

A serene landscape featuring a calm lake in the foreground that perfectly reflects the surrounding environment. In the background, there are misty, rolling mountains and a dense forest of evergreen trees along the shoreline. The overall color palette is soft and natural, dominated by blues, greens, and greys, creating a peaceful and atmospheric scene.

RESILIENT COMMUNITIES

A PARADIGM SHIFT

PROJECTS AND APPROACHES

- AGENT OF COORDINATION
- A VALUE CHAIN
- CASA
- CHIHUAHUA PROJECT
- KITSAP RESILIENCY PROJECT
- CALIFORNIA WATER



AGENT OF COORDINATION

MAKING CONNECTIONS

CONCEPT AND CONNECTIONS



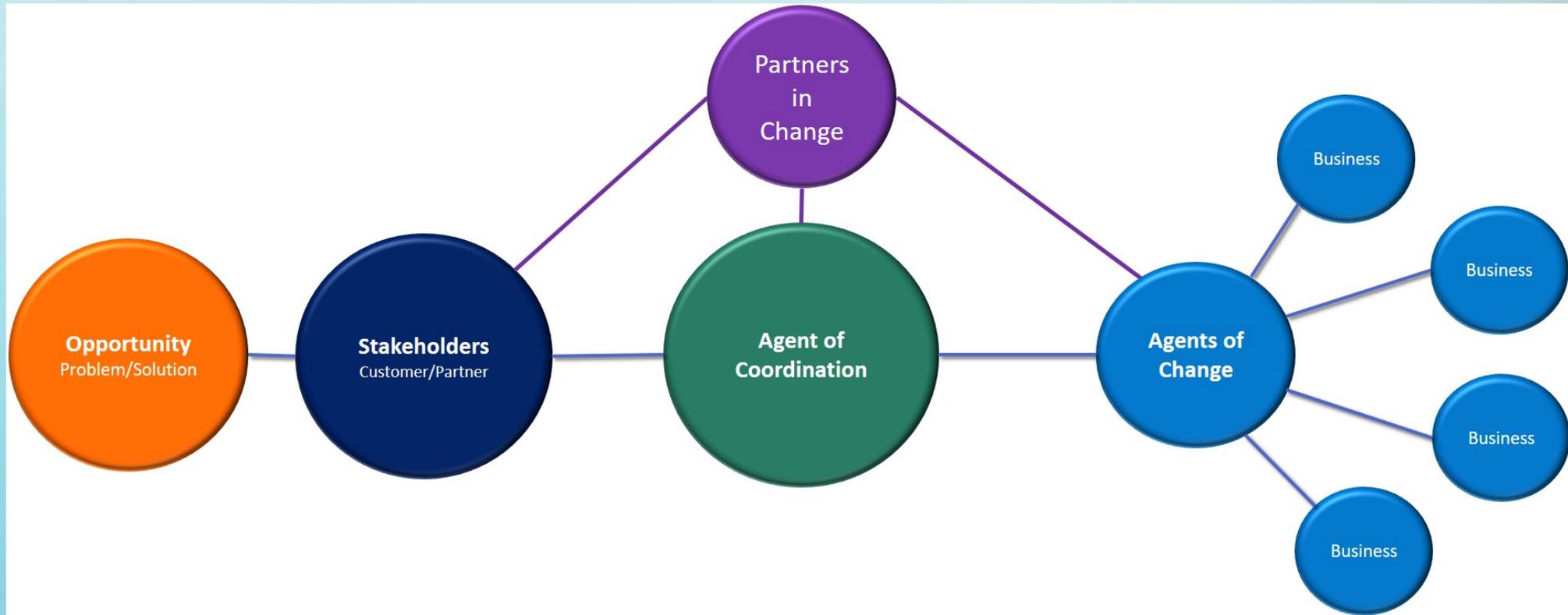
The Clean Technology Trade Alliance (CTTA) is an Agent of Coordination, a new type of organization that facilitates a shift toward resiliency and sustainability through the development and implementation of projects. CTTA is defining the coalition approach and redefining traditional relationships to solve the very complex problems facing us today.

FACILITATING COMPLEX PARTNERSHIPS

Agents of Coordination identify a problem, then develop a concept to address both the symptoms and the causative issues. An Agent of Coordination then develops innovative coalitions that build partnerships that include the stakeholders and businesses, creating the leverage needed to access and acquire necessary funds. The Agent of Coordination then provides the coordination necessary for a sound foundation, successful integration, plan development, full participation and a complete resolution.



PICTURE IT...

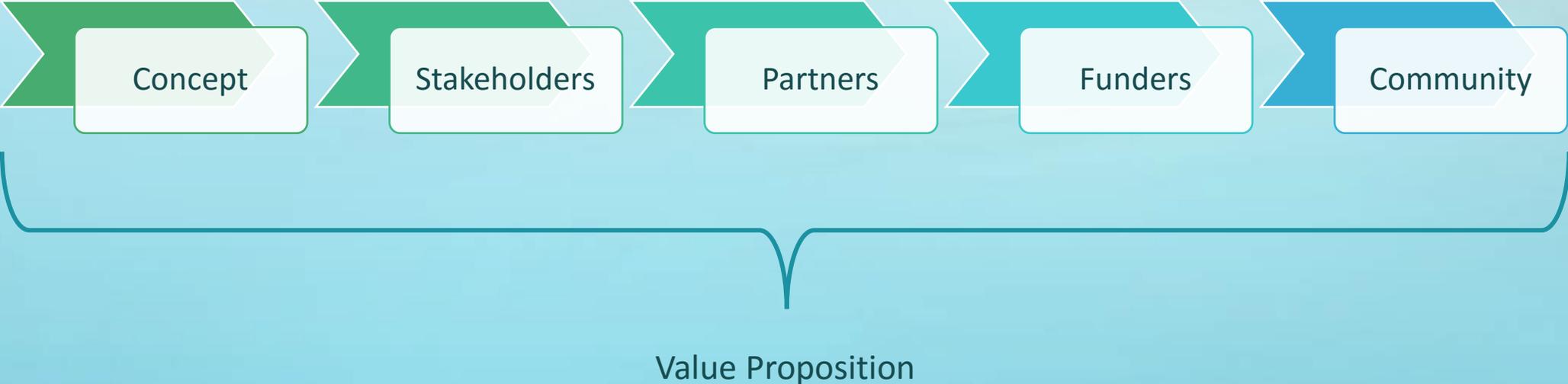




THE VALUE CHAIN

THE REAL WORK

DEVELOPING AND COMMUNICATING VALUE



ELEMENTS



A resilient community is one that has capacity to retain essential functions in the face of internal or external disturbances; it is capable of self-organization and learns and adapts to face future shocks. Resiliency is more than just disaster planning, it is creating systems that support healthy vibrant communities under normal circumstances that also function under extreme stress, ensuring that recovery occurs quickly and fully.

Resiliency can be applied to the four community aspects: Health and Wellbeing; Economy and Society; Infrastructure and Environment; and Leadership and Strategy. The qualities of a resilient community are: reflective, resourceful, robust, redundant, flexible, inclusive, and integrated.

Value Development



CASA

AGENT OF CHANGE

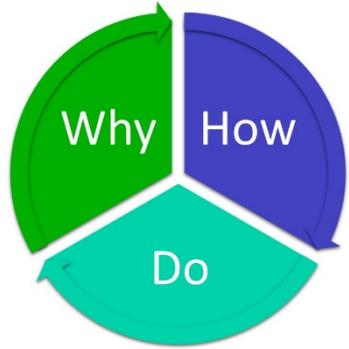
THE CASA STORY

Collaborative Association for Sustainable Aguaculture CASA

The CASA Project started as an exercise in problem solving that addressed one issue in a specific region that desperately needed a solution. For the past four years the Clean Technology Trade Alliance (CTTA) has been researching agriculture, food security, the supply chain and looking into the silos of various technology, design and environmental approaches to verify a concept to reverse the issues that caused the condition of lost agriculture due to desertification in Chihuahua Mexico.

In developing the CASA solution, awareness grew of the universal global nature of this crisis. From the Americas to the Middle East and South Pacific, traditional agricultural thinking and the changing climate are creating serious challenges to food security and agriculture related economies.

THE CASA GROUP LLC



A CTTA COALITION



CASA LEADERSHIP



Chris Gielnik
HydroHaus

Environment means many things but when needing a reliable environment for growing crops you need to take many climate related elements out of the equation while including many, many more. HydroHaus provides the container and management necessary for a stable and reliable grow platform.



Wayne Erickson
Habitat Construction

The complexities of understanding the interconnections involved in designing, developing and implementing a multifaceted solution requires an extraordinary breadth of experience in a broad range of disciplines. A sustainable and resilient approach to building the CASA systems is a core need that Habitat Construction provides.



Julie Etra
Western Botanical

Julie Etra took her passion for nature and her dislike of working in very structured environments and began doing the hands-on work needed to change the world. Working on both sides of the Mexican/U.S. border, she is making an impact far exceeding the size of her organization. Agriculture and reestablishing ecosystems are core CASA needs.



Jerry Traynham
Aqueonics

Water is a core issue with all agriculture and a partner with the understanding and competency to design, plan and implement a wide range of water treatment, efficiency and recharge processes that can be customized for each engagement. With 40 years of beneficial reuse experience Aqueonics both pioneered and is perfecting the process.



CHIHUAHUA

THE PROCESS APPLIED

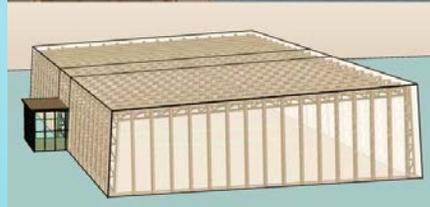
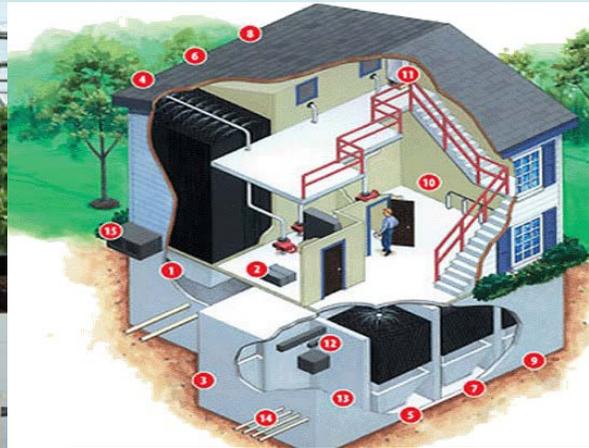
PROJECT HISTORY

The Mexican government called upon Dr. Eric Rasmussen and during discussions about how joblessness and loss of agriculture in the Copper Canyon region was raising the crime rates in Juarez.

Dr. Rasmussen introduces the challenge to CTTA reviewing the issues, hoping that CTTA could develop potential solutions.

CTTA determined that the most viable approach was to find a way to reinstate the economic base through efficient agriculture and water strategies.

TECHNOLOGY



Aqueonics Water Treatment

Inflow

Treatment Plant
Surface Runoff
Ground Water
Recycled

Outflow

Surface Runoff
Ground Water
Domestic Use
Industrial Use
Recycled

Western Botanical

Environmental impact
Stormwater management
Reforestation
Soil restoration
Agriculture industry development

CASA Group

- Vocational training for systems maintenance and management
- Regional educational material and teach the teacher training w/vocational enhancement

Habitat Construction

- Construction Management
- Process Integration
- Recycled & Secondary Product Development
 - Compost
 - Amendments



Power

Solar

Anaerobic Digestion

- Waste conversion
- Fuel, power and heat generation
- Soil amendment and organic liquid fertilizer

Microgrid

- Generation
- Delivery
- Management
- Storage

Hydrohaus

Biomimicry Climate Control
Water Optimization
Environmental maximization
Extreme temperature management
Advanced LED grow lighting systems

Growing Systems

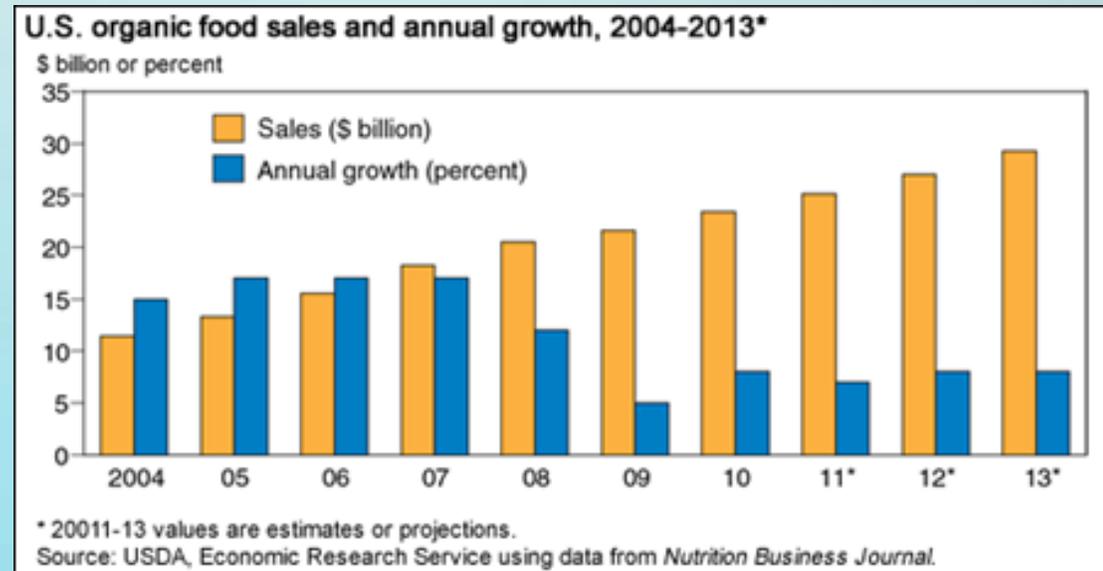
- Hydroponics/Aeroponics
- Aquaponics
- Traditional
- Hybrid

CTTA

Solution concepts
Business development
Market access
Partnership development

FILLING A GROWING NEED

- Food production is more critical today than ever before, It will be even more critical tomorrow.
- Demand for quality is high
 - Organic
 - High nutritional value
 - Superior taste
- Projected growth continues far into the future.



REGIONAL RESILIENCY

- ❖ Food security
- ❖ Water efficiency and integrated water strategies
- ❖ Economic diversity
 - Market access
 - Job creation
 - Education
- ❖ Biodiversity
- ❖ Reduced costs, greater production and less waste
- ❖ Renewable energy/Micro-grid
- ❖ Land rehabilitation
- ❖ Return on investment



THE KITSAP RESILIENCY PROJECT

EXPANDING TO MEET NEEDS

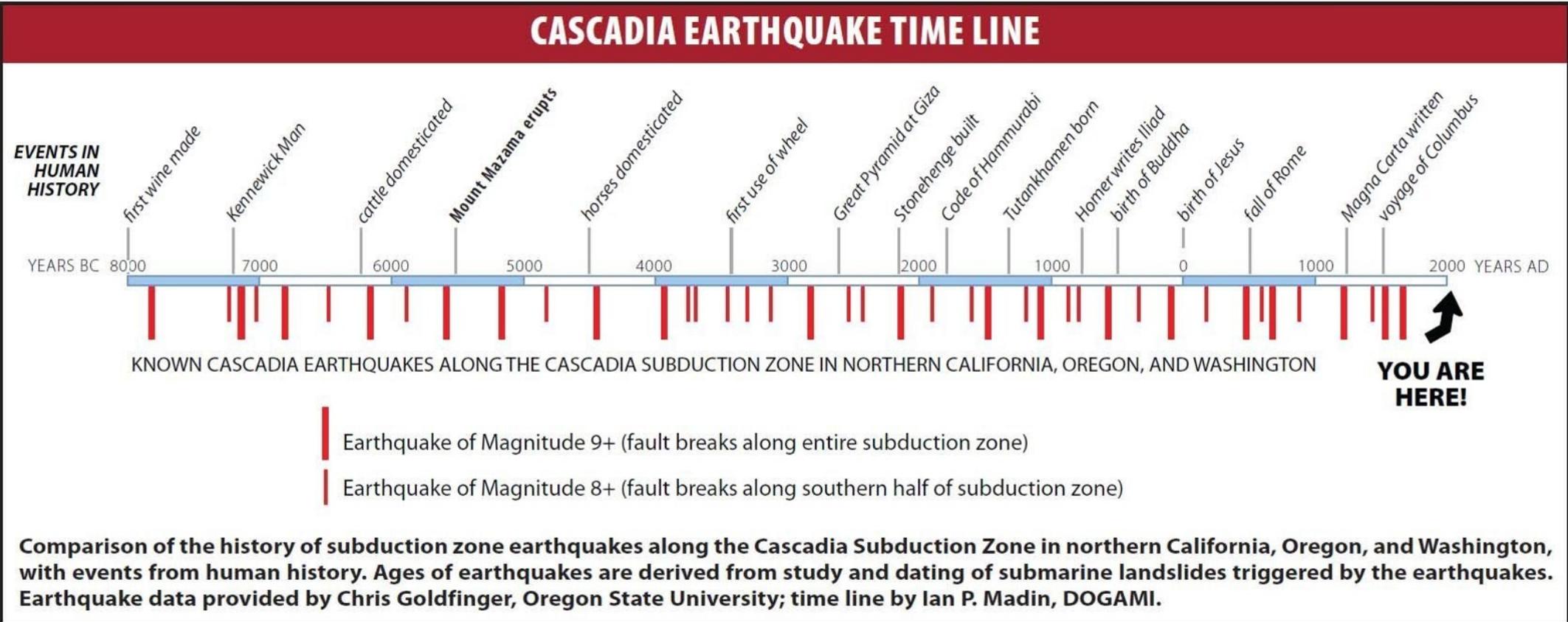
KITSAP COUNTY

Kitsap County is a beautiful place to live, with an amazing shoreline, views of the Olympics and Mt. Rainier, hiking, cycling, boating and a welcoming community.

Kitsap is home to around 260,000 people and it is the responsibility of all of us to take care of each other so that we and our families are in turn taken care of.

The best way for this to happen is to develop a resilient foundation on which we can rely. The Kitsap Resiliency Project is reaching out to the greater community to do just that. Contact us and find out what is being done and how you can become a part of the process. Every voice counts.

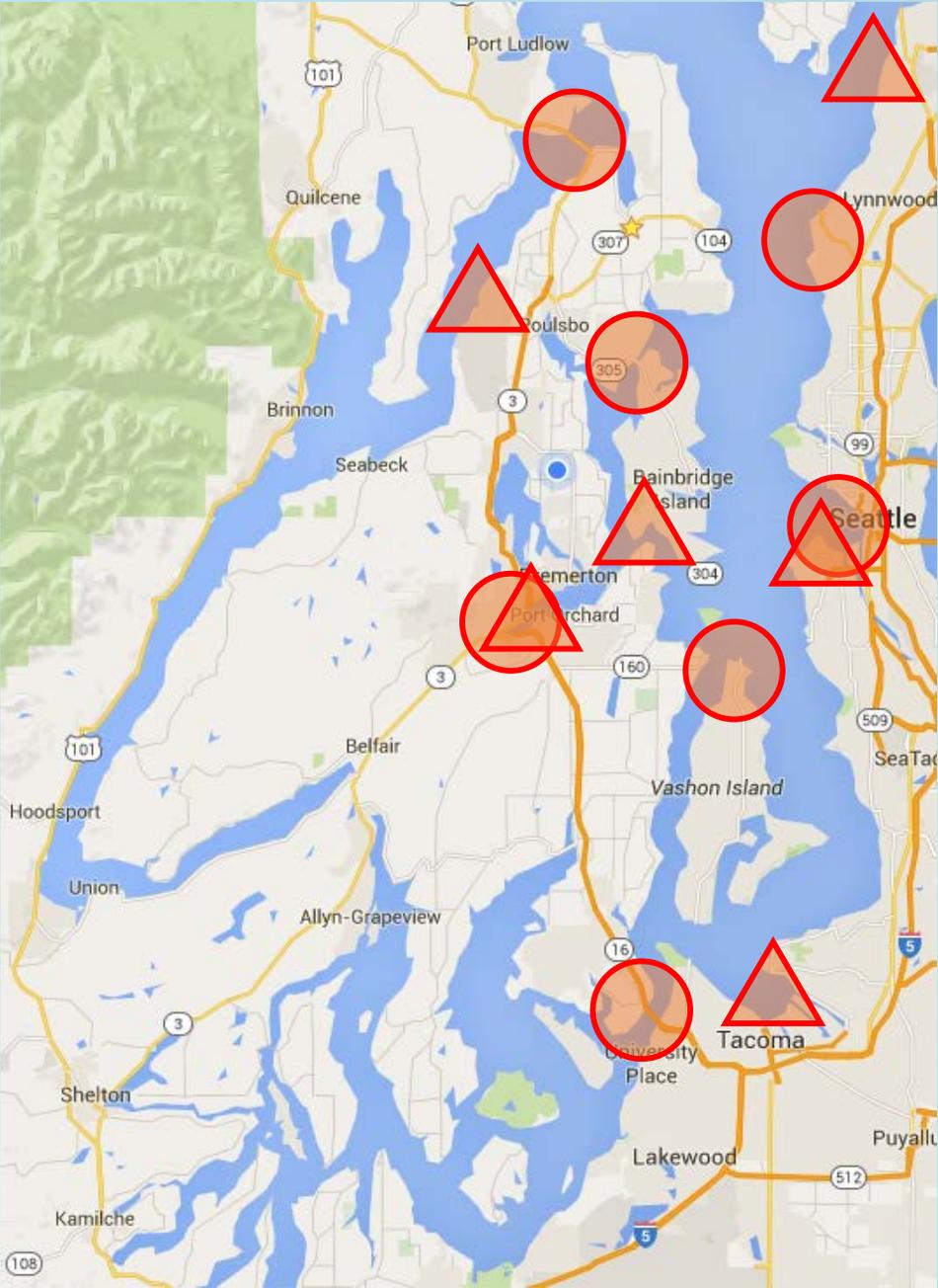
NOT IF, BUT WHEN



POTENTIAL IMPACTS

Questions regarding infrastructure vulnerabilities for Kitsap County, WA

~ Initial Review for Case Study



 = Access Risk

- Hood Canal Bridge
- Agate Pass Bridge
- Narrows Bridge
- Gorst Access (16/3)
- Ferry System
- Secondary and tertiary roads?

 = Pollution Risk

- Manchester Fuel Depot
- Manchester Wastewater Treatment Plant
- Sub-base Bangor
- PSNS
- South Seattle Industrial
- Duwamish River
- Tacoma Flats
- Everett

ASCE REPORT

- ❖ **C- Bridges:** As of 2011, there were 7,743 bridges in Washington state. Of these, 5% (391) are structurally deficient. This places Washington state sixth in the nation for least number of structurally deficient bridges. However, the state maintains an aging infrastructure struggling to handle the demands of modern society.
- ❖ **D+ Roads:** There are more than 136,000 miles of roadways in Washington State, on which 87 million vehicle-miles are driven daily. The bulk of this system was built more than fifty years ago and has lasted for longer and carries more traffic than it was originally designed for. Just as maintenance and improvement needs are increasing, transportation funding is decreasing.
- ❖ **C Schools:** Washington has an estimated 2,050 school facilities with capacity for 1.2 million students. Some school facilities are over capacity and some under. Over the past 20 years, Washington state has contributed a total of approximately \$3.9 billion to help fund 1,315 school construction and renovation projects.
- ❖ **C- Drinking Water:** Washington state is known for having great tasting, clear drinking water. Washington is served by many different types of water systems: private wells, large municipal water systems, and private water systems.

CHALLENGES AND OPPORTUNITIES

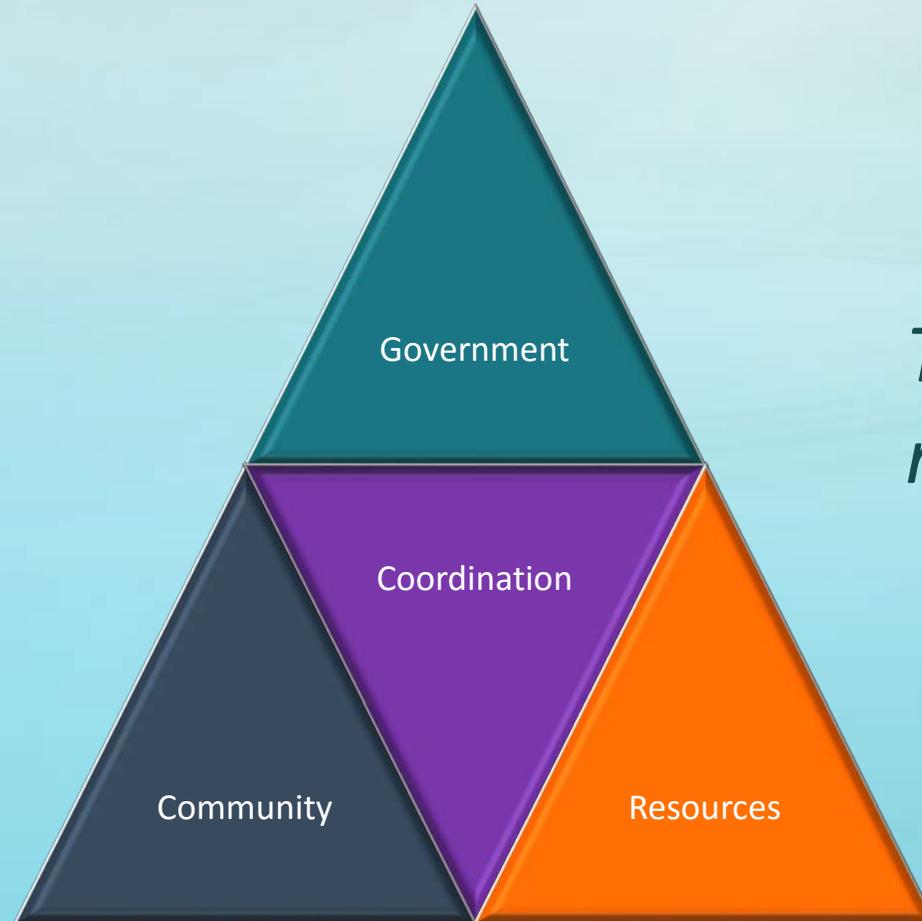
FEMA DATA

- 3 days worth of Food
- No power for up to a year
- Infrastructure uncertainty
 - Roads
 - Bridges
 - Water based transport
- Seattle west of the I5 will be significantly affected
- The faith based community will be on the front lines
- There will be continuing death and homelessness

OPPORTUNITIES TO BUILD RESILIENCY

- Local food production
- Seismic evaluation and retrofitting with attention to key alternate routes and water feeds
- Alternative energy resources
- Distributed wastewater treatment with solar back-up power
- Safety proofing fuel and toxic storage in high risk zones
- Creation of long and short term employment
- Education

THE BROADER THE BASE

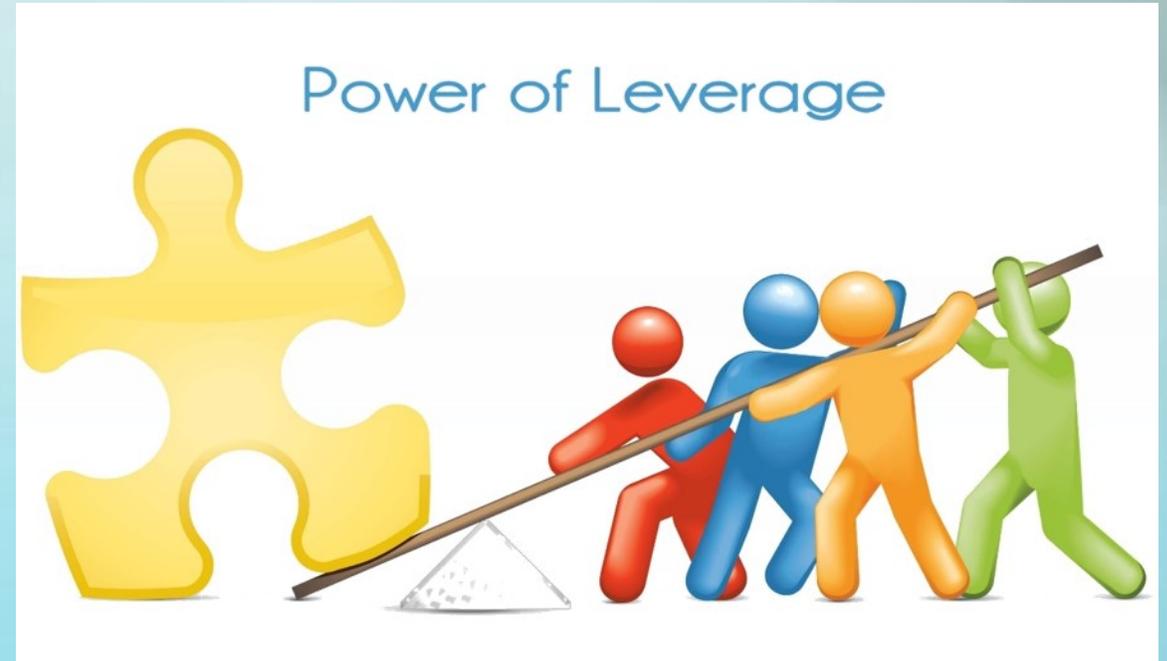


The stronger and more resilient you are!

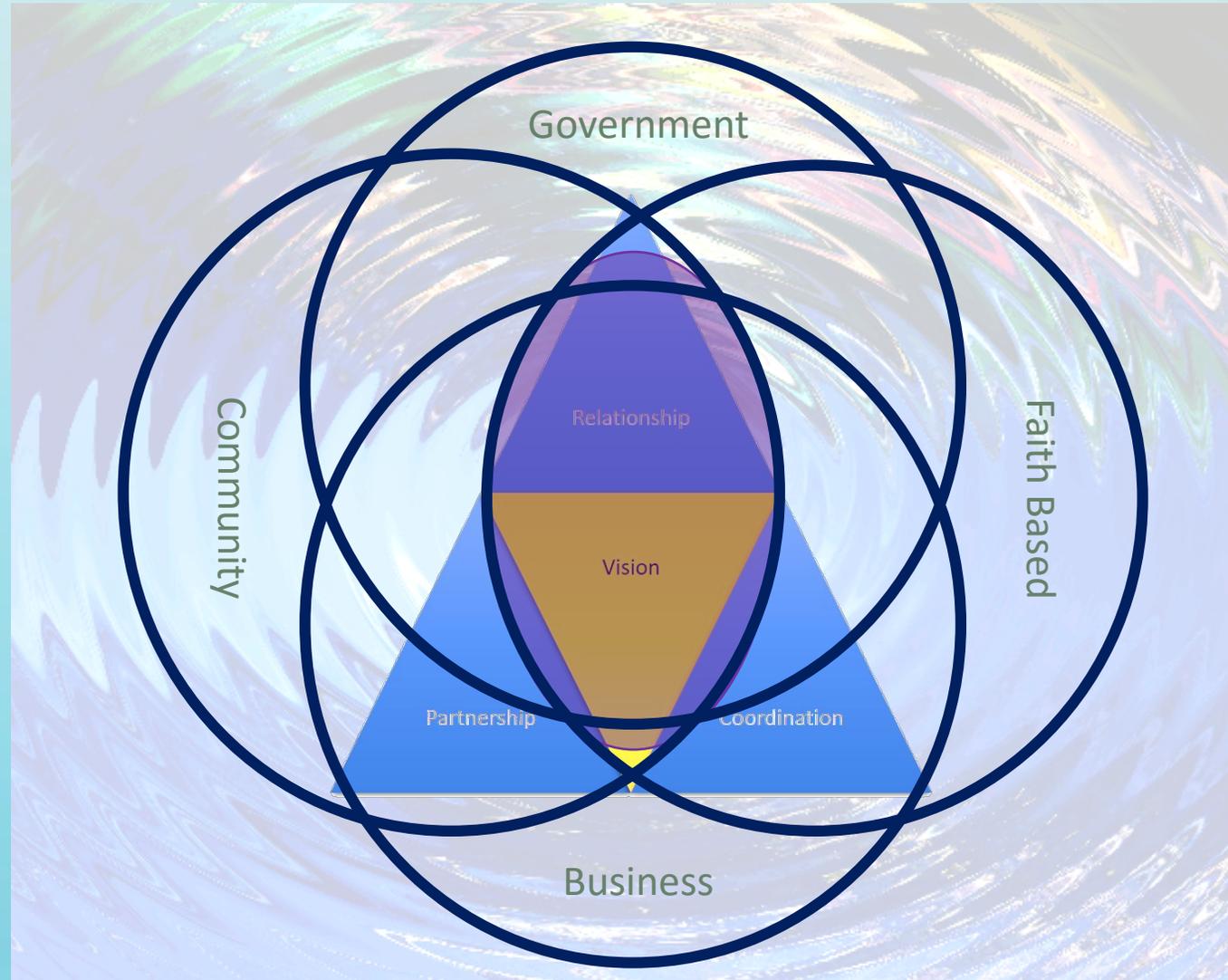
The Coalition Approach

A Broad Based Coalition:

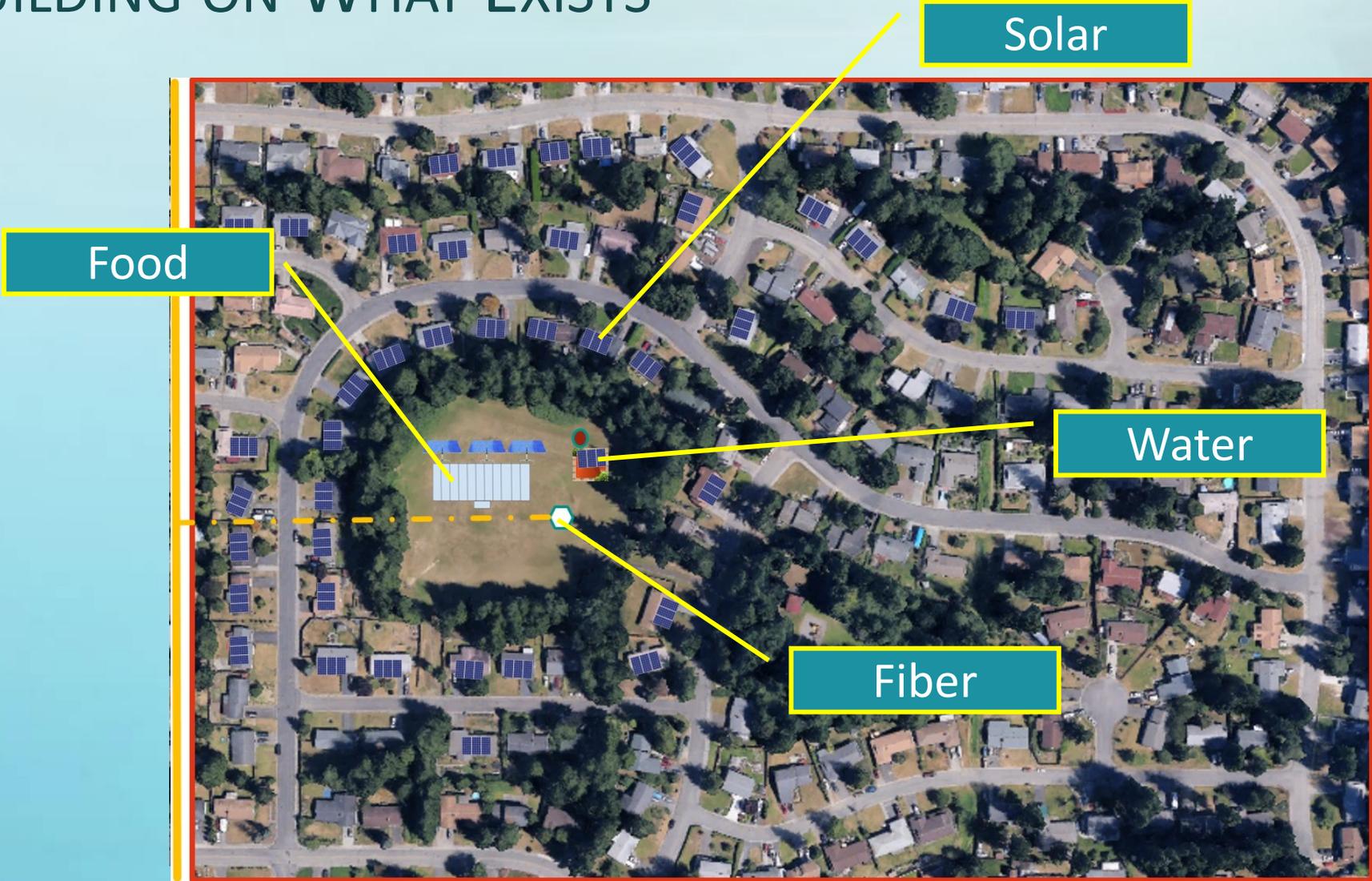
- ❖ Provides leverage
- ❖ Promotes unity
- ❖ Increases both human and financial resources
- ❖ Creates opportunities and synergy
- ❖ Improves decision making
- ❖ Develops transparent environment
- ❖ Builds a foundation for resiliency

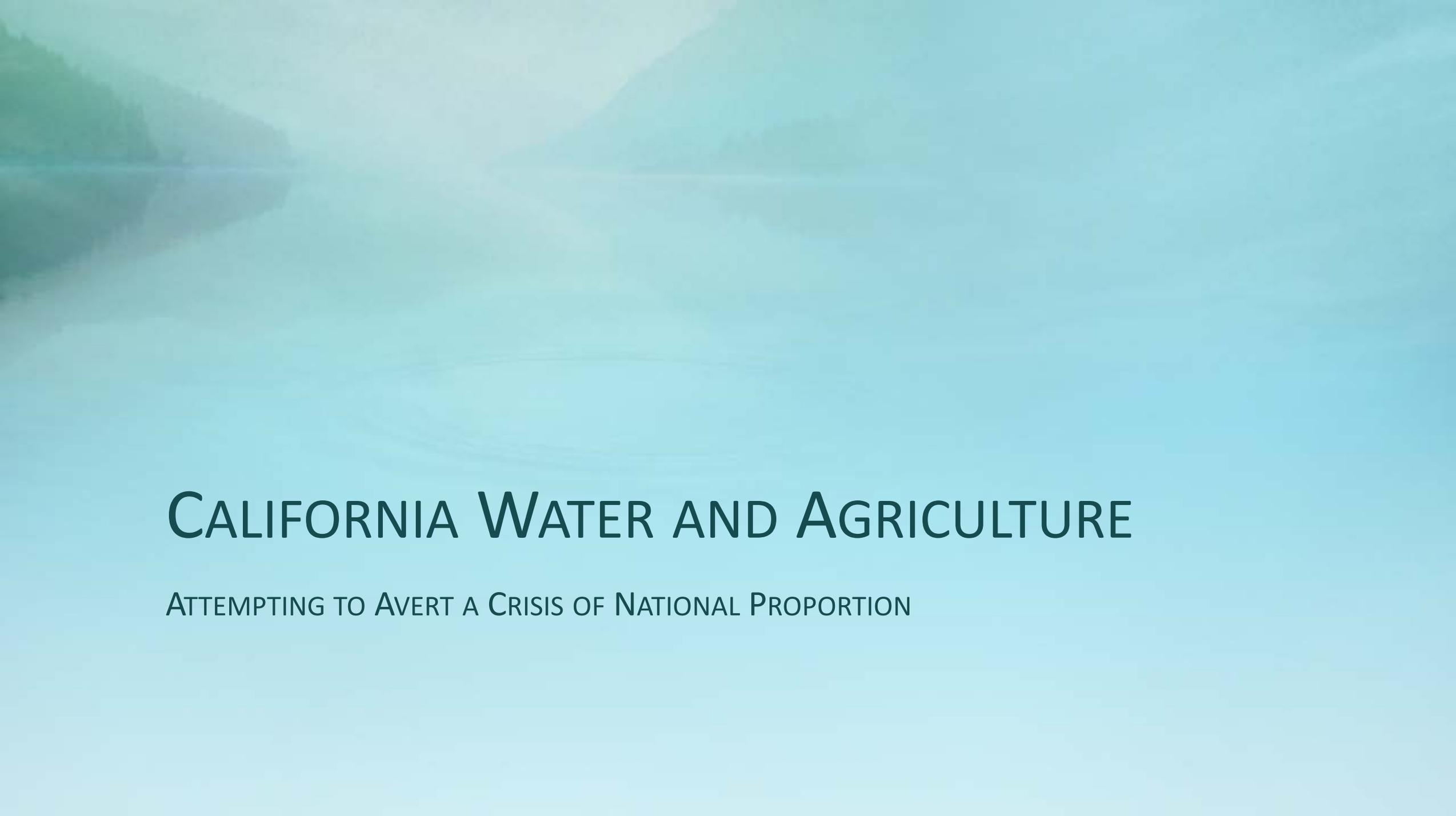


THE SWEET SPOT



BUILDING ON WHAT EXISTS





CALIFORNIA WATER AND AGRICULTURE

ATTEMPTING TO AVERT A CRISIS OF NATIONAL PROPORTION

A JOURNEY OF A THOUSAND MILES...

California

- Represents 30% of U.S. Agriculture.
- Is draining central aquifers for agriculture while local towns run dry.
- Aquifers require 10,000 years to recharge with historical rainfall levels.
- Continues unrestricted development!

CTTA initiates discussions with Southern California School Districts to:

- Reduce operations costs by reducing new water usage.
- Install water reuse processors to use water multiple times prior to processing.
- Water for toilet flushing and landscaping will be provided by processor output.
- Reduces growth stress on existing centralized systems.



CLEAN TECHNOLOGY TRADE ALLIANCE

Mark Frost

(360) 824-5304

mark@thecta.org

www.cleantechtradealliance.org