steps to take;

1. Make sure you are actually safe.

Remove yourself from the thing sparking your trauma response, if possible. Breathe deeply, and ask yourself if what you are experiencing is actually dangerous. If it is, then your trauma response is the gift our bodies give us to keep us safe, and we can get to a safe place, through establishing boundaries, getting away, or otherwise finding safety. You may need to reach out to family or a friend, grassroots or professional support networks to find and build a pathway to safety.

2. Breathe deeply and intentionally, and physically relax your body.

Trauma responses usually tighten up our muscles and make our breathing short and fast. Your breath is the most powerful tool you have to influence your nervous system, and slow deep breaths, with long extended exhales sends the message to the brain that the body is not under threat. Conscious, deep belly breathing, and intentionally relaxing our muscles is a way to allow the body to speak to the brain and nervous system, letting it know your survival is not under threat and you can bring your prefrontal cortex back online and drop back into the “green.”

3. Anchor yourself.

Drawing your attention to the presence and details of the immediate time and place you are in can center yourself in the actual safety of your present moment and place. Using your five senses of sight, sound, feeling (sensations), hearing, and taste, are a great way to ground yourself back in your body and the present moment.

4. Find your medicine.

Smudge, go outside, find beauty, call your grandma. Reach for those things that bring you medicine and help you regain your power and your center.



CONFLICT AND BEING A GOOD RELATIVE

When we approach conflict ‘in the green,’ we are able to treat conflict like medicine. We remember our interconnection with the relative we are in conflict with, understand that conflict is inevitable, perceive it as an opportunity to strengthen the relationship, and help us move from rupture to repair. Sometimes, conflict done in a healthy way shows us that we need to change the relationship we have with another person, and create respectful boundaries and space. That is also a possible healthy conflict outcome.

Susan Beaulieu, NDN Collective’s Healing Justice Director
offers the 3 Rs of conflict care

Recognize if you’re experiencing the conflict as a challenge, or as a trauma. Do what’s necessary to shift to “challenge.”

Relationship: Center the relationship and bring in compassion and empathy for yourself and others. We are all doing the best we can.

Recharge: Take care of yourself. This work takes a lot of energy; take time to recharge!

COMPASSIONATE ACCOUNTABILITY

While it is important to have compassion for our own challenging life circumstances, as well as that of others, we must hold each other accountable to being a good relative; otherwise, we allow harm to continue rippling out. Compassionate accountability means having both compassion for the trauma endured, but also stopping harm when it happens, exploring the root of the harmful behavior, and actively working to change the behavior and repair the relationship.



PLANNING AND STRATEGY FOR CONFLICT CARE

Individuals

On an individual basis, planning and strategy can look like:

- Self Awareness
- Know your Triggers and Medicines
- Recognize what's yours and what's not
- Find a daily practice for self-regulation, grounding, balance

Organizations, Businesses, and Communities

Organizations, businesses and community groups have two different types of conflict they can prepare and create plans for: internal conflict and external conflict.



Internal Conflict

1. Communication and clarity is Conflict Prevention!

Good communication practices, documentation of important things with easy and equitable access, and clearly delineated roles, tasks, leadership expectations, and backup support for workers can minimize or prevent much internal conflict. **Making a practice of regular feedback and planning adaptation sessions will help** with this clarity and establish good communication. It is particularly important for folks in leadership roles to make sure that those around them feel safe and comfortable to give feedback.

2. Document Conflict Care

Your organization, business, or community group can work on establishing agreements that are documented for future reference. External consultants and facilitators can be invited in to support this development. These agreements can include:

- a. Agreed upon values, and culture around conflict.
- b. Each team member commits to doing their best to care for their personal health (see individual planning and strategy for conflict care).
- c. Process Agreements: **How should conflict be raised?**

If you are the one bringing it to the table: Have you arrived closer to the green? Who can help you with this? Who are your people/tools that can support this?

If you are the one hearing the issue of conflict, are you hearing it in a trauma lens? How can you ask for pause to ground yourself? This pause does need a time boundary or it can be weaponized against the one bringing the issue to the table, or simply used as an avoidance tactic. We recommend no more than a week of pause.
- d. When do you reach for internal peer support? Who are agreed-upon internal peer facilitators?
- e. When do you reach for external support?

External Conflict

1. Communication and Clarity is Conflict Prevention!

How can your organization/business/group function in a way that is clear in purpose and practice? If you are going to be engaging in something you know will elicit discomfort from some, how are you proactively communicating your intentions and reasoning?

2. External Conflict Care

- a. Initial Respectful Response
 - i. Thank them for bringing it up. Let them know you are going to consider what they said, in a caring and open manner.
- b. Get in the Green; use your tools.
- c. Internal Dialogue with individuals, and as a team; is this conflict showing you where you need to grow? Is this a lack of communication on your part?
- d. NEVER IGNORE anyone; respond to everyone. It can be tempting to ignore folks that feel like they are simply being crabs in the bucket. You do not need to get drawn in to back and forths with folks, but you should respectfully create a clear response to everyone, even if at the end of the response, you share that you cannot engage any more.
- e. Clarify your organization, business, or groups' response message to all internal team members collectively, and respond to everyone, even if it is a boundary or a "no", shared with empathy and care for the person.

Conflict is always uncomfortable and often difficult. Understanding how we can engage in a medicine relationship with conflict, from a place of strength and groundedness, can open up pathways for healing relationships that can be transformative for ourselves, our communities, and our homelands.

ENDNOTES

- 1 Van derRyn, Sim. Ecological Design.
- 2 Definition will be explored in 'Design Practice and Principles' section
- 3 Hollnagel, E., D.Woods, and N. Leveson. Resilience Engineering: Concepts and Precepts. Ashgate Publishing, 2006.
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- 10 <https://www.mtewood.com/SustainableForestry>
- 11 <https://ndncollective.org/stories/rebuilding-indigenous-economies-and-remembering-how-to-creatively-thrive%E2%82%AC%81/>
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- 13 Hollnagel, E., D.Woods, and N. Leveson. Resilience Engineering: Concepts and Precepts. Ashgate Publishing, 2006.
Matlock & Morgan, Ecological Engineering. 2011.
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