

Kearsarge Valley Resiliency Survey Toolkit

2012-2013 Community Based Research Project

Environmental Studies/Science Department

Colby-Sawyer College

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Resiliency Survey Toolkit

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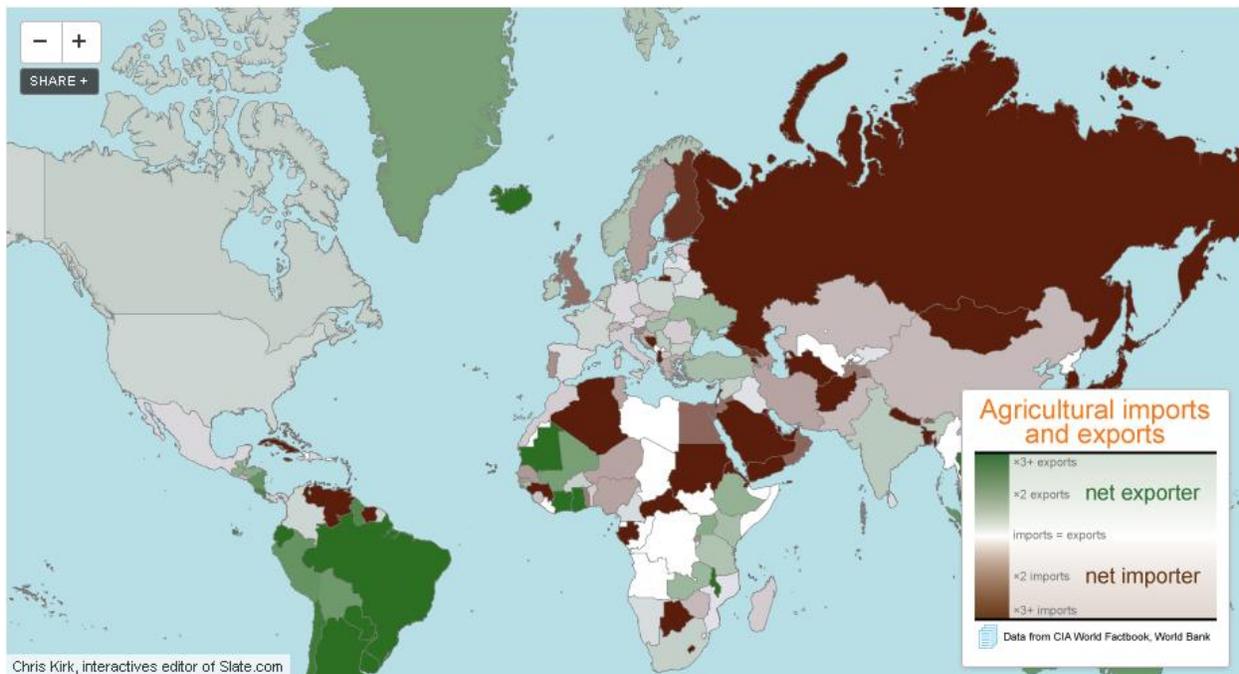
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Introduction

Simple is not a word to be used to describe today's world. Increased travel and globalization has brought human civilization and development to a point where regions are no longer reliant solely upon the local resources around them. Food, energy, and economics in the local communities have been weakened and absorbed into today's global and national markets. Does reliance on national and international markets and systems increase vulnerabilities for local communities? Let us travel through a few of the areas that affect the majority of us every day.

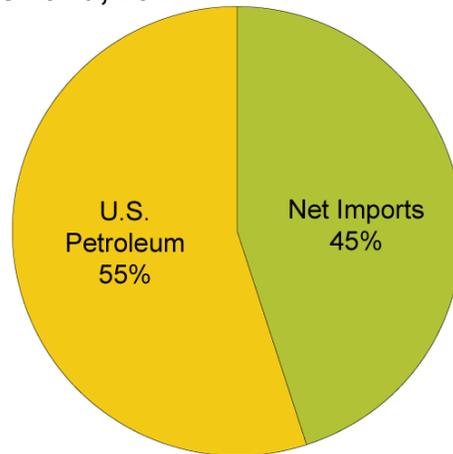
If you look at the graph below, one can see where food is produced and transported around the world.



The data was collected by the World Bank. The brown countries represent importers, while the green are exporters. It is clear that South America is a major exporter; Argentina has the highest exports with roughly \$23 for every \$1 imported for food. The United States is almost even with its import-export

across borders is so high, which will contribute to the price seen by those small communities, such as those in New Hampshire.

Net Imports and Domestic Petroleum as Shares of U.S. Demand, 2011



Note: U.S. Petroleum includes balancing item.

Source: U.S. Energy Information Administration, *Monthly Energy Review*, Table 3.3a (March 2012), preliminary data.

The graph above shows the United State’s oil usage and import percentages for 2011; which clearly shows the high demand for oil. Since 2001, the price of oil has become extremely unpredictable; it has reached as high as \$150 per barrel and dropped to nearly \$35 per barrel. The pricing could be explained by such areas as: war in the Middle East, growth of emerging countries such as China, and coordination amongst the OPEC cartel (Girones, Guerra and Hernandez). Oil has transformed from an easily-accessible and widely used commodity to a leverage point and financial asset. Oil producing countries have the power over dependent countries, like the US. Price is an issue that will affect the price paid by the United States but supply will also be a determining factor. The idea of “peak oil” has grown in discussions today as well which will affect US communities in the future.

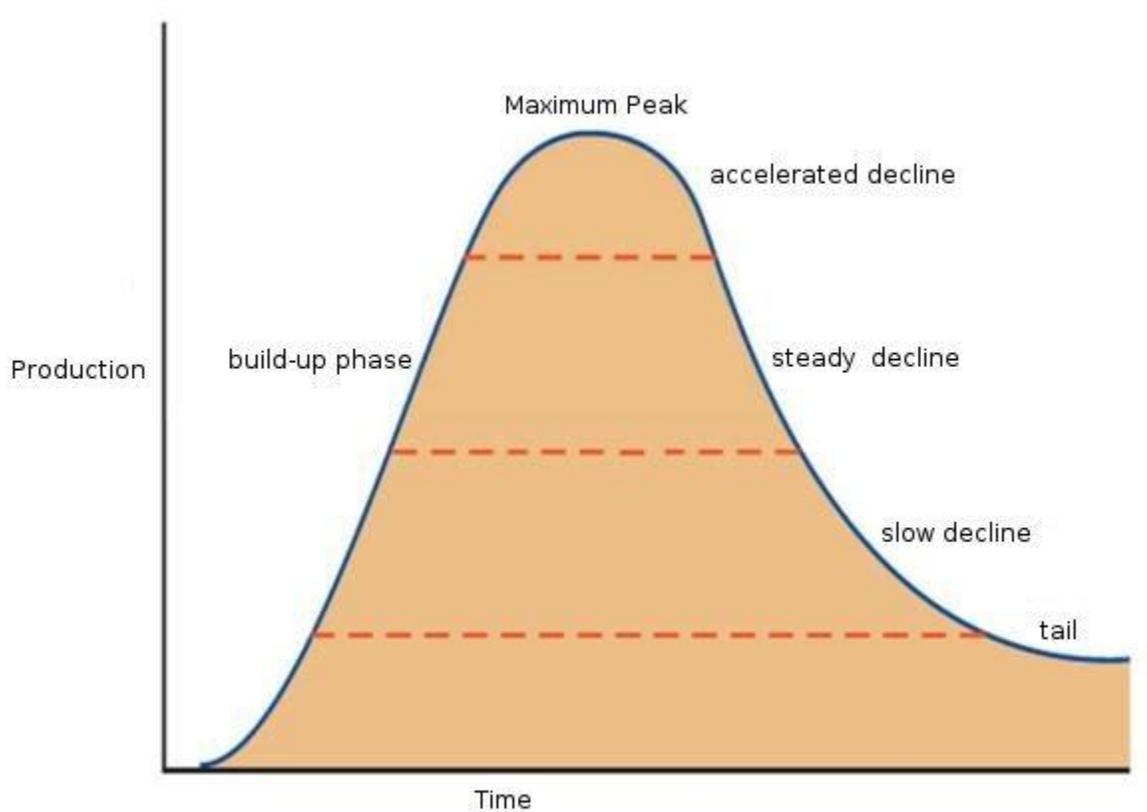
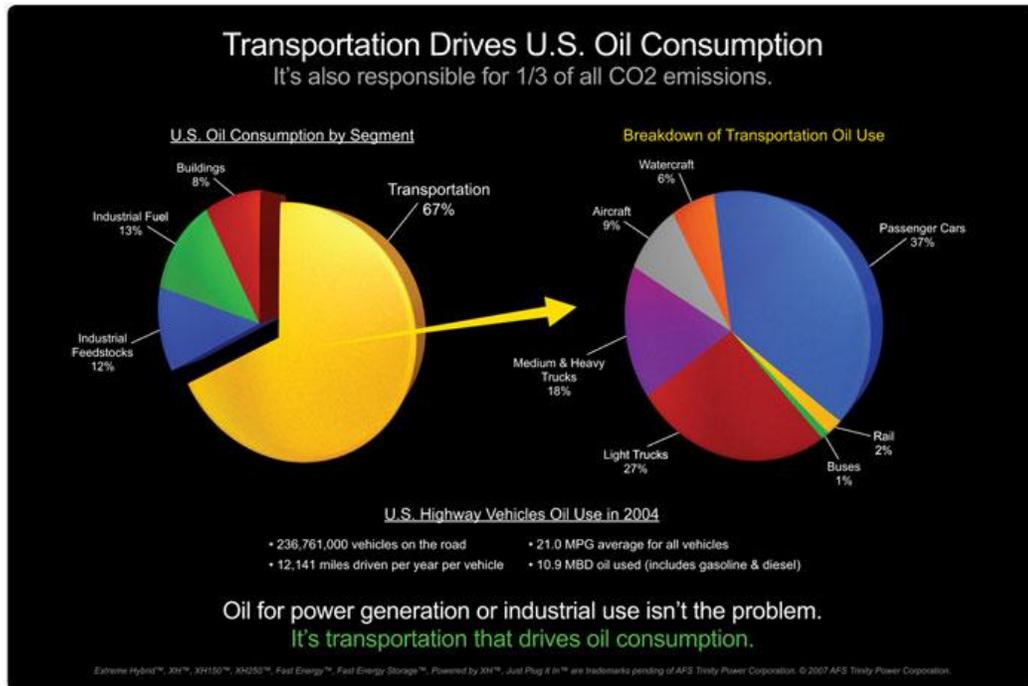


Image Source: www.2b1stconsulting.com

Peak oil is the rate at which the global production of oil will reach its maximum rate and begin to decline, which is depicted in the graph above. World production of crude oil has not increased for over seven years (Brecha). While there is much debate over when the peak will occur, most predictors can agree that eventually, we will run out of this resource. There is discussion of other liquid fuels, such as tar sands and oil from shale, these represent expensive alternatives to the current, cheap-oil (Brecha). As supply diminishes, the price will rise. The price increase will affect almost all in the United States. Oil has been a major building block for the United States, from infrastructure and roads to toys and gizmos all the way to fertilizers for the production of the massive amounts of crops in the Midwest.

Transportation is one sector that relies heavily upon this finite resource. Any dramatic changes in supply and pricing will have an effect on the people of the United States.



Source of Image: afstrinity.com

If a community is reliant upon sources from outside the community, such as the food produced in the Midwest part of the United States, then they rely heavily upon the finite resource to deliver those products. As the image above shows, in 2004 67% of the oil consumed by the United States was through the transportation sector. Automobiles, trucks, aircrafts all contribute to the demand for a resource which could decline, if it hasn't already. Cost to produce and, especially, transport items will be increasing as oil supplies diminish and more expensive energies are sought after and extracted. There is much uncertainty with cheap-crude oil which in turn will have an effect on many of the systems, as discussed for the food and economic systems. Despite these uncertainties, there is a way to increase and improve resistance to these future changes.

Increasing local resilience is a strategy to combat the current and future struggles of the national and international struggles with supply and transportation of food and energy. The Community and Regional Resilience Institute, "CARRI", defines community resilience as the ability to achieve a "new normal" level of functionality. This "new normal", established by the community, is one that is a response to both past and present changes experienced; adapting and changing its response. This is similar to the idea of self-organization, where the community has the ability to adjust itself; new structures and strategies to meet the current goals of the observed population. Other definitions of community resilience varied in the degree of response to outside shocks. These shocks can be economic, like a market crash or recession, or environmental, such as a drought or tornado.

Works Cited

Brecha, Robert J. "Ten Reasons to Take Peak Oil Seriously." Sustainability (2013): 664-694.

Girones, Francisco, et al. "Structural Change in the Crude Oil Price Dynamic: Theoretical Study and Practical Implications." Business and Economic Research (2013): 39-55.

Glauber, Joseph W. "OUTLOOK FOR U.S. AGRICULTURE IN 2013." Department of Agriculture (2013): 1-9.

Background of Resilience

Where did the idea for a “resiliency survey” come from?

The resilience survey was created by the 2012-2013 Community Based Research course, provided by Colby-Sawyer College, as a means to measure the vulnerability and areas of improvement for the individuals and community of the Kearsarge Valley region. Over the duration of the course, articles and books accumulated and knowledge of community resilience continued to be expanded upon. The idea of developing a survey to measure the resilience of a community was brought to light by the *Jamaica Plain New Economy Transition*, which is an organization located in Jamaica Plain, Massachusetts. After further research, it was found that there were several other resiliency surveys that had been created. One of those surveys, produced by *YES! Magazine*, was the basis for the *Jamaica Plain New Economy Transition* survey. Exploring deeper into the field of resilience, it was found that there were many factors that contributed to a community’s resilience; one of those being the actual definition of resilience.

What is a system?

The word “system” will be discussed alongside resilience throughout this document. Systems are intricate structures consisting of interactions and combinations (de Savigni and Taghreed). A car is a great example to describe a system. The overall goal for the system, being a car, is to reach a particular speed. To reach a particular speed, there needs to be inputs into the system. Inputs for a car would include such variables as: gasoline, fuel lines, a key, ignition, and a gas pedal. All of these contribute to the car reaching a system goal. Outputs for a car, which can be both byproducts from the inputs or variables that modify the system include: brakes, brake pedal, exhaust, and heat. Systems can become

quite complex and intertwine with one another. The operation of the brakes on a car is a system in itself. The study of systems is known as systems thinking and it encompasses countless fields. Similar to systems, resilience can be described and defined in multiple ways.

What does “resilience” mean?

There are three characteristics to resilience that all definitions of resilience derive from: stability, recovery, and transformation. Stability is the ability to return to a preexisting state or the amount of disturbance a system can tolerate before it shifts (Maguire and Cartwright). Is a town or area prepared enough to return to its former system? If a major storm, like a hurricane, strikes a community will it have a major impact or merely be a small bump in the road? The ability to handle outside shocks or stress is sometimes referred to as the “threshold” of a community; the higher the threshold, the quicker the return to the ways things were before the shock occurred. If a community cannot “absorb” a shock, then its ability to “bounce back” must be examined.

It is difficult to imagine an area that does not need to bend to avoid breaking. It would be difficult for a community to be unaffected by a major hurricane striking it. Daily routines and routes of travel would most likely be interrupted and require some sort of maintenance. Stability does not allow “bend” or any affect from the shock and remains at the same state through a possible outside disturbance. This may be the case but odds are that the town will be affected by an outside shock, like a storm, in some way. In this case, recovery is the form of resilience to be examined. The ability for a community to “bounce back” from a shock, to return to the original state, is considered its ability to recover (Maguire and Cartwright). Recovery is associated with time. C.S. Holling, an ecologist and systems thinker, described recovery time as “engineering resilience”. Bending without breaking, to return once again to the way things were before the shock. The issue with this idea is that there are

systems that cannot return, which means that there must be a complete change to adapt to the shocks experienced, like peak oil.

Resilience could be categorized as the ability to transform in response to change or shock experienced. Rather than resisting change or returning to a previous state, the response is to completely change the system. Rather than denying a change, transformation positively accepts change (Maguire and Cartwright) and uses it to form a more resilient individual or community.

Factors that Determine Community and Personal Resilience

There are three factors that determine community resilience: the ability to self-organize and make decisions, the ability to learn and adapt, and the ability to plan (Hopkins). Self-organization refers to the ability of communities to, at any moment in time, change their formation and structure. No outside help needed. Past shocks to the community become areas to learn from and create ways to counter them in the future. For example, if a community found that it lacked food-reserves, after a food shortage experienced in the grocery stores, then they can learn from that experience and make the necessary changes so that they will not be affected as much, if at all, the next time the shock occurs. Learning and adapting, the community can eventually develop plans and strategies for possible shocks in the future, whether natural or man-made. Personal resilience also deals with outside shocks, but instead of a communal response, it is up to the individual.

High personal resilience often includes factors such as: having basic needs met, eating and staying healthy, feeling a part of the community, and feeling able to make a difference in the community (Hopkins). The factors that contribute to personal resilience are described by Maslow's Hierarchy of Needs. Structured like a pyramid, the base consists of the basic needs that must be met which include water, food, and sleep. These are known as physiological needs. Scaling up the pyramid, we arrive at

safety. Security of the body, for example, is increased when the proper diet and exercising is applied. Belonging is the next tier after safety. This need includes such areas as family and friendship. Finding a group or organization to associate with is important. As more and more of these needs are met, the more complex needs can become. Towards the top of the list of personal resilience is self-actualization. Find meaning and purpose in life, like making a difference in the community. Feeling that one can actually make an impact is the final stage in personal resilience. Increasing resiliency, whether personal or communal, decreases the affects that vulnerabilities have on the studied system.

Vulnerabilities

Vulnerabilities will exist within a system, whether it is because of the institution itself or the environment to which it is within. We all are contained within an institution whether it is political, religious, or social. An institution could incorporate either social norms or formal structures of governance and law. The characteristics of an institution are “persistent, sustainable, and resilient depending on a range of parameters including, legitimacy, agenda setting, and the selecting of environmental risks which resonates with the institution’s agenda setting” (Adger). One of the main reasons why an institution is so difficult to change is because it appears to be sustainable and resilient. Our use of oil, and other fossil fuels, has provided us with great advances. Plastics, fuel for propulsion, fertilizers, and pesticides, oil has become an intricate part of today’s society. We have created an institution that is reliant upon oil and continues to exploit it as if there was an infinite supply... but there is not. Oil is neither sustainable nor will it be resilient in the near future as reserves dwindle and extraction increases in price. The specific areas of the system, like the consumption of oil, that can be addressed are known as “leverage points”.

Leverage Points

Donnella Meadows, an American environmental scientist and teacher, developed a list of the “leverage points” in a system that can be used to increase performance or effectiveness of the system being examined. These “leverage points” are areas that can be adjusted to reduce the vulnerabilities and increase the continuity of the studied system (Meadows). The degree, or difficulty, of the leverage points vary. Referring back to the car example, the tire keeps going flat. An easy fix is to fill up the tire with more air. This solves the solution for the short term, but for the long term this was not a beneficial decision. Meadows identified 12 of these leverage points in a system. The 12 leverage points are listed below (in order from least effective to most effective):

12 Leverage Points

When discussing the leverage points, the system of the car will be the theme for reference. The goal of the system is to reach a certain speed to make it to a particular place on time. The speed limit should not be exceeded so that the car is not pulled over.

1. Constants, parameters, numbers.

- Goal of the car is to reach a desired speed. To increase the ability of reaching that speed, an adjustment to the tires and the exhaust can be done. This will increase the speed, but may make it harder to slow down and reach the desired speed perfectly. We don't want to get a speeding ticket.

2. The sizes of buffers and other stabilizing stocks, relative to their flows.

- A governor is a component to an automobile that regulates the amount of speed that can be reached. It sets a cap so that a certain limit is not exceeded. If the capacity is approached, the car decelerates due to the governor.

3. The structure of material stocks and flows.

- There are several modifications to the automobile that can be made to increase the effectiveness of the system. Converting the engine to become a turbo

engine, results in a faster automobile. The problem is that this is expensive to accomplish.

4. The lengths of delays, relative to the rate of system change.

- Adjusting the response time of the gas pedal to the engine will increase the rate at which the automobile increases speeds. The issue that could occur with this is that I may exceed the speed limit more rapidly.

5. The strength of negative feedback loops, relative to the impacts they are trying to correct against.

- Cruise control is a way to set the speed at which is desired and the automobile will self-correct. It will accelerate to meet the determined speed and decelerate if it exceeds that chosen speed.

6. The gain around driving positive feedback loops.

- Pressing down on the gas pedal, the amount of gas will increase to the engine, and the speed of the automobile will increase. This will continue for a long as the pedal is pressed forward and there is gas in the tank.

7. The structure of information flows.

- This is new information that would affect the system goal of reaching a particular speed. The location of police officers is known, which means that exceeding the speed limit in certain areas will not result in a ticket.

8. The rules of the system.

- The law of speed limits is what affects the system of the automobile and the speed that is permitted to travel. A change in the law, increasing the speed limit or completely eliminating it, would increase the speed of the automobile and the arrival time to the destination.

9. The power to add, change, evolve, or self-organize system structure.

- Adding a built in GPS into the automobile will improve the ability of the system to travel the set limit and project time of arrival. To meet the time requirements and speed limits, the gas pedal can be pressed forward to increase speed or the brakes can be pressed to decrease speed. In addition, a nitrous oxide tank has been added which increases the speed of the automobile significantly when applied.

10. The goals of the system.

- The goal of automobile is to travel from one-place- to-another in a relatively short amount of time. Instead, adjust the need to be on time. Rather than worrying about speed to make it on time, change the time that you need to arrive.

11. The mindset or paradigm out of which the system (goals, structure, rules, delays, parameters) arise.

- Rather than using an automobile to travel, use a form of public transportation to reach the destination. This completely changes everything discussed and now

places the decisions of speed, acceleration, and deceleration on the new driver and their mode of transportation.

12. The power to transcend paradigms.

- Completely reject the need for travel. In the United States, it is expected to use automobiles and other forms of mechanized transportation to travel far distances. Shopping and schooling often require energy-dense modes of transportation. Instead, get everything from within a walk-able distance. Food, clothes, and schooling all within a small radius.

(Meadows)

Resiliency Survey: the resilience indicator and leverage point motivator.

After researching resiliency and finding additional information on the 12 leverage points it became apparent that the two subjects could be combined to facilitate communal and personal resilience. The reason this came to be is because both resiliency and leverage points are examining areas of vulnerability in a system, whether community or personal. Food systems, economic systems, and social systems are all contained within a community. Each has goals, often varying amongst communities, as well as different inflows and outflows. For example, one community may have an excessive amount of local food for the population. This means that it does not rely heavily upon an outside source for inflow. That outside source, like the Midwestern United States and its massive crop output, has created its own system with vulnerabilities of its own. To account for each system, in varying communities, the Kearsarge Valley Resiliency Survey was created to calculate the different areas of resilience, such as food, local economy, and social connectedness, to determine overall personal and community resilience. In addition to the calculation of resilience, recommendations have been based on the 12 leverage points discussed by Donella Meadows. The recommendations, labeled as “Tips for Change”, vary in degree of difficulty just like the leverage points.

Works Cited

Adger, Neil W. "Social and Ecological Resilience: Are They Related?" University of East Anglia: School of Environmental Sciences (2000): 348-361.

de Savigni, Donald and Adam Taghreed. "Systems Thinking for Health Systems Strengthening." World Health Organization (2009): 1-108.

Hopkins, Rob. The Transition Companion: Making your community more resilient in uncertain times. White River Junction: Chelsea Green Publishing Company, 2011.

Maguire, Brigit and Sophie Cartwright. "Assessing a Community's Capacity to Manage Change: A Resilience Approach to Social Assessment." Australian Government: Bureau of Rural Sciences (2008): 1-33.

Meadows, D. H. "Leverage Points: Places to Intervene in a System." The Sustainability Institute (1999): 1-21.

Sample Survey

Introduction

Hello and welcome to the Kearsarge Valley Resiliency Survey! This survey was developed in April of 2013, by the Community-Based Research class of Colby-Sawyer College, as a tool to measure the degree of resilience displayed by the Kearsarge Valley region and the individuals within it.

The purpose of the survey is to present you, the participant, with a score for each of the areas of resilience as well as an overall resilience score to measure and assist for future improvements. On a community level, this survey can be used to determine the overall region's resilience in each of the specified areas of resilience, including the overall resilience of the area. Your data will not be used for research purposes if you are under the age of 18. Private information, including name of participant, will not be released or used in data collection or analysis.

Procedure

This survey, if chosen to participate, will take roughly 8-10 minutes to complete. After completing the survey, scores will be calculated and recommendations for improvement will be provided.

Questions

Questions or concerns about the survey should be directed to: *(Organization Administering Survey)*.

Thank you for your voluntary participation in this survey.

Part 1: Defining Community Resiliency

- 1.) Which of the following definitions do you find most suitable for the word “resilience”?**
- a. The buffer capacity or degree of absorption of an individual, group, or community to economic, social, or environmental hardships
 - b. The ability and time it takes for an individual, group, or community to return to its former economic, social, or environmental state after a catastrophic event.
 - c. The ability of an individual, group, or community to adapt and change its system to cope with current and future economic, social, and environmental alterations
 - d. All of the above
 - e. None of the Above (Include thoughts or alternate definition in the open-ended section below)

Comments...

Part 2: Measuring Community and Personal Resilience

In this section, the goal is to understand how your community is operating and how you operate within it. The purpose of this section is to uncover the economic, social, personal, and environmental stance of individuals and the community as a whole.

Business

- 2.) I support local business and buy as much as I can locally**
1. Very Often
 2. Often
 3. Sometimes
 4. Rarely
 5. Never

Comments...

3.) It is apparent that businesses within my town are working and supporting each other to share experience and market power.

- 1. Strongly Agree**
- 2. Agree**
- 3. Somewhat Agree**
- 4. Disagree**
- 5. Strongly Disagree**

Comments...

4.) I put my savings and investments in community and regional banks and local institutions.

- 1. Very Often**
- 2. Often**
- 3. Sometimes**
- 4. Rarely**
- 5. Never**

Comments...

5.) I barter the goods and services I need from local merchants, organizations, or individuals.

- 1. Very Often**
- 2. Often**
- 3. Sometimes**
- 4. Rarely**
- 5. Never**

Comments...

6.) I make the majority of my purchases within the Kearsarge Valley region?

- 1. Strongly Agree**
- 2. Agree**
- 3. Somewhat Agree**
- 4. Disagree**
- 5. Strongly Disagree**

Comments...

7.) I know and can see that businesses within the Kearsarge Valley are working with each other to retain residential customers of the area.

- 1. Strongly Agree**
- 2. Agree**
- 3. Somewhat Agree**
- 4. Disagree**
- 5. Strongly Disagree**

Comments...

8.) I have an alternative source of livelihood (carpentry, mechanics) that could sustain me (and my family) if my current source is no longer viable.

- 1. Strongly Agree**
- 2. Agree**
- 3. Somewhat Agree**
- 4. Disagree**
- 5. Strongly Disagree**

Comments...

Food

9.) I choose locally grown products (within the Kearsarge Valley).

- 1. Very Often**
- 2. Often**
- 3. Sometimes**
- 4. Rarely**
- 5. Never**

Comments...

10.) I have a garden, which has the ability to satisfy a significant portion of the household's demand for produce.

1. Strongly Agree
2. Agree
3. Somewhat Agree
4. Disagree
5. Strongly Disagree

Comments...

11.) I am interested in increasing the amount of locally produced products in the area, whether it is through a personal garden, involvement at a Coop, or starting a community garden.

1. Strongly Agree
2. Agree
3. Somewhat Agree
4. Disagree
5. Strongly Disagree

Comments...

12.) I know how to preserve food.

1. Very Often
2. Often
3. Sometimes
4. Rarely
5. Never

Comments...

13.) The drinkable water that I have access to (town, well, rainwater catchment) is reliable in all kinds of weather and I expect it to continue into the future.

- 1. Strongly Agree**
- 2. Agree**
- 3. Somewhat Agree**
- 4. Disagree**
- 5. Strongly Disagree**

Comments...

Transportation

14.) I work outside of the Kearsarge Valley and I use my car to drive to work greater than 4 days a week.

- 1. Strongly Agree**
- 2. Agree**
- 3. Somewhat Agree**
- 4. Disagree**
- 5. Strongly Disagree**

Comments...

15.) If there is public transportation, or someone with a similar work schedule/commute as myself, I utilize those opportunities.

1. Very Often
2. Often
3. Sometimes
4. Rarely
5. Never

Comments...

16.) I have ways to get around and get everything I need, without the need for a car (walking, biking, etc.).

1. Strongly Agree
2. Agree
3. Somewhat Agree
4. Disagree
5. Strongly Disagree

Comments...

Residential

17.) I have alternative heat and electrical sources (solar panels, wood stove, pellet stove) in place if power is down or utilities are too expensive for me to afford.

1. Strongly Agree

2. Agree
3. Somewhat Agree
4. Disagree
5. Strongly Disagree

Comments...

18.) I have not found ways to improve the efficiency of my home (for environmental and/or economic reasons).

1. Strongly Agree
2. Agree
3. Somewhat Agree
4. Disagree
5. Strongly Disagree

Comments...

19.) I feel that my community supports energy efficient homes and publicly commends those that strive to be more energy conscious in their homes.

1. Strongly Agree
2. Agree
3. Somewhat Agree

4. Disagree
5. Strongly Disagree

Comments...

Social Network and Connectivity

20.) I have neighbors and friends in the local community that I trust.

1. Strongly Agree
2. Agree
3. Somewhat Agree
4. Disagree
5. Strongly Disagree

Comments...

21.) I am not afraid to ask someone in the community for tools or help.

1. Strongly Agree
2. Agree
3. Somewhat Agree
4. Disagree
5. Strongly Disagree

Comments...

22.) There are individuals in my community that can respond quickly in times of need.

- 1. Strongly Agree**
- 2. Agree**
- 3. Somewhat Agree**
- 4. Disagree**
- 5. Strongly Disagree**

Comments...

23.) I offer help and support to others in the community who need it.

- 1. Very Often**
- 2. Often**
- 3. Sometimes**
- 4. Rarely**
- 5. Never**

Comments...

24.) I am active in a community group(s) (youth sports, book clubs, churches, soup kitchens, etc.).

- 1. Strongly Agree**
- 2. Agree**

- 3. Somewhat Agree
- 4. Disagree
- 5. Strongly Disagree

Comments...

25.) I feel connected to my town.

- 1. Strongly Agree
- 2. Agree
- 3. Somewhat Agree
- 4. Disagree
- 5. Strongly Disagree

Comments...

26.) I feel connected to the Kearsarge Valley community.

- 1. Strongly Agree
- 2. Agree
- 3. Somewhat Agree
- 4. Disagree
- 5. Strongly Disagree

Comments...

27.) I feel that my community accepts differences and considers all in its decisions.

1. Strongly Agree
2. Agree
3. Somewhat Agree
4. Disagree
5. Strongly Disagree

Comments...

28.) The community promotes and tries to advance diversity within the community.

1. Strongly Agree
2. Agree
3. Somewhat Agree
4. Disagree
5. Strongly Disagree

Comments...

29.) The community understands and respects diverse forms of belief.

1. Strongly Agree
2. Agree
3. Somewhat Agree
4. Disagree
5. Strongly Disagree

Comments

30.) I know who the decision-making individuals and groups, within the town/Kearsarge Valley area, which have the most power.

1. Strongly Agree
2. Agree
3. Somewhat Agree
4. Disagree
5. Strongly Disagree

Comments...

31.) I feel that each group in the town is represented and has an equal say in decision making.

1. Strongly Agree
2. Agree
3. Somewhat Agree
4. Disagree
5. Strongly Disagree

Comments...

Personal

32.) I have an activity that relieves my stress which helps me feel balanced (exercise, meditation, prayer).

1. Strongly Agree
2. Agree
3. Somewhat Agree
4. Disagree
5. Strongly Disagree

Comments...

33.) I have work, hobbies, or relationships that I find meaningful and fulfilling.

- 1. Strongly Agree**
- 2. Agree**
- 3. Somewhat Agree**
- 4. Disagree**
- 5. Strongly Disagree**

Comments...

34.) I am working on a community project that gives me a sense of purpose.

- 1. Strongly Agree**
- 2. Agree**
- 3. Somewhat Agree**
- 4. Disagree**
- 5. Strongly Disagree**

Comments...

35.) I take care of my physical health (exercise, diet, and sleep).

1. Strongly Agree
2. Agree
3. Somewhat Agree
4. Disagree
5. Strongly Disagree

Comments...

36.) I feel safe within the Kearsarge Valley.

1. Strongly Agree
2. Agree
3. Somewhat Agree
4. Disagree
5. Strongly Disagree

Comments...

37.) I feel a connection with the surrounding natural environment.

1. Strongly Agree
2. Agree
3. Somewhat Agree
4. Disagree
5. Strongly Disagree

Comments...

- 2. Agree
- 3. Somewhat Agree
- 4. Disagree
- 5. Strongly Disagree

Comments...

39.) I have a positive vision for the Kearsarge Valley.

- 1. Strongly Agree
- 2. Agree
- 3. Somewhat Agree
- 4. Disagree
- 5. Strongly Disagree

Comments...

Thank you for your completion of this survey!

(Your score and tips for change will be provided below)

Results

Your overall resiliency score was: _____



Very Resilient



Moderately Resilient



Not Very Resilient

Your lacking areas of resilience include: _____

See the "tips for change" to find ways for individual, as well as, group ways to improve your resiliency.

Tips for Change

Business

- 1. Easy Individual Changes**
 - a. Support the local businesses in town.
 - b. Develop a list of local businesses and their products.
 - c. Pledge to spend a certain amount annually at a local business.
- 2. Easy Group Changes**
 - a. Provide an up-to-date list of businesses in the region.
 - b. Conduct a local business fair to promote local businesses.
 - c. Include local schools and youth in business programs.
- 3. Moderate Individual Changes**
 - a. Set a percentage of items to be obtained locally.
 - b. Volunteer at a local business.
- 4. Moderate Group Changes**
 - a. Provide incentives for new, small businesses.
 - b. Provide small capital loans for starting businesses.
- 5. Difficult Individual Changes**
 - a. Buy and consume strictly local products.
- 6. Difficult Group Changes**
 - a. Start a "Community Currency."

Food

- 1. Easy Individual Changes**
 - a. Choose locally grown products. Eat an apple from down the street!
 - b. Visit a local, family farm. Who are the people making these products?
 - c. Start growing your own food. Creating something from, seemingly, nothing.
- 2. Easy Group Changes**
 - a. Develop annual event for farmers to meet customers. Producers and consumers meeting.
 - b. Bring farms into schools. Fresh, local cafeteria food!
 - c. Promote the use of Community Supported Agriculture (CSAs).
- 3. Moderate Individual Changes**
 - a. Track your food miles. How far does my average meal travel?
 - b. Include one locally produced item or completely local meal each day.
- 4. Moderate Group Changes**
 - a. Survey the community for what they use and want in available. What do we want?
 - b. Develop incentives for local farms. We have money and you have food!
- 5. Difficult Individual Changes**
 - a. Start a completely local diet. Find a producer and connect.

6. Difficult Group Changes

- a. Develop a food hub for local producers.

Transportation

1. Easy Individual Changes

- a. Reduce travel that is unrelated to work. Walk and ride around the town/city.
- b. Utilize public transportation. Don't fuss, ride the bus!
- c. Commute with others. Save money and carbon emissions.

2. Easy Group Changes

- a. Educate public on negatives of excessive travel.
- b. Educate public about sustainability and conservation of energy.
- c. "Carfree" Vision of the future. What does the public see?

3. Moderate Individual Changes

- a. Search for residency near your workplace. Travel time and expenses will reduce.
- b. Utilize "FlexJob" or Telecommuting opportunities. Half-at-home-half-at-work jobs.

4. Moderate Group Changes

- a. Increase parking prices in community. Shame on driving personal automobiles.
- b. Provide "Parking Cash-Outs" for those provided with parking spots. Selling an unused spot.

5. Difficult Individual Changes

- a. Develop a comprehensive carbon footprint calculation for one year's travel. How high?

6. Difficult Group Changes

- a. "Think-Ahead" strategies for future land management. Build in mind of tomorrow.

Residential Recommendations

1. Easy Individual Changes

- a. Utilize natural light and conserve energy.
- b. Develop a residential energy audit spreadsheet. What areas should be checked and how?
- c. Conduct a "Do-It-Yourself Home Energy Audit." It's easy and saves money for the homeowner.

2. Easy Group Changes

- a. Promote and commend homes that being energy efficient. People can get competitive.
- b. Facilitate a week of home energy audit awareness. Saves money and is cheap.
- c. Fossil fuel alternatives. What options are out there?

3. Moderate Individual Changes

- a. Begin investment in alternative energy sources. Although not as powerful, but cleaner.
- b. Adjust structure of home to increase energy efficiency; large windows for example.

4. Moderate Group Changes

- a. Provide classes on becoming a certified Residential Energy Auditor (REA). Town builder?
- b. Assess and rank houses based on efficiency. The lowest is the best here.

5. Difficult Individual Changes

- a. Minimize/Eliminate use of oil for home. Switching and cutting energy consumption.

6. Difficult Group Changes

- a. Provide an alternative energy fund; which would include infrastructure changes.

Social Network and Connectivity

1. Easy Individual Change

- a. Join/Start a group in the community. If you have an idea, share it.
- b. Find a way to voice your opinion; whether it is over the internet or in conversation.
- c. Do some volunteer work? Do good and feel good.

2. Easy Group Change

- a. Develop list of existing groups in the community. What groups need recognition?
- b. Identify group leaders. Who are the ones who make the decisions?
- c. Organize festivals and other community events. Find ways to get people out of the house.

3. Moderate Individual Change

- a. Connect with neighbors. These people may be your best resource.
- b. Step into a leadership position. Be the change you wish to see.

4. Moderate Group Change

- a. Provide venue for group presentations and exposure.
- b. Assist underrepresented/misled groups. How can we organize and include these groups?

5. Difficult Individual Change

- a. Start skill sharing hub and local talents inventory. What knowledge is out in the community?

6. Difficult Group Change

- a. Search for diversity. How can we increase our group and its views?

Personal Resilience

1. Easy Individual Changes

- a. Pursue a hobby. What is a passion that will have you setting goals and relieving stress?
- b. "Find an ear" or find someone who you can talk to.
- c. Dwell on the positive. Pick something positive from the day before and reflect on it.

2. Easy Group Changes

- a. Plan comical activities. A laugh actually has physical and mental benefits.
- b. Provide information on mental and physical health. Education goes a long way.
- c. View of the future; "how do people see the area in the future?"

3. Moderate Individual Changes

- a. Explore meditation and yoga. Mental stimulation that reenergizes the mind and body.
- b. Take a nature walk. Explore and interact with the natural world.

4. Moderate Group Changes

- a. Include a mental health awareness week; increase knowledge and recognition.
- b. Throw a downtown or block party. Create a fun and social atmosphere.

5. Difficult Individual Changes

a. Eliminate sources of stress. No stress, then no need to find a way to relieve it.

6. Difficult Group Changes

a. Launch a Happiness Initiative. Progress measured by well-being rather than GDP.\

Tips for Change Explained

If you found that you were lacking resilience in a particular field, then here are recommendations on an individual level as well as community level. You will notice that each section is broken into the degree to which the change would require (easy=less demanding intervention points to difficult=very demanding intervention points). Under each section the letter “I” or “C” will be recorded next to the change which represents whether it is a community or individual act (I= Individual and C= Community).

Business

Easy Changes:

- I. Support the local businesses in town.

Analyzing payroll, goods/services purchased from other businesses in the area, profits spent by owners, and donations, it was found that “each \$100 spent at local independents generated \$45 of secondary spending, compared to \$14 for a big-box chain” (Patel & Martin, 2007). This is a way to increase the buffering capacity of the local economy. Inflows are increased while decreasing the outflow of money.
- I. Develop a list of local businesses; include what each offers.

This will provide a visual map of where items can be found so that, when in need, one knows where to find them locally. This is a strategy that will reduce the time it takes to search for items and increase the convenience of them. Now, one can plan trips based on what is needed and how to efficiently obtain those items and services. The city of Sandy, located in Utah, updates its business list quarterly. Site: <http://sandy.utah.gov/government/community-development/business-licensing/list-of-current-businesses.html>.
- I. Pledge to spend a certain amount of money (whether \$50 or \$500) on a local business each year.

The state of Virginia, on a large scale, developed the VA Pledge which demonstrates that spending \$10 a week at local-independent Virginia businesses can raise \$740 million dollars in Virginia communities (VA Pledge). If everyone within the community set an amount, businesses could have a greater consistency in revenues obtained from local customers.
- C. Provide an up-to-date list of current businesses in the region.

Destination New London, a non-profit organization, has assembled over 40 local businesses, in the town of New London, New Hampshire, to unify and promote all of the

businesses. Flyers, websites, and discounts for supporting these stores are provided as advertisement and incentives to visit these stores. This will increase the convenience and efficiency for customers as they have an easily to follow list.

- C. Conduct an event (fair or market) that promotes the local businesses in the area and provides them adequate spotlight in the community.

In Santa Cruz, California, the Santa Cruz Chamber of Commerce provides a three-hour event that facilitates the meeting of local businesses, organizations, and the community members of Santa Cruz face-to-face. Nearly 100 businesses and 2,000 individuals attend each year to see what is new in Santa Cruz. Included is a link to the *2013 Business Fair*:

<http://www.santacruzchamber.org/External/WCPages/WCEvents/EventDetail.aspx?EventID=2102>.

- C. Include the local schools and youth programs on ways they can promote and help businesses in the community.

As a whole, the University of Minnesota has recognized this practice and published an article to which expresses the benefits to the economic development of a community when school and local business interact. Here is an example of a School-Business Partnership:

Delavan, Minnesota's elementary school is taking advantage of the local community and business resources to form an agri-science school, a national first. Study focuses on the local agricultural economy for Kindergarten through sixth grade students. Family farms, local banks, and local and multi-national agri-businesses contribute products and knowledge which help students understand their community. Activities include visiting local farms and businesses with lessons in local and global agri-business; class farms with business-donated seeds and instruction; and student businesses with start-up loans from a local bank. Students gain insights and skills from community examples and local businesses provide meaningful support to this innovative school.

<http://www.extension.umn.edu/distribution/resourcesandtourism/components/DB6178-2.html>.

Moderate Changes:

- I. Set a percentage of items that must be obtained locally (that were produced locally).

"If you're buying local and not at a chain or branch store, chances are that store is not making a huge profit," says David Morris, Vice President of the Institute for Local Self-Reliance, a nonprofit economic research and development organization based in

Minneapolis and Washington, D.C. "That means more goes into input costs—supplies and upkeep, printing, advertising, paying employees—which puts that money right back in the community."

Read more:

<http://www.time.com/time/business/article/0,8599,1903632,00.html#ixzz2S5Xuc1g0>.

I. Volunteer at a local business (especially if it is struggling or starting).

Small businesses provide 99.7% of all employer firms. In the past 17 years, small businesses have generated 65 percent of the net new jobs. These businesses rely heavily on owner investment and bank credit (Small Business Advocacy , 2011). These are people taking risk to provide a service for the community, why not help them out?

C. Provide incentives for new businesses to enter the community.

Survey the public to figure out what wants and needs are in the community and are to be met within the local area. This will reduce the fear and risk that small businesses have as they begin the starting process. A business owner's survey has been created which can be utilized by one or a group of businesses to improve the business community and emerging enterprises. See this site: <http://fyi.uwex.edu/downtown-market-analysis/understanding-the-market/business-owners-survey/>.

C. Small capital loans could be organized and managed by the local government or non-profit group to support future small businesses start-up costs

To assist these struggling businesses as well as financial suffering individuals in the community the city of Alameda, in California, provides a Business Assistance Program which provides additional funds to new and existing organizations that provide jobs to low-to-moderate income persons. This is a great way to not only help businesses with expenses but increase the successes and distribution of money in the community. To read more visit: <http://www.cityofalamedaca.gov/Business/Business-Incentives>.

Difficult Changes:

I. All items, from clothes to bikes, and services will be bought and traded within the community.

Items that were produced with locally made resources (local farm produce or timber) will be sought after first. This will promote the businesses that are truly staying

local, supporting not only small supply chains but also the utilization of the environment around them. Bartering, in specific, is a way to trade goods and services without a medium, such as money. The elimination of money bases value on perception, how individuals feel about items, rather than on the current market (Luchs, et al., 2011).

C. Community Currency.

Across the United States, towns and cities have created their own community currency or “alternative currency” to the American Dollar. In Ithaca, New York the *Ithaca Hour* is a currency that is supported by over 900 organizations and has been in circulation for around 20 years. In tough economic times, it is a currency that can remain stable and intact (The Social and Cultural Capital of Community Currency: An Ithaca HOURS Case Study Survey). Brattleboro, Vermont and Cheshire, New Hampshire are also examples of towns that have created their own currency.

Food

Easy Changes:

I. Make a choice of locally grown products over that of competing, distant brands.

Alternative food networks, or the different processes we have for obtaining food, have risen to include: farmers’ markets, community supported agriculture schemes, and corporate organic food markets. Many of the “organic” products sold by large corporations may in fact be organic and meet those standards, but how much energy did it take for these products to make it to your plate? For more information on food systems and how they operate take a look at the article written by Jeffrey R. Follett titled, *Choosing a Food Future: Differentiating Among Alternative Food Options*.

I. Visit a local, family farm.

This will increase the ability for farmers to utilize direct selling to customers, which is often a less profitable strategy (Gale, 1997). Yet, by supporting these local farms, you are reducing the long and energy intensive food transportation systems that we have come to rely on. You are handling products that were grown in the same

community that they were sold, which a majority of the food in the grocery stores cannot be said for.

I. Start growing your own food.

One study actually showed significant evidence that gardening increased individuals feelings toward questions of energy levels, optimism, zest for life, and physical self-concept (Waliczek, Zajicek, & Lineberger, 2005).

C. Develop an annual event, on the town common or available public space, where local farms are given space and time to meet community members and sell their items.

A survey of farmers' markets and the attitudes of those attend them will provide better insight on how customers are responding and what determines their decisions. A similar study was conducted in Ontario, Canada which improved knowledge of customer preferences and what the potential local food network could look like in the future (Feagan, Morris, & Krug, 2004).

C. Bring farms into the schools.

Farm-to-School programs have increased significantly from 1998, where there was only 10, to 2007 where there were, roughly, 1,100 programs established in the United States. Overall, findings have shown that these programs have a significant impact on student choices, knowledge of food, and health. In one Wisconsin school, they created a project to have a "Wisconsin Homegrown Lunch" which incorporates meals and snacks from local farms. This is a fairly costly program, time consuming for workers to prepare food and price of local produce, which is why it is a community effort to support these programs to incorporate local food (Joshi, Azuma, & Feenstra, 2008).

C. Support and promote the use of CSAs.

Community Supported Agriculture organizations require the support of the community, whether by fees or work-share programs, to provide the community members with fresh and local produce. Advertise and promote community support through such events as a "CSA Appreciation Day". Prairie Hill Farm, located in Power, Montana, put on an event to celebrate the successes that their local CSA had. Check it out: <http://www.prairieheritagefarm.com/2011/09/csa-appreciation-day-and-recipes.html>.

Moderate Changes:

I. Tracking food miles.

According to the Worldwatch Institute, American food travels an average of 1,500 to 2,500 miles from farm to plate! This is an energy intensive system which relies heavily upon the use of oil to transport the items. Calculate your food carbon footprint with this website: http://www.foodcarbon.co.uk/login_2.php.

I. Include one locally produced item or have one completely local meal each day.

Arguably, indeed, all food begins local: different ways of eating originate in particular places, and with particular people, but over the years they are carried from those places by the movement of populations, ideas, and ingredients (Day, 2007). Choose a snack or side that can be included into daily meals. It is therefore important to manage and eat items that are produced within that season. Fresh apples will no longer be available in the middle of winter. This is a difficult task but habits will be formed and health may even improve!

C. Survey the local community to see what products they currently use (and need more of) and want to see produced in the future.

This will provide future farmers with ideas for what crops to grow and at what scale. In the Charlottesville-Albemarle region, which is in Virginia, a group surveyed the community to determine produce needs (Kilroy & Spain, 2012)

C. Local government and non-profit groups could develop incentives to local farms through financial programs.

The Center for Environmental Farming Systems has developed a program to help local governments in their efforts to support local farms. *Local Foods for Local Governments Support Programs* has one particular section, "Local Foods policy and technical support", that is geared toward funding opportunities. See this website for more information:

<http://www.cefs.ncsu.edu/whatwedo/foodsystems/localfoodtoolkit.html>.

Difficult Changes:

I. Completely local diet and reduction in consumption.

Eating in season and forming relationships with local producers will help reduce the miles from food to plate and support the small, family farms in the area. In 1989, Marcia Herrin and Joan Dye Gossow developed a report, *Designing a Sustainable*

Regional Diet, which gives an in-depth analysis of how individuals in Montana could construct their meals around regionally produced items. Find the balance between the need for food and the desire for food. The availability of good-tasting, inexpensive, energy-dense (calories) foods, and the serving of these foods in large portions are what have created so many health and environmental problems in the United States (Hill, Wyatt, Reed, & Peters, 2003).

C. Developing a food hub within the local area.

However, a 2010 report by the United States Department of Agriculture (USDA), Economic Research Service noted that one of the main constraints to the entry and expansion of local foods is the “lack of distribution systems for moving local foods into mainstream markets. Rather than having a chain grocery store in the community, supported by the world, the food-hub creates its own world that supports the community (The Role of Food Hubs in Local Food Marketing, 2013).

Transportation

Small Changes:

I. Reduce the amount of travel in a car, unrelated to work travels.

Devise a strategy to shop locally, rather than travel to distant stores. This was discussed in a paper, *Local shopping as a strategy for reducing automobile travel*, written by Susan L. Handy and Kelly J. Clifton from Iowa University. Although they did not witness much change in their study, the option of local shopping increased the possibility of reduced automobile travel.

I. Use public transportation when possible.

In 2012, Americans took 10.5 billion trips on public transportation, the 2nd highest annual ridership number since 1957. Along with joining an increasing group, one can save money by using public transportation. Individuals who ride public transportation can save on average \$9,242 annually based on the January 11, 2010 national average gas price and the national unreserved monthly parking rate. Find more facts at:

http://www.apta.com/mediacenter/pressreleases/2010/Pages/100112_Transit_Savings.aspx.

- I. Commute with others (those along the way of travel) to reduce overall emissions and cost of travel.

Stanford University started a program called "Commute Club". It rewards students who travel with others and reduce the amount of time they commute solo. To find out more check out their website:

http://transportation.stanford.edu/alt_transportation/Commute_Club.shtml#join.

- C. Post reasons on why it is negative to drive often, in areas that have a lot of public traffic (foot traffic that is!).

When we are informed, and knowledge is expanded, decisions may be better. Ernst B. Haas discusses how knowledge changes the decisions that are made, particularly in large organizations (Haas, 1991). On a lower level, increasing public knowledge may have positive results.

- C. Provide educational opportunities (such as college courses or weekend seminars) to increase the public's knowledge of sustainability and non-renewable resource conservation.

At the University of Washington, there is a graduate school engineering program which specializes in Sustainable Transportation. It considers such areas as design, environmental impact, and health in its teachings. How can the community gain or utilize this knowledge? A program could be developed to assist an individual, or individuals, to provide them with a similar educational opportunity as provided by the University of Washington.

- C. "Carfree" Visioning is a projection of how the local and regional community would appear without the use of cars.

Many industries may fall, but what will rise in their place? Do people see more stores? Are there dirt roads replacing paved roads? Is there fear and chaos? However people respond, their views should be taken into consideration as they affect their current decisions. Surveying the public and their travels may help produce information to create future infrastructure changes (Codina, Marin, & Montero, 2012).

Moderate Changes:

I. Look for residential locations that are closer to the household provider(s) place of work.

Washington D.C. has recently established a *Live Near You Work* program which offers incentives for employees to put a down payment on a new house and any additional costs for moving closer to their place of work. See more at:

<http://newsfeed.time.com/2011/05/08/embrace-the-beltway-d-c-offers-residents-12000-to-move-closer-to-work/>.

I. Utilize “FlexJob” opportunities.

Flexible jobs, sometimes referred to as telecommuting jobs, allow for employees to work from home part-time. This reduces travel to and from work as well as, provides an increase in family interaction (Noonan & Glass, 2012).

C. Increase parking prices in the community.

The city of Santa Monica, in California, has increased its parking fees to combat limited space. This may also decrease the number of people that decide to use private transportation. Check out their changes:

<http://www.smgov.net/departments/transportation/parking.aspx>.

C. Parking Cash-Outs.

This provides financial incentives for commuters who use alternative modes of transportation. It is California Law that any business that offers employees with subsidized parking spaces allows employees the ability to receive a cash allowance if they do not use the space provided. This could be applied on a community level where biking, walking, and using public transportation “pays off”. This is supported by the EPA as well to reduce automobile emissions (Environmental Protection Agency, 2005).

Difficult Changes:

- I. Develop a comprehensive carbon reduction strategy that will analyze one year's worth of travel.

Transportation comprises nearly 30% of all U.S. greenhouse gas emissions, and this number is increasing. Calculate your current traveling patterns. Where are the areas of mitigation? Calculate using such tools as the one linked here:

<http://www.nativeenergy.com/travel-carbon-calculator.html>.

- C. "Think-Ahead" strategies for future land management that will provide accessibility and promote alternative travel use.

This was discussed by an Idaho Statesman. In 2009, he discussed how the current system only fixed the cracks and degradation of the transportation roads. Better transit systems need to be looked into (Our View: Idaho must think ahead about transportation issues, 2009).

Residential

Easy Changes:

- I. Utilize natural light and conserve electricity.

It does not take sophisticated technology, such as the Ambient Intelligence Software discussed by Kerner, Simunic, and Prasad in their 2012 article on home efficiency, but rather conscious decisions on when electrical lights are needed and not.

- I. Develop a residential energy audit spreadsheet.

List items, hours of use, and wattage needed to depict what the yearly energy use is for each item and the cost that is entailed. It is not difficult to develop the spreadsheet and it will provide a visual representation of energy usage as well as cost associated with that use. Here is a way to develop an energy audit spreadsheet:

http://www.ei.lehigh.edu/ei/energy/resources/handouts/activities/Energy_audit_handout_student.pdf.

- I. Conduct a "Do-It-Yourself Home Energy Audit".

From water heating to insulation, a person can test the efficiency of their home. This will increase energy conservation while saving the resident money. Check out this website for more details:

http://www.seattle.gov/dpd/static/DIYweb_LatestReleased_DPDP016083.pdf

C. Promote and commend homes that are currently utilizing energy efficient practices.

A day or week should be dedicated to open houses (if permitted by the owners) to display the different techniques and strategies to reducing residential energy usage. These houses could be recognized, with an award or title, for their efforts. San Diego spotlighted one of their energy efficient homes and provided advertisement for an open-house for all to see. See here:

<http://www.utsandiego.com/news/2013/apr/19/energy-efficient-home-tour/>.

C. How to conduct personal energy audits.

A local non-profit or local government could provide the public on ways that they can reduce their energy usage. Experts and resources could be utilized to develop a list on how to conduct these personal audits. A program, known as *Operation Energy Save*, has been created to help people save money on energy costs (AARP, 2009).

C. Fossil fuel alternatives.

The local government could provide links and direction toward companies that are providing energy sources (solar, wind, etc.) that do not utilize fossil fuel use (coal and oil). Providing options is all that is needed for this recommendation. The Pennsylvania Department of Environmental Protection provides local governments and municipality groups with information on energy at their website:

http://www.portal.state.pa.us/portal/server.pt/community/local_government/10404.

Moderate Changes:

I. Begin investment in alternative energy sources.

As of 2008, there are federal tax credits that are provided to those who invest in residential technologies such as solar water heat, photovoltaics, geothermal heat pumps, and several other specified alternatives (US Department of Energy, 2013).

Assess the cost-benefit to the home and the best possible alternative.

I. Make structural adjustments to the home to increase efficiency.

Changing/improving insulation and increasing the number of south facing windows (heat and natural light) are just a few alterations that could be made to reduce the amount of energy used on a residential level. The home energy audits explain changes that can be made (mainly reducing consumption and small alterations) but this is a way to take the recommendations further. San Diego Regional Energy Office has supplied several of these structural changes in this link:

<http://energycenter.org/uploads/Residential%20Efficiency%20Measures.pdf>.

C. Offer classes to become a certified Residential Energy Auditor (REA).

This is a technical position that does require some background in energy, engineering, construction management, or other specified fields named. Provided by a business, non-profit, or local government, the position will provide the area with a consultant on how to construct future homes and adjust current standing homes to be more energy efficient. Experts could be paid to come and teach courses on the specific skills needed by these special individuals in the community. Site to reference:

<http://www.aeecenter.org/i4a/pages/index.cfm?pageID=3477>).

C. Ranking houses and providing rewards.

The local government should be handing out energy report cards, similar to what utility companies already distribute out with their customer's bills, but include a ranking system. Smiley/Frowning faces were used by one utility company in Sacramento, to commend efforts to reduce energy usage (for more on the story visit:

http://www.nytimes.com/2009/01/31/science/earth/31compete.html?_r=0).

Difficult Changes:

I. Eliminating/Extremely minimize the use of oil for home energy.

There are many options, in place of oil, for home energy. For example, David Mears, a professor from Rutgers University, completed eliminated oil from his New Jersey home through the use of solar energy and sub-flooded floors for heat storage. He did not have to pay for a heating bill for over 25 years through this system (Mears, 1981).

C. Alternative energy fund and infrastructure changes.

A community could apply for funds to apply beneficial changes geared toward residential efficiency. For example, the state of Oregon offers a *Community Renewable Energy Feasibility Fund Program* which provides up to \$50,000 for projects such as solar water heating and geothermal heat. Find more at:

http://www.dsireusa.org/incentives/incentive.cfm?Incentive_Code=OR140F.

Social Network and Connectivity

I. Join/Start a group in the community.

The first step in starting a group or getting involved in a group within the community is to identify one's own interests. Once identified, pursue and take on a major role in the organization process. Form the agenda and strategy the way you want (Jordan, Brown, Trevino, & Finkelstein, 2011)

I. Let your voice be heard!

If you feel that you are being isolated or forgotten in your community, find opportunities where you can have state your concerns and opinions. Town meetings are usually a difficult place to initially bring concerns forward but your journey may eventually lead you to that point. Even the internet can be a way to voice an opinion in the community. Utilized by so many today, the internet has become an essential media source in today's society (Rheingold, 2008).

I. Do some volunteer work!

This is a great way to help out and make a difference in the community while meeting other individuals within the area. Working in soup kitchens, helping youth groups, and getting involved in your place of worship may provide you with more than new friends, but a sense of accomplishment and joy. Studies, like the one conducted by Thoits and Hewitt, have drawn the conclusion that volunteer work does provide meaning and purpose in life, which can enhance well-being (Thoits & M., 2001).

C. Develop a list of existing groups in the community.

By developing a list, organizations (like the local government) can map out active groups in the community. A website, *Grass Roots Lexington*, was established in Lexington, Massachusetts to provide all with a list of existing groups in town. Each group is placed in a category which makes it easier to locate for people searching. Check it out at: <http://www.lexgrassroots.org/lists.html>.

C. Identify group leaders.

Identifying a leader is an important task as they usually determine the ethical decisions and agendas accomplished by the group. The St. Petersburg Fire & Rescue conducted a survey amongst the organization to determine what qualities were desired in a leader. This facilitated identification of group goals and agenda, while developing a list of qualities for the choosing of future leaders (Jolley).

C. Organize festivals and other community events.

This is a fun and active way for a group (community group or local government) to present groups with publicity and recognition for their active role in the community. Whether the group is religiously based or not, a festival can be a way to show how the community is welcoming and supportive of diversity. For example, there have been several vegetarian festivals throughout the United States in such cities and towns as: DC, Chicago, Baltimore, and Richmond. See more at this website: <http://www.vrg.org/blog/2011/09/07/putting-on-a-vegetarian-festival-vegetarian-festivals-galore/>.

Moderate Changes:

I. Connect with your neighbor(s).

Whether it is over a nice dinner or just meaningful conversation (more than just the occasional “Hi” before you get your mail or walk your dog), find a way to get to know your neighbor. Some 28 percent of us know none of our neighbors' names, reports a 2010 Pew survey. In times of need, whether during a physical or emotional disaster, they are the closest resources that can be utilized. For an article covering this topic, check out: http://articles.chicagotribune.com/2012-04-25/features/sc-fam-0424-know-neighbor-20120424_1_neighbors-social-networking-sites-block-party.

I. Step into a leadership position.

For example, you are a part of the Beautification Committee in town. You have a project idea for transforming the public green into an “edible garden” filled with raspberry bushes and apple trees. The committee likes your idea and considers adding a

small portion of your idea (maybe one apple tree) into the common. They are too busy dealing with their other projects. Take your ideas, that work alongside the Beautification Committee's overall objective, and form a task force geared around your great project.

C. Develop calendar which allows for group presentation.

Opening up of public spaces and allowing groups to utilize them will allow for multiple festivals and public outreach/presentation to occur for multiple groups that have formed. The city of Alexandria, Virginia allows for open calendar days for groups to display or express ideas to the public. Site: <http://www.visitalexandriava.com/calendar-of-events/>.

C. Assist suffering groups.

Rather than being passive and allowing for a particular group to "fall through the cracks" be active and identify issues. If the group is lacking leadership, provide information of classes on how to become a leader. If membership or lack of interest is the issue, identify similar groups that may be able to absorb the falling group. Opinions and ideas should not be lost due to lack of leadership or participation!

Difficult Changes:

I. Start a skill sharing hub and utilize local talents.

Boulder, Colorado has organized a program known as a *SkillShare* which provides the community with individuals that can donate time, to assist and teach others a particular skill or craft. In return, the donated time is converted into a "Time Dollar" which can be used to gain assistance or knowledge from another member of the *SkillShare*. Learn more about it at: <http://www.skillsharenetwork.org/>.

C. Search for diversity!

Demographics are often utilized by local government to see where their community stands in regards to such parameters as age, sex, and race of the population. Having a well-balanced and supportive community not only attracts more people but the ideas that those people have. Demographics are just numbers... but they could represent future project areas. For example, a community that is mostly comprised of

retirees and “very matured” individuals may lack locations and activities that would attract younger generations.

Personal

Small Changes:

I. Pursue a hobby.

Pursuing a hobby can lead to an intrinsic reward. Rather than competing for an extrinsic reward, such as money or a grade, the reward is within and determined by the participant (Covington, 2000).

I. Find an ear.

Depression and suicidal behaviors among youth are a major public health concern. Suicide was the third leading cause of death among 15–24 year olds in 2008, and accounts for 4,298 deaths in that population each year. Approximately 1.5 million students attempt suicide and another 2.9 million seriously consider committing suicide each year. Lines of communication have been developed to control these extreme cases, but even talking through the small problems could help with solutions (Evans, Davidson, & Sicafuse, 2013).

I. Dwell on the positive.

“If you pay attention to the darkness, you will never find the light”. This is a positive way of thinking discussed by Thomas A. Richards, a psychologist a part of the Social Anxiety Institute. Right as you wake up, jot down at least one thing that was positive from the day before. Attempt a 30 Day Trial and see how you feel.

C. Plan comical activities.

show that laughter has several health benefits. It can reduce blood pressure; a great workout; can reduce stress and relieve anger; connects people due to rise in energy and “bubbly feeling” we all get from laughter. This is supported by several studies and research conducted including the following (done by the University of Kentucky in 2008): <http://www.ca.uky.edu/hes/fcs/factshts/hsw-caw-807.pdf>.

C. Provide information on mental and physical health.

Flyers, posters, and informative events (movies, guest speakers, and discussions) can provide the public with beneficial information on why they should

examine their personal health, both physically and mentally. Providing this information shows that there is concern for the members of this community. The Department of Mental Health in the Massachusetts government has established facts and programs that can be utilized by the communities within the state. Site: <http://www.mass.gov/eohhs/gov/departments/dmh/>.

C. Views of the future.

Take an interest in peoples' vision of the community in the future. The city of East Cambridgeshire, located in the United Kingdom, documented how their residents saw the city in the future. Check out the report through this link: <http://www.eastcambs.gov.uk/sites/default/files/emcvi.pdf>.

Moderate Changes:

I. Explore meditation and yoga.

While exercise and physical activity is important, mental stimulation and reenergizing the mind and body are just as important. Yoga and meditation is a low risk and reduced effort way of energizing (controlled breathing) and visualizing. It is a way to explore and reach a state of harmony to reduce stress and anxiety. Reducing these mental factors also has an impact on body responses. For example, relaxation reduces glucose, sodium, and overall cholesterol levels. There are several sources for the benefits of yoga and meditation including: <http://caeyc.org/main/caeyc/proposals-2011/pdfs/KellyPinzak.pdf>.

I. Take a nature walk.

Visit a local park, walk a trail, or observe a small brook to take in just a few of the amazing views nature has to offer. Put aside work and stressors in your life to interact with the beauty that surrounds your everyday life. For information on this subject take a look at this section of the book titled, *Healthy Parks, Healthy People: The Health Benefits of Contact with Nature in a Park Context* (<http://www.georgewright.org/262maller.pdf>).

C. Mental health awareness week.

Choose a theme, whether it is a specific mental illness or recognition of acts of kindness, to focus on for one week each year. Movie screenings, informative discussions, and activities should be all geared toward raising awareness about mental

health and, specifically, the topic of interest. This is a great way to have the community gain knowledge while actively participating in mental health awareness. The Mental Health Foundation has distinguished May as the month during which they have a “mental health week”. Site: <http://mentalhealthfoundation.net/about.html>.

C. Downtown party.

Starting off the summer, the city of Kalamazoo, Michigan, hosts a block party downtown. Bringing in multiple entertainment venues and businesses, it is a great way to bring the community together annually. Check it out:

<http://downtownblockparty.com/about/>.

Difficult Changes:

I. Eliminate sources of stress.

Work, work, and work some more to make money to feed what society says to be a “healthy work-life balance”. Step back and examine your life. Find what you truly need, aside from what society tells you. You will find that you will need to work a lot less and have less stress to compensate for. One great resource to help you accomplish this is a book titled, *Your Money or Your Life*. Here is a brief overview if you wish to have a glimpse of what the book contains

(<http://www.frumi.com/images/uploads/yourmoneyoryourlife.pdf>.)

C. Happiness Initiative.

Many studies have found that higher levels of personal income above needed levels for survival do not increase happiness substantially (Brooks, 2008). If we make all of the money that society is telling us, then we won't be happier? The pay check increases, purchases increase, and GDP will have the ability to increase. If we gauge progress based on money, then happiness and well-being of the community is not considered. Therefore, we must redefine progress and adjust how we measure it. The Happiness Initiative is a program which has a goal of increasing the happiness and well-being of individuals in the community. Using 9 domains of happiness, established by the small country of Bhutan, the initiative measures the happiness levels in the community. For more information on the Happiness Initiative or the projects that have been

developed from them visit: <http://www.happycounts.org/conduct-a-happiness-initiative/>.

Works Cited

(n.d.). Retrieved March 27, 2013, from Destination New London:
<http://www.destinationnewlondon.com/>

AARP. (2009). *Operation Energy Save*.

Beimborn, E. A. (2003). *Systems Analysis- What, Why, and How*. *University of Wisconsin- Milwaukee* , 1-7.

Brooks, A. C. (2008). *Gross National Happiness: Why Happiness Matters for America- And How We Can Get More of It*. New York: Basic Books.

Codina, E., Marin, A., & Montero, L. (2012). A tool for the design of public transportation services. *IEEE* , 1-4.

Covington, M. V. (2000). Intrinsic Versus Extrinsic Motivation in Schools: A Reconciliation . *American Psychology Society* , 22-25.

Day, G. (2007). Eating Locally - a comparative investigation of local food cultures in three rural areas of the United Kingdom. *European Society for Rural Sociology* , 1-30.

Environmental Protection Agency. (2005). Parking Cash Out: Implementing Commuter Benefits as One of the Nation's Best Workplaces for Commuters. *EPA* , 1-19.

Evans, W. P., Davidson, L., & Sicafuse, L. (2013). Someone to Listen: Increasing Youth Help-Seeking Behavior Through a Text-Based Crisis Line for Youth. *Journal of Community Psychology* , 472-487.

Feagan, R., Morris, D., & Krug, K. (2004). Niagara Region Farmers' Markets: local food systems and sustainability considerations. *Local Environment* , 235-254.

Friedmann, & Harriet. (2007). Scaling up: Bringing public institutions and food service corporations into the project for a local, sustainable food system in Ontario. *Agriculture and Human Values* , 389-398.

Gale, F. (1997). Direct Farm Marketing as a Rural Development Tool. *Rural Development Perspectives* , 19-25.

Haas, E. B. (1991). When Knowledge is Power: Three Models of Change in International Organizations. *University of California* , 1-266.

Hill, J. O., Wyatt, H. R., Reed, G. W., & Peters, J. C. (2003). Obesity and the Environment: Where Do We Go from Here. *Science Magazine* , 853-855.

Jolley, W. E. (n.d.). Identifying Important Leadership Qualities for Successful Organizations. *FEMA* , 1-66.

Jordan, J., Brown, M. E., Trevino, L. K., & Finkelstein, S. (2011). Someone to Look Up To: Executive-Follower Ethical Reasoning and Perceptions of Ethical Leadership. *Journal of Management* , 1-24.

Joshi, A., Azuma, A. M., & Feenstra, G. (2008). Do Farm-to-School Programs Make a Difference? Findings and Future Research Needs. *Journal of Hunger and Environmental Nutrition* , 229-246.

Keeton, W. R. (1995). Multi-Office Bank Lending to Small Businesses: Some New Evidence. *Federal Reserve* , 1-14.

Kilroy, E., & Spain, A. (2012). Quantifying Demand for Local Food in the. *Virginia Tech Extension* , 1-81.

Local Businesses Work Together to Strengthen Their Community. (2013, March). Retrieved March 20, 2013, from Independent We Stand: <http://www.independentwestand.org/local-businesses-work-together-to-strengthen-their-community/>

Luchs, M., Naylor, R. W., Rose, R. L., Catlin, J. R., Gau, R., Kapitan, S., et al. (2011). Toward a Sustainable Marketplace: Expanding Options and Benefits for Consumers. *Journal of Research for Consumers* , 1-12.

Meadows, D. H. (1999). Leverage Points: Places to Intervene in a System. *The Sustainability Institute* , 1-21.

Mears, D. R. (1981). Solar Heated Home Using An Attached Greenhouse and A Woodburning Stove. *Brock University* , 1-11.

Noonan, M. C., & Glass, J. L. (2012). The hard truth about telecommuting. *Labor Review* , 38-45.

Our View: Idaho must think ahead about transportation issues. (2009)., (pp. 1-2).

Ozturan, C. (2004). Resource bartering in data grids. *IOS Press* , 155-168.

Patel, A., & Martin, G. (2007). *Going Local: Quantifying the Economic Impacts of Buying from Locally Owned Businesses in Portland, Maine*. Maine Center of Economic Policy.

Rheingold, H. (2008). Using Participatory Media and Public Voice to Encourage Civic Engagement . *Creative Commons Attribution* , 97-118.

Small Business Advocacy . (2011). Advocacy: the voice of small businesses. *US Congress* , 1-2.

The Role of Food Hubs in Local Food Marketing. (2013). *USDA* , 1-56.

The Social and Cultural Capital of Community Currency: An Ithaca HOURS Case Study Survey. (n.d.). *International Journal of Community Currency Research* , 1-15.

Thoits, P. A., & M., H. L. (2001). Volunteer Work and Well-Being . *Journal of Health and Social Behavior* , 115-131.

US Department of Energy. (2013). *Federal Incentives/Policies for Renewables and Efficiency*. Retrieved March 29, 2013, from DSIRE: http://www.dsireusa.org/incentives/incentive.cfm?Incentive_Code=US37F

VA Pledge. (n.d.). Retrieved April 15, 2013, from Loudoun Local: <http://localutionproject.com/choose-to-make-your-own-pledge-to-shop-local/>

Waliczek, T., Zajicek, J., & Lineberger, R. (2005). The Influence of Gardening Activities on Consumer Perceptions of Life Satisfaction. *HortScience* , 1360-1365.

Wylie, J. (2013). Expertise: Resiliency .

Guide to Distributing and Understanding Survey

Community Resilience Analyst Copy

This document has been included to inform any individual or group of recommendations for organization and strategies for distributing and analyzing the survey. Take the recommendations and apply them to the community that is being observed.

Survey Sources

This survey can be distributed as a hard-copy, but it is recommended that it be converted into an online database. For example, www.surveymonkey.com provides a quick and easy way to import the questions and answers into the system. It is suggested that there are text-boxes left after each question to provide participants opportunities to voice opinions or reasoning behind answers. The issue that arises with surveymonkey.com, as with several other online survey creating websites, is that free space is limited to roughly 10 questions. Another possible website that could be used is <http://freeonlinesurveys.com/>.

Scoring

The original resilience survey included a way to calculate the scores for each section manually. The way each section was calculated was by first assigning each answer a numerical number. For example, "Very Often" or "Strongly Agree" was assigned the score of "1". All answers have their corresponding scores to the left. After completing the sections, calculate the sum of the answers. Take the total number of questions and multiple that by 5. This will provide the highest possible score that can be achieved for that section. Divide the sum of the answers from the section and divide it by the highest possible score achievable. Finally, multiply the answer by 100 to obtain the resilience percentage; the lower the better. See below for an example of the calculation.

Food

Total of Answers: _____

Percent of Resilience: (Total of Answers)

$$\frac{\text{_____}}{25} \times 100$$

% < 40 = Very Resilient

% < 60 = Fairly Resilient

% > 60 = Less Resilient

% > 80 = Lacking Resilience

See the recommendations section if resilience appears to be lacking or if improvement is desired

Other Surveys

Community & Regional Resilience Institute. Community Resilience System. 28 February 2013 <<http://www.resilientus.org/collaborations/index.html>>.

Jamaica Plain New Economy Transition. "JP Resiliency Measures." 2 February 2012. JP Transition. 1 March 2013 <http://jptransition.org/wp-content/uploads/2012/02/JP_Resiliency_Measures_2011.pdf>.

University of Queensland and Southern Queensland. "Building Resilience in Rural Communities." (2008): 1-52.

YES! Magazine. How Resilient Are You? 2010. 27 February 2013 <<http://www.yesmagazine.org/issues/a-resilient-community/how-resilient-are-you>>.