PLAN FOR OPPORTUNITY

Plan for Opportunity

Summary Report on

Resiliency *for the MS Gulf Coast*

August 2013

ACKNOWLEDGEMENT

CONTENTS

<p style="text-align: center">**Resiliency in the *Plan for Opportunity***</p>

I. Introduction

The initial sustainability planning for *Plan for Opportunity* did not include a resiliency component. This came about as the topical committees began to assess their current conditions, the state of the housing, transportation, water, food, and economic development/work force systems within the region. As the committees and the stakeholders identified problems that were damaging to a particular system the discussion became not just about the need to maintain and improve the performance of the system; there was an acknowledgment (after the devastation of Hurricane Katrina) that the MS Gulf Coast was vulnerable and for any system to be 'sustainable' that system must be resilient. As such, at the outset of the discussion it was stated that *a resilient system has the ability to recover from expected or unexpected circumstance that threaten to destroy a system.* This preliminary definition of a resilient system evolved into a definition of a resilient Gulf Coast, and the set of conditions that needed to be in place for creating a resilient MS Gulf Coast.

II. The Resiliency Committee

The Resilience Committee was formed to work with each of the topical committees to understand the importance of resilience to their system, to discuss the concept of resilience as it pertained to the system and what strategies could effectively reduce the vulnerability of the system.   The members of the committee participated in five facilitated work sessions, along with the members of the topical committees. The participants focused on what the sustainable system would look like in twenty years and then dissected the obstacles (vulnerabilities) that threatened that outcome. The final breakdown of strategies to overcome the obstacles were examined and assigned measures to monitor the success of implementing a specific strategy. The work session summaries are in Section VII.

Resiliency Committee Members:

- American Red Cross
- Environmental planners
- Habitat for Humanity
- Local Architect, AIA, LEED-AP
- Mississippi Coast Interfaith Disaster Task Force
- Mississippi Department of Marine Resources
- Mississippi Land Trust
- Mississippi State Port Authority
- Mississippi-Alabama Sea Grant Consortium, including the University of Mississippi, Auburn University and the University of Southern Mississippi
- NOAA Coastal Services Center
- Southern Mississippi Planning and Development District
- United Way

III. Assessing the Vulnerabilities

Vulnerabilities were examined as a system would be weakened or destroyed by a known or unforeseen occurrence. The occurrence could be sudden or incremental changes that decimate essential parts or

the whole system.   Vulnerabilities to the systems on the MS Gulf Coast were not limited to the impact of climate variability. The unique approach of the *Plan for Opportunity* study of resiliency was to allow the participants to discuss all vulnerabilities that could have a deleterious influence on the ability of a system to recover. The participants discussed the factors that caused a system to be vulnerable. Such that, the coast may be vulnerable to hurricanes, but more specifically, within the system *what or who* may be vulnerable *and why* is the system vulnerable?   The discussions within each of the topical areas provided insight into a particular threat resulting from a sudden or incremental change, examples reported below.

Housing:	The Threat/Change	What is vulnerable?	Why is it vulnerable?
•	Climate	Buildings, Structures	Located in flood or surge zones
•	Population	Aged and handicapped	Lack diverse housing stock
•	Economy	Cost of housing	Newer/costly building codes and insurance

Transportation:	The Threat/Change	What is vulnerable?	Why is it vulnerable?
•	Climate	Stock and level of service	Proximity to flood and surge
•	Population	All populations	Mobility options are limited
•	Economy	Living Wage	Severed access to opportunity
•	Land Use	Livability	Inaccessible development

ED/Work Force:	The Threat/Change	What is vulnerable?	Why is it vulnerable?
•	Population	Low-mod income	Lost culture of work ethic
•	Workforce	All workers	Lack of new skills development

Water:	The Threat/Change	What is vulnerable?	Why is it vulnerable?
•	Climate	Quantity	Reductions in water reservoirs
•	Land Use	Quality/Quantity	poor land management

Food:	The Threat/Change	What is vulnerable?	Why is it vulnerable?
•	Climate	Agricultural crops	Sensitive to temperature
•	Population	Isolated populations	No access to healthy foods
•	Economy	Locally grown	Poor marketing

IV.   The Concept of Resilience- The Human Factor

The concept of resilience is both pragmatic and personal. While a system is often defined by its infrastructure with precise pieces and parts, and resilience is used to address the strength and adaptation of this structure, the concept of resilience is also a personal characteristic of strength and resolve, of being able to make judgments and decisions with known consequences. The committees discussed at length how individuals interacted within each system. It was a consensus that *how the individuals performed within the system would help to strengthen or weaken the system*, and that human interaction could effectively work to build resilience or, to its detriment, could increase its vulnerability.

For example, in the work sessions, the participants' focus shifted from the system's mechanics to the influence and engagement of people within the system, as below:

- Food – less about crops or the animals and more about the 'food chain'; more about people expecting healthy food, access to food, supporting farmers.
- Water—less about the pipes and valves, but more about the preservation of water and awareness of the threat against the quality and quantity of the supply of water.
- Transportation – less about the vehicle or road; instead it was about people having a choice of transportation to allow them to live and work where they want to be.
- EDWF – less about the employment but more about the readiness of the workforce to take on new jobs that may be available.
- Housing – less about the structure but more on the efficiency, affordability and location of the housing so that people can live productive and prosperous lives.

In every work session the participants discussed that *a leading contributor of a poorly performing system was an uninformed or disengaged public*. The recommendation was that people needed to become active stakeholders in the system. This was considered to be a very daunting task, however, it required an increase in education and in some cases changing attitudes, but the success of this effort was directly linked to the resilience and sustainability of the region.

A few examples,

- Food – People are unaware of where food comes from and how it is associated with their health and ability to undertake activities.
- Water- People are unaware of how they pollute the drainage system and how land uses can erode and destroy precious, valuable shoreline.
- Transportation – People are unaware that a home 20 miles from work and shopping is not a less expensive choice if the cost of owning and operating a personal vehicle is included in the household expenses.
- EDWF – People do not value education at an early age, not understanding that their children would be developing the skill to learn and mastering language that can give them a better chance of success in life.
- Housing – People do not understand the need to create a household budget that can guide their decision to buy or rent a home.

V.   Indicators of Achieving Resilience

Lastly, the committees discussed the indicators that could be used to measure the success of a system in becoming resilient. The participants in the work sessions were asked to identify indicators* that were as follows:

- *Relevant*, providing direct feedback on the outcomes of implementation;
- *Feasible*, leveraging the use of credible, commonly available data for reporting purposes;
- *Timely*, capturing actions and outcomes that are current and relevant;
- *Useful*, providing significant value to decision-making;
- *Systemic*, offering a metric that measures true progress toward the achievement of the goals and multiple goals that highlight the integrated nature of sustainability and resiliency;
- *Reliable*, providing a consistent reflection of the achievement or performance; and

- *Valid*, representing the concepts and underlying phenomena

Adapted from "Indicators and Information Systems for Sustainable Development: A Report to the Balaton Group" by Donella Meadows, 1998

VI.   The Making of a Resilient Mississippi Gulf Coast

The final discussion of the Resiliency Committee was to draft a definition or description of resilience that was specific to the MS Gulf Coast, that captured the character if the people and communities of the coast and described how our region would face the challenges of the future by becoming resilient.

What was interesting about the individual work sessions, was that there were themes and terms that were repeated among each session when asked how to define a resilient system. Even with their unique perspective, the committee members were able to identify several distinct markers of resilience which were integrated into a definition of resilient for the MS Gulf Coast.

To be resilient several conditions must be present and in fact it is unlikely that the existence of one condition without the others will not provide a satisfactory result that a system will not successfully survive a threat or occurrence, sudden or incremental changes, and the system will fail.

The following are the statements made by the participants in the work sessions on resiliency. They are responses to the question, what are the key terms and concepts of resilience as related to your sustainability topic: transportation, water, food, housing and economic development/work force?

1. Capacity implies having strength and infrastructure in place, to:
   - Lessen the impact of a sudden change or event.
   - Adapt to incremental changes that weaken a system. Capacity to adapt to incremental changes, not just a single event.
   - Provide redundancy or preparation or availability of resources.
   - Provide the active maintenance of system performance.

2. Culture of resilience that is not present within the community must be taught, such that resilience is as follows:
   - Instilled through lessons learned, passed down through generations.
   - Taught as a state of being self-reliant in recovery at a personal and community-wide scale.
   - A skill to respond to known and unknown threats that includes preparation and practice, such as staging (access to) the Resources necessary to expedite response and recovery from disasters.
   - A foundation of understanding and knowledge within a community culture that generations can draw from to recover.

3. Ability suggests a level of skill that may be required to respond and recover to a change,
   - Ability to bounce forward, not just bounce back.
   - Ability to respond to changes, not just disasters.
   - Flexibility (elasticity) built within the cycle of the system that allows adaptation to occur with forward progress. Adaptable and flexible defines a stronger community that is prepared for change.
   - Durability and strength to adapt and grow through time and challenges.

- Patience and the mindset of survival to build resiliency into a system and to recover from events. Patience, planning and persistence that allows for testing and improving along the way.
- Acceptance of events and changes as *challenges.* Acceptance of a 'new normal' after a change that is a good thing, a positive move forward.
- Independence and self-reliance must be present; help can only assist.

4. Community Planning
   - Recognition of the significant role of the community and community organizations in executing a recovery plan
   - Infrastructure in place to respond to events.
   - A plan and practice to be ready, preparation creates the capacity to adapt or recover to sudden events and incremental changes.
   - Historical perspective as a reality check of what the future may bring.
   - Planning ahead to be prepared to recover. Preparation based on experience creates order in the process, establishes control.
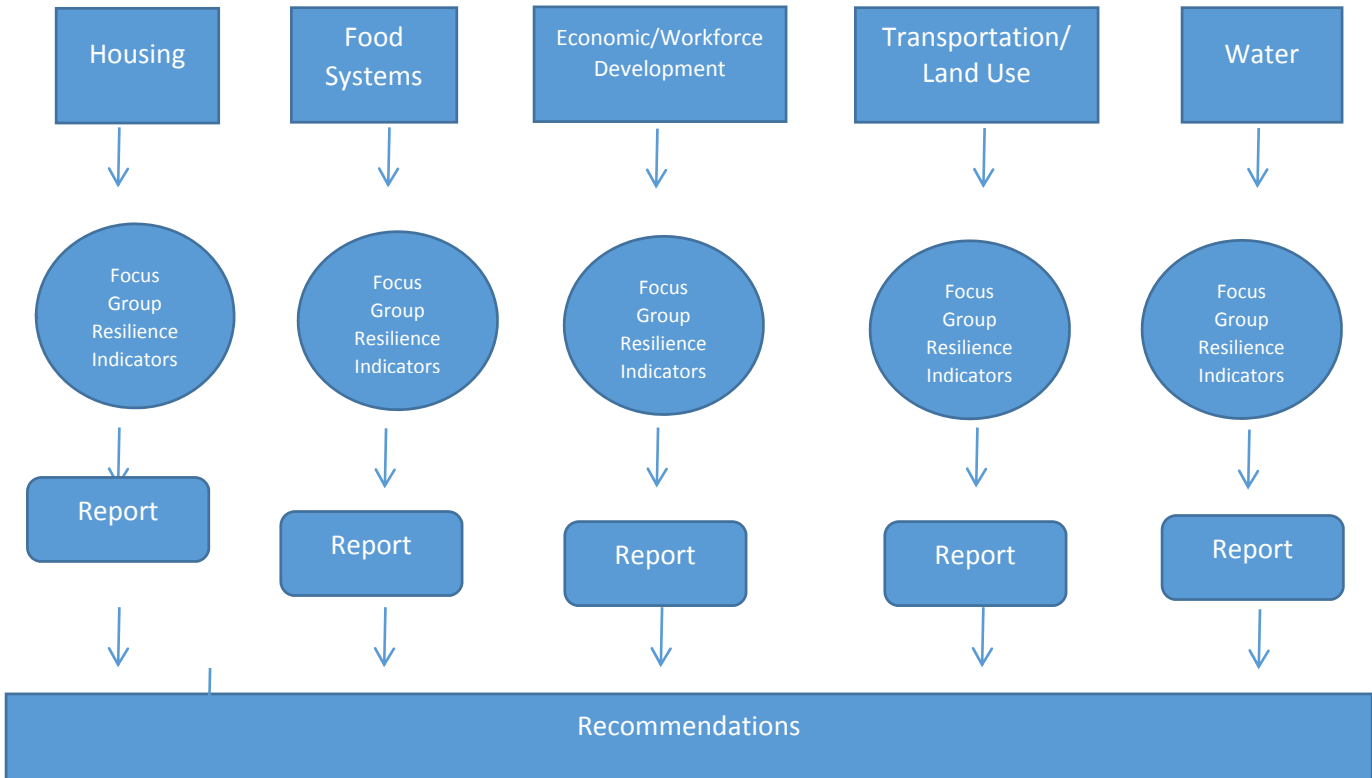
The Resiliency Committee proposed several definitions and discussed the key concepts, terms and words that were needed in a definition that captured the attitudes and behavior of resilience and directed the policies and resources as investments in the human and structural capital of resilience. Resilience is attained by a continuum of practice; hence, the definition is:

The Mississippi Gulf Coast is becoming more resilient by creating the following:

A foundation of understanding and knowldege of sustainble parctices and the abiltiy to implement those practices within a culture of resilience that teaches self-reliance as well as collaboration on a personal and community-wide scale; and

Community planning, preparation and collaboration to develop and retain the ability to respond to changes, adapt to changes, and thrive; and

Capacity, the will and the reorces to adapt to incremental changes or sudden tramatic events, to sustain remaining resources while incorporating changes and to emerge stronger.

VII.   Work Session Summaries

The work session summaries capture the raw content of comments made during discussions and outline the process used to examine resiliency issues within each of the topical areas. These summaries were returned to the respective topical committee for reference in developing the *Plan for Opportunity*, as the flow chart describes below.

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┌──────────┐  ┌──────────┐  ┌──────────────────┐  ┌────────────────┐  ┌──────────┐
│ Housing  │  │   Food   │  │ Economic/Workforce│ │ Transportation/│  │  Water   │
│          │  │ Systems  │  │   Development     │  │   Land Use     │  │          │
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     ↓             ↓                 ↓                    ↓                ↓
  ( Focus      ( Focus           ( Focus              ( Focus          ( Focus
    Group        Group             Group                Group            Group
   Resilience   Resilience        Resilience           Resilience       Resilience
   Indicators)  Indicators)       Indicators)          Indicators)      Indicators)
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 │ Report │   │ Report │        │ Report │          │ Report │       │ Report │
 └────┬───┘   └────┬───┘        └────┬───┘          └────┬───┘       └────┬───┘
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┌──────────────────────────────────────────────────────────────────────────────┐
│                              Recommendations                                   │
└──────────────────────────────────────────────────────────────────────────────┘
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The following Work Session Summaries are for the five topical areas:

1. Economic Development and Work Force
2. Housing
3. Food
4. Transportation/Land Use
5. Water

Work Session 1. Economic Development and the Workforce in the *Plan for Opportunity*

The Economic Development and Workforce Subcommittee for the *Plan for Opportunity* focused on issues that affect the economic growth within the region and the associated job market for the work force. Guided by the Livability Principles of the Federal Sustainability Communities Partnership, the subcommittee studied the potential to revitalize downtowns and create opportunities to connect the workforce to higher paying jobs. The subcommittee had been concerned with two key issues, first, that much of vacant and under-utilized land and buildings available for adaptive re-use in downtown areas lie dormant, and secondly that the current labor market require greater skills, training, accessibility and community support to move into higher paying jobs. The committee questioned if the long term

redevelopment of the MS Gulf Coast can meet the needs of the workforce for higher paying jobs and will the employment centers be adequately resilient withstand economic hardships and devastating coastal storms?

Define Resiliency in Economic Development and the Workforce (EDWF)

During the joint work session the members of the resiliency and EDWF subcommittees were asked to describe resiliency in economic development and the workforce EDWF.   Terms and concepts of resilience were discussed as related, first, to recovery from a major event and secondly as related to incremental changes. According to the EDWF, to be resilient there must be, as follows:

- Foundation of understanding and knowledge within a culture that generations can draw from to recover
- Independence and self-reliance must be present; help can only assist
- A plan and practice to be ready, preparation creates the capacity to adapt or recover to sudden events and incremental changes
- Acceptance of a 'new normal' after a change that is a good thing, a positive move forward
- Patience, planning and persistence that allows for testing and improving along the way
- Historical perspective as a reality check of what the future may bring
- Preparation based on experience creates order in the process, establishes control
- Adaptable and flexible defines a stronger community that is prepared for change

Threats to Resilient Economic Development and Work Force

In order to build resiliency into economic development and the workforce the threats, or vulnerabilities, were examined. The participants discussed the problems associated with achieving a strong economy and high paying workforce. Once the threats were identified, the EDWF delved into the causes of these threats.

Threats

1. *Culturally deprived* within disadvantaged communities and populations of having the knowledge and experience to understand the value of work and how to work
2. *Accelerating technological advancement* embraced by many but with far more that lag behind in mastering new skills
3. *Increasing number of unemployable* due to poor education, criminal backgrounds and various disabilities
4. *Unstable or deprived home environment* creates atmosphere of low achievement in life
5. *Shift in capitalist structure* that drives out the small, independent or family-owned business to be replaced by franchise or big box establishments
6. *Generational debt* encumbers young adults with student, commercial loans
7. *Vacuous reserves of human capital* as many fall beyond the job market with inadequate skills
8. *Inadequate living wage* associated with low paying jobs and increasing housing (and related) costs

Causes that create or aggravate the threat to resilience

1. *Culturally deprived* of knowing and understanding the value of work and how to work
   a. Lack of role models

      b.   Formal education starts too late, insufficient early childhood education programs
2. *Accelerating technological advancement*
      a.   Poor access to technology for disadvantaged population
      b.   Technology marketed to the young, not the aging generation
      c.   Training not available through work
3. *Increasing number of unemployable*
      a.   Unbreakable cycle once in the social (and penal) system
4. *Unstable or deprived home environment*
      a.   Generational cycle with no interest or know-how to become educated, productive
5. *Shift in capitalist structure* that drives out the small, independent or family-owned business to be replaced by franchise or big box establishments
      a.   Opportunities to move into a market that is weakened by struggling local economy
      b.   Poor financial capital to invest in family business
      c.   No succession plan
6. *Generational debt* encumbers young adults with student, commercial loans
      a.   Strong marketing and easy applications entice unexperienced into poor financial choices
      b.   Society pushing toward four-year programs, not on junior colleges or vo-tech program
7. *Vacuous reserves of human capital*
      a.   No longer in workforce and no knowledge how to re-position to re-enter
      b.   Lack of cross-training for new skills and new jobs
      c.   Fear of innovation, learning new skills, failure
8. *Inadequate living wage*
      a.   *Incomplete education reduces opportunity for job with advancement*
      b.   *Poor social and employment skills tie people to 'dead-end' jobs*
      c.   *Local economy not attracting higher paying jobs*
      d.   *No training programs to prepare people with new skills for higher paying jobs*

Resilient Economic Development and Workforce in Twenty Years

The participants discussed the characteristics of resilient economic development and workforce in twenty years. This look forward was intended to refine the definition of resiliency specific to economic development and the work force, and to define strategies that may be implemented to achieve this resiliency. The participants wrote down their vision of resilient economic development and workforce which centered on developing the economy and work force, as well as on education, national policies and mobility.

Resilient Workforce

➢ Trained, educated, diverse workforce earning a livable wage
➢ Prepared work force, knowledgeable in their field/industry, adaptable and technically advanced
➢ Education and training for diverse job skills
➢ Low unemployment with a trained workforce based on the labor market
➢ Diversified workforce with the education and varying skills to respond to a domestic economy; keeping jobs in the US
➢ Multi-skilled and self-reliant workforce
➢ Public/private partnerships provide workforce/skill training

➢ All sectors of the community and businesses creating opportunities to train/educate and employ the workforce

Resilient Education

➢ Public Education includes Kindergarten & Pre-K
➢ Recovery Plan
➢ Early Childhood Education

Resilient Economic Development

➢ Locally owned & operated businesses
➢ Thriving small businesses
➢ Diversified economy

Resilient Policies

➢ Balanced budget
➢ Return to manufacturing
    o Improved access to healthcare
➢ Reduction in income gaps
    o Growth of middle class
    o Ability to overcome poverty

Resilient Transportation

➢ Coordinated & multimodal transportation connections

Focus on Recommendations to Achieving Resilient Economic Development and Work Force

The participants formed groups to *focus on two specific recommendations* for achieving resilient economic development and workforce. The recommendations were examined to identify the challenges or obstacles and the strategies or measures that could be taken to overcome the obstacles.

Recommendation: Trained, educated, diverse workforce earning a livable wage

Challenges to a trained, educated, diverse workforce earning a livable wage	Strategies to Overcome Challenge

Education system not working with children when they are developing language and social skills	• State of MS should require kindergarten
	• Increase access to books and appropriate materials
	  o Summer reading programs
	  o Dolly Parton Imagination Station

Education system not incorporating learning skills with life skills	• Communication options should be integrated within the school system
High school student dropout rate has negative impact on economy, community and personal lives	• Provide more short-term certification programs to target students failing in traditional school • Create mentoring programs and tutoring for high school students and young adults • Implement innovative programs to shift the homework paradigm

Poverty, crime and public assistance working against creating job opportunities	• Improve the communication between businesses and educators about the skills needed in the workforce • Pair up free meal programs with learning opportunities
Livable wage is an unknown concept	• Develop information and educational materials for financial institutions, business leaders and educators on the living wage
Inadequate skill testing, training and vo-tech options for people	• Improve the communication between businesses and educators about the skills needed in the workforce
High school students pushed to college and not vo-tech	• Provide more short-term certification programs
Parents may be developmentally delayed	• Provide parenting classes • Encourage classes with parent and child

Measures of Success/Indicators

The strategies implemented will need to monitored and measured over time to assess if they are being successful in achieving the goal of a specific recommendation. The group discussed and identified indicators that are measurable. The following table lists the indicators for measuring the success of creating a *trained, educated, diverse workforce earning a livable wage.*

Indicator of Success	Measurement
People less dependent on government assistance	1. Number of individuals receiving assistance will decrease
Students will be graduating from high school	2. Graduation rates will increase
Children's reading levels will increase	3. Percent of third grade students reading on level will increase
Parents will become engaged and involved in their children's education and training	4. Attendance at PTO meetings will increase 5. Number in parents skill classes will increase
Business and industries will become mentoring partners with education	6. Number of businesses working directly with schools as mentors will increase

Recommendation: Locally owned and operated businesses	
Challenges to locally owned and operated businesses	**Strategies to Overcome Challenge**
Insufficient capital	• Collaborate between agencies that provide resources
Demand and cost of insurance	• Seek assistance through business associations; state development authority • Encourage jurisdiction to participate in CRS
Employee retention	• Collaborate with vo-tech programs and job centers for job-skill mentoring programs

Succession planning	• MDA to help with risks and resources
Competing with regional and national chains --- pricing challenges	• Policy to promote using local businesses first
Lack of awareness of available resources, such as, incentives, and tools to support small business	• Create an online resource center as a clearinghouse of information; asset mapping tool • Collaborate between agencies that provide resources
Lack of marketing budget	• Financial institutions to assist with providing resources for marketing • Chambers will help with marketing • Utilize social media to help marketing • Policy to promote using local businesses first
Operational risks	• MDA to help with risks and resources
Lack of coordination with local ED planners	• Policy to promote using local businesses first • Support regional policies to encourage and promote small, locally-owned business
Regulations of small business difficult to navigate	• Use MDA and local chamber to assist in complex regulations
Business association fees too high to join	• Use local chambers and MDA to support marketing
Underground businesses are unregistered	• Collaborate between agencies that provide resources to assist underground businesses

Indicator of Success	Measurement
Annual reports of business starts and growth	1. Number of businesses paying into the unemployment (UI)system will increase
Locally owned businesses are increasing and expanding	2. Number of small businesses increase (Secretary of State) 3. Number of locally owned businesses will increase (SOS)
Sales tax increasing revenues to state and local budget	4. Sales tax revenue will increase
Workforce participation rate will increase	5. Data reported by working age, employed and unemployed
Underground economy will move to storefront	6. The number of small business starts will increase 7. The amount of incentives to support small business will increase
Vacant and abandoned properties will disappear	8. Number of vacant and abandoned property will decrease

Summary of Strategies

There were two recommendations that were discussed in focus groups: creating a trained, educated, diverse workforce earning a livable wage and, developing locally owned and operated businesses. The prevailing concern of the workforce focus group was for education, that it should begin early in life, incorporate training in life skills (not just academic) into the curriculum and provide direction and opportunities to take several paths to success, including collage, vo-tech and certification programs. In particular the success of creating a trained, educated workforce that will be capable of achieving success in high paying jobs will depend on the collaboration of the business community with the educational system, to encourage business leaders as mentors and schools to test for specific skills needed by industries.

Small, locally owned businesses play an essential role in the diversity of the economy and in providing the early job training and start up wages for many new job seekers. These businesses are often located within communities that allow employees to walk or bus to work, and teach foundational job skills. These employees may stay and work in the small business or move on to new, higher-paying jobs. The small business needs the support, resources and assistance in business management and marketing that large, national or regional companies have in-house. These businesses combine in a regional total to support the lives and wages of many that live on the MS Gulf Coast.

Potential Definitions of Resiliency in Economic Development and Work Force

A resilient economic system is made strong by having diversity in business and an educated, trained workforce that is prepared for unexpected change.

A resilient economic system has, as a foundation, lifelong education that is directly associated with economic development through its most valuable resource, the human capital.

Work Session 2.   **Housing in the Plan for Opportunity**

The Housing Subcommittee for the *Plan for Opportunity* focused on issues that affect a person's ability to have a safe, affordable, suitable home on the MS Gulf Coast. The subcommittee studied housing as a system and as a structure. Housing as a system has many interrelated components that go into the delivery of housing, both market and subsidized housing. Housing as a structure is constructed to service the market, the people that will live in the house. The subcommittee was concerned with the many facets of housing for the MS Gulf Coast, in particular, in the future will housing meet the needs of the population as needs change over time and will the housing be affordable to all the people and will it be strong to withstand devastating coastal storms?

Define Resiliency in Housing

During the joint work session the members of the resiliency and housing subcommittees discussed how to describe resiliency in housing, as a system and a structure. Several terms and concepts of resilience were emphasized, that to be resilient there must be, as follows:

- Capacity to lessen the impact of a sudden change or event
- Capacity to adapt to incremental changes that weaken a system
- Capacity may include redundancy or preparation or availability of resources
- Strength as an implicit character of capacity
- Ability to bounce forward, not just bounce back
- Capacity includes the active maintenance of system performance

Threats to Resilient Housing

In order to build resiliency into housing the threats to the structure and system were examined. The participants discussed the problems associated with the delivery and maintenance of safe, appropriate and affordable housing. The discussion delved into the causes of these threats.

Threats

1. *Substandard construction* cannot withstand devastating events; it only provides minimal protection and exposes the resident to an unsafe living environment, particularly housing built prior to building codes and mobile homes built to less stringent codes.
2. *Location of housing* is not suitable in an area known to be:
   a. Coastal flood zone which exposes the building to repeated impact by flooding and destruction by storm surge; or is,
   b. Isolated or with poor access to needed resources and services that residents cannot reach without a vehicle.
3. *Uninformed homeowner* may not be aware of specific dangers of living in vulnerable areas and may not understand the costs associated with housing that includes maintenance and transportation.
4. *Cost of insurance* for housing can effectively direct people from living in housing within areas that are highly vulnerable to flooding and surge, but can result in a new exposure, an increase the cost of transportation and isolation from centers of activity.
5. *Cost of housing* dictates where people will live and how they will live.
6. *Ineffective subsidies and grant programs* do not leverage the investment as needed locally.

Causes that create or aggravate the threat to resilience

1. Substandard construction
    a. Codes are just a minimum and not providing the highest measure of protection
    b. Enforcement may not be consistent and standard across the region
2. Location of housing (in high risk areas <u>and</u> others in isolation)
    a. People continue to live near the water and have the finances to build in high risk areas
    b. Poor or unstable personal finances and related quality of life issues can prevent someone from moving into a better housing situation and from maintaining housing to strong, healthy standards
    c. Land use/infrastructure planning encourages low density, growth into rural areas and away from urban centers of activity.
3. Uninformed homeowner
    d. Lack of education on 'cost of living'
    e. No ancestry of skill-training on living independently
    f. Lack of focus on preventive, more on emergency management
4. Cost of insurance
    b. Industry adjustments to minimize risks and remove vulnerable from harm
    c. Preserve the insurance industry (profits)
5. Cost of housing
    d. Supply and demand
6. Ineffective subsidies and grant programs are too rigid and not flexible or collaborative with local organizations to support the local need for housing
    e. Increased costs to build safer, efficient housing (lower long-term costs)

<u>Resilient Housing in Twenty Years</u>

The participants discussed the characteristics of resilient housing in twenty years. This look forward was intended to refine the definition of resiliency specific to housing, and to define strategies that may be implemented to achieve this resiliency. The participants wrote down their vision of resilient housing which centered around two aspects of housing, the location of housing and the construction and housing stock, which includes the availability and access to housing.

Resilient Housing and the Location of Housing:

➢ Shift of people to increasingly live outside the special hazard zones,
➢ Communities will continue to develop close to the water,
➢ Land use plans (growth management regulations) will address hazardous areas for building and,
➢ Communities will be developed that are walkable.

Resilient Housing, Construction and Housing Stock:

➢ Building codes will emphasize best practice for construction,
➢ Retrofitting and mitigation will create stronger housing that remain standing and dry,
➢ Materials used in construction of housing will be more sustainable and renewable,
➢ Materials will be purchased locally to support the economy,

- Diversity of housing and ownership options will include smaller, studier housing that supports the increasing needs of future populations,
- Affordable housing will be available for every population
- Energy efficient housing will provide lower costs and higher quality of life and,
- Housing will become self-contained and self-sufficient for greater resource independence.

Focus on Recommendations to Achieving Resilient Housing

The participants formed groups to focus on three specific recommendations for achieving resilient housing. The recommendations were examined to identify the challenges or obstacles and the strategies or measures that could be taken to overcome the obstacles.

Recommendation: Creating More Diverse Housing Stock

Challenges to Creating More Diverse Housing Stock	Strategies to Overcome Challenge
Policies and Practice	
Policies continue to focus on traditional housing and community development	• Encourage communities that have access to support systems and services
Tax programs favor home owners with favorable mortgage rates	• Support incentives for the best developments (consistent with new policies)
Local land uses and zoning disallow options for housing types	• Encourage jurisdictions to incorporate land uses that embrace options • Demonstrate the benefit of having transitional housing to serve the needs of the community
Regional planning does not address land use and housing	• Housing share program with regional planning to secure property rather than competition. • Propose a pilot project with three counties working to highlight three housing options for development in their county to demonstrate the marketability and desirability of diverse housing stock.
Affordable housing is located (in accordance with Federal program regulations) without access to transit and work, stores and activity centers	• Encourage Federal collaboration with local, regional housing plans to close the gaps in housing needs
Public Support	
People are unaware and uninformed about the variety of housing and ownership options that may better suit their lifestyle and financial needs	• Education / Cost Benefits of housing and ownership options
Perception by some that urban centers are congested or lacking parking	• Continue to work with business leadership programs to teach the economic benefit of healthy, active communities with diverse housing options for all needs of the population.

Public status is associated with home ownership, single family home and a certain life style	• Continue to work with leaders of the community to change the perception of affordable as a positive attribute of a healthy, active communities with diverse housing options for all needs of the
Negative connotation of 'affordable' is attributed to low income population	population.

Measures of Success

The strategies implemented will need to monitored and measured over time to assess if they are being successful in achieving the goal to create a more diverse housing stock. The group discussed and identified indicators that are measurable.   The following table lists the indicators for measuring the success of creating more diverse housing stock.

Indicator of Success	Measurement
Periodic regional analysis of zoning practices	7. Incremental increase in more housing options allowed
Housing stock will change in appearance	8. Housing inventory will report increase in housing types
Housing pilot program will expand	9. Number of diverse housing developments will increase
Housing share program will be adopted	10. Number of jurisdictions in housing share program will increase
Community rating system (CRS) for jurisdictions will improve across the coast	11. CRS rates will increase 12. Insurance rates for jurisdictions will decrease
Zoning across the coast will standardize for continuity	13. Number of jurisdictions modifying zoning for regional consistency will increase
Investments in new developments will support diverse housing across the coast	14. Number of new developments of diverse housing with access to activity centers will increase (from baseline data inventory)

Recommendation: Housing That Will Stay Dry and Standing

Challenges to Housing Staying Dry and Standing	Strategies to Overcome Challenge
Policies and Practice	
Updating and enforcing building codes	• Develop regional and then possibly statewide building codes
High cost of elevating buildings	• Develop benefit/cost to demonstrate long term benefits outweigh the short term costs
Federal programs do not match local needs	• Encourage Federal collaboration with local plans for greater success
Everyone involved in housing and development needs information on	• Establish a mechanism to educate on the relevance of how and where and what we build:

assessing cost/benefit of what and where to build.	o Code officials o Policy-makers o Builders o Lenders o Insurers o Insurance Companies o Homeowners o Renters

Lack of incentives to build housing to withstand increasing risks of wind and water.	• Leverage existing
	   o State mandates
	   o CRS
	   o CDBG
	   o Tax incentives
	• Create new public / private partnerships

Public Support	
Property owners are unaware or uninformed about the risks of how and where they build/live. Language barriers is a challenge	• Fact sheets • Faith based to disseminate facts
Policy holders lack information on risks and the cost of insurance	• Fact sheets
Attitude of public to allow the individual to build where and how they choose	• Fact sheets • Faith based to disseminate facts

Indicator of Success	Measurement
Housing will withstand events	9. Number of houses not destroyed 10. Fewer houses with major damage
Houses built to higher building standards	11. Less insurance claims 12. Insurance rates decreases
People better educated about risk	13. Number of flood policies increases 14. Number of houses built to higher standards increases

Recommendation: Affordable Housing will be Available to Every Population

Challenges to Developing Housing that is Affordable – The Economy of Housing	Strategies to Overcome Challenge
Policies and Issues Affecting the Housing Costs	
Few housing choices with economic diversity	• Create a continuum of housing options
Owner vs renter market not in balance with needs of public	• Develop housing market study based on demographics
Housing does exist within communities but may be ignored if in need of repair or not eligible for assistance Vacant land does exist within communities but development constrained by land use/zoning	• Utilize the small rental assistance program • Allow for diversity of type and size within urban areas; inclusionary zoning • Create consensus among local land uses for greater diversity

Cost of housing is high	• Support local builders and suppliers and promote 'right size' housing to 'right size' cost • Local builders employ local labor
Programs and financial institutions can be restrictive and only for new builds	• Create partnerships among leadership organizations to support balanced, diverse housing choices and ownership options • Encourage Federal programs to align with local needs
Housing Costs and Living Wages	
Living wage too low for many to have choices in housing	• Create programs to address the attitude of workforce to adapt to new jobs/skills • Continue the dialogue between economic development /work force and the housing community
Public uniformed about the true cost of housing • Ownership vs Renting • Right size housing	• Educate on the total cost of housing (life cycle cost analysis) • Assist in discussion of best choice to own or rent • Demonstrate the value and benefit of having the right size house

Indicator of Success	Measurement
More diverse land use and housing choices	1. Number of vacancies will be reduced
More of the work force will be employed	2. The living wage will increase 3. The number of foreclosures will decrease 4. The number of cases for public assistance will decrease
People will be living a high quality of life	5. The number of health issues will decline
People will be in stable living environment	6. The number of people in long term housing will increase.

Summary of Strategies

There were several themes that were consistent among the three recommendations. The strategies that emerged from the discussion centered on resilient housing that is the "Right Size, in the Right Place, with ownership options to provide the Right Cost." The strategies focused on 1) Planning - land use and zoning that allows for diversity of housing types and sizes within urban areas across the region; 2) Construction- building codes that strive for higher not minimal standards, 3) Leverage Investment- collaboration with the Federal programs to encourage more flexibility and concurrence with local plans and needs for housing, 3) Economic Development - understanding the relationship of economic development, the work force and living wages, crucial to creating job opportunities and improving the ability of people to have choices in how they live, and 4) Education- learning the facts about the cost of housing, the cost of poor housing and the importance of making the right decision on the 'right size, right place and right cost' to support a high quality of life. The strategies included many tools that can

be used to educate and inform stakeholders, including fact sheets, benefit/cost analysis, housing inventory and forecasts, job skill training, partnerships and open dialogue to learn and create a consensus for more resilient housing.

Potential Definitions of Resiliency for Housing

A system made strong by having the capacity to respond to unexpected and incremental change.

A system with on-going active maintenance to assess vulnerabilities to unexpected and incremental devastating change and having the capacity to adapt and evolve, continuously functioning and growing stronger.

Work Session 3. The Food System in the *Plan for Opportunity*

The Food System Subcommittee for the *Plan for Opportunity* focused on the relationship of the food system to the community and economy of the MS Gulf Coast. The subcommittee assessed the current system; how accessible healthy foods are to the public and the capacity of the regional system to produce and deliver healthy foods. The subcommittee studied all aspects of the food cycle including how food waste was managed in the region. The final recommendations of the subcommittee were grouped by four goals:

1. Support access to healthy food for all community members
2. Foster connections between stakeholders
3. Strengthen the regional food economy
4. Promote environmental health

Define Resiliency in the Food System

During the joint work session the members of the Resiliency and Food System subcommittees were asked to describe resiliency in the food system. Terms and concepts of resilience were discussed as related to recovery from a major event and to having the ability to adapt to incremental change. To be resilient there must be, as follows:

- Ability to respond to changes, not just disasters
- Flexibility built within the cycle of the system that allows adaptation to occur with forward progress
- Acceptance of events and changes as *challenges*
- Durability and elasticity to adapt and grow through time and challenges
- Infrastructure in place to respond to events
- Patience and the mindset of survival to build resiliency into a system and to recover from events

Threats to a Resilient Food System

The participants discussed the problems that threaten the ability of a food system to produce and deliver safe, healthy foods that are accessible to all the people within the region.

Threats

7. *Natural and manmade activities* exert pressure on a system and compromise the ability to produce and deliver safe, healthy food.

8. *Inefficient and disconnected food waste management practices* deprive people access to leftover foods; deny the composting and other food waste processing industries use of valuable food waste feedstock; and contribute to increasing disposal costs, use of valuable landfill space, and an increase in methane emissions as these materials decompose in landfills.

9. *Policies and legal issues* can negatively affect the ability to manage the safe production and delivery of safe, healthy foods

10. *Uninformed public* purchase and consume increasing amounts of unhealthy, unsafe foods

11. *The economy and market assessments* determine where and who has access to healthy foods.

Causes that create or aggravate the threat to resilience

1. *Threat:* Natural and manmade activities exert pressure on a system and compromise the ability to produce and deliver safe, healthy food.

   Causes:
   a. Climate change
   b. Storm events
   c. Land use practice
      i. Toxin are released into water and soils
      ii. Flooding and draught
      iii. Hardiness zones impact food production
      iv. Pest and diseases change or increase

2. *Threat:* Inefficient and disconnected food waste management practices deprive hungry people access to leftover foods; deny the composting and other food waste processing industries use of valuable food waste feedstock; and contribute to increasing disposal costs, use of valuable landfill space, and an increase in methane emissions as these materials decompose in landfills.

   Causes:
   a. Use of food at the source is excessive. More food is ordered/prepared than is needed causing more food to be leftover, exceed shelf life, or spoil.
   b. Leftover food that is safe for consumption and could feed hungry people is thrown away.
   c. Food waste that could be processed into valuable nutrient containing compost and other products is thrown away.

3. *Threat:* Policies and legal issues can negatively affect the ability to manage the safe production and delivery of safe, healthy foods

   Causes:
   a. Well-intended legislation to allow for farmer markets not administered with health standards

4. *Threat:* Uninformed public purchase and consume increasing amounts of unhealthy and unsafe foods

   Causes:
   a. Public does not fully understand and appreciate the food cycle from the origin of food products, production, processing, delivery and storage.
   b. General public may assume the practice of food production, delivery, preparation and storage are healthy and safe, when in fact they are not
   c. Adulterated foods are processed and packaged without consumer knowledge
   d. Unsafe practice of food handling and storage leads to illness
   e. Prolific, economic foods are easily purchased from fast, convenience and other food stores

5. *Threat:* The economy and market assessments determine where and who has access to healthy foods.

   Cause:
   a. Recessive economy and lower income areas create food deserts for healthy food options

Resilient Food System in Twenty Years

The participants discussed the characteristics of a resilient food system in twenty years. This look forward was intended to refine the definition of resiliency specific to the food system, and to define strategies that may be implemented to achieve this resiliency. The participants wrote down their vision of a resilient food system which centered on the food system cycle of production, waste reduction and the workforce, safety and health, and education and policy.

_____

- ➢ Production / Technology / Infrastructure
    - Energy Efficient
    - High Tech
    - Low-input high yield
    - Infrastructure i.e. transportation, resilient buildings, etc.
    - Location & protection of space/land
    - New landfills are not needed
    - Smart GMOs
- ➢ Waste Reduction
    - Source reduction
    - Recycling / reworking of foods
    - Eco-food industry where waste stream is used by successful business
    - Curbside food waste collection from residences & businesses
    - 3 Waste containers are the norm
        - o Compostable
        - o Recyclables
        - o Waste
    - Stronger organic system
    - Food composting facilities @ growing farms
    - Efficient & Effective
    - Farmers use compost instead of fertilizers, chemicals and pesticides
- ➢ Workforce
    - More Farmers / Farming
    - Safe, Fair work environment
- ➢ Safety / Healthy
    - Longer shelf or storage life
    - Safer processing system
    - Extended shelf-life
    - Safe water supply
    - People have local access to healthy food, safe for consumption
    - Replace fast food with healthy fast food
- ➢ Education / Policy
    - Stream-lined & efficient process in place for handling legal challenges
    - Public Awareness (education)

- Educate the public on the food cycle so that they understand where food comes from and where it goes.
- Visible, edible landscapes
- More informed consumers

Focus on Recommendations to Achieving a Resilient Food System

The participants formed two groups to focus on two categories of recommendations for achieving a resilient food system: Production/Technology and Infrastructure, and Education/Policy. The recommendations were examined to identify the challenges or obstacles and the strategies or measures that could be taken to overcome the obstacles.

Recommendation: Production/Technology/Infrastructure

Challenges	Strategies to Overcome Challenge
Funds to invest in new technology and implement bmp Funds to operate farms Fertilizer and chemical costs are tied to petroleum	Develop incentives for farmers Farm Bill Subsidies to grow certain crops
Legislation and Regulations Permitting issues Traceability of foods Accountability (loss of control)	
Economic viability of farming Identifying markets for crops	Smarter conservation easements
Lack of farmers and those willing to adopt BMP	Invigorate youth involvement in farming and BMP Pathways to possibilities to demonstrate opportunities of farming as job/career
Communication and education of new technology to farmers	Experiment stations are good test beds Shift the paradigm to solution oriented
Marketing Don't always have consumers Farmers are farming; not advertising	Re-focus communication strategies to "buy local"
Many types of farms and farmers Large farms Backyard farms Community and Urban farms	Grow the work force for farming

<u>Measures of Success</u>

The strategies implemented will need to be monitored and measured over time to assess if they are successful in achieving a specific recommendation. The group discussed and identified indicators that are measurable.   The following table lists the indicators for measuring the success of implementing best management practice in the production of healthy foods by encouraging more people to farm and increasing the number of diverse types of farms to grow crops and raise animals for delivery within the region of origin.

Indicators of Success	Measurement
Farming increases as a vocation	15. Number of farmers will increase
	16. Tax incentives for farming will increase
Health of population will improve	17. Number of medical cases associated with nutrition will be reduced
	18. Number of people seeking food will decrease
Farmers markets will become commonplace	19. Number of farmers markets will increase
Local produce used locally will expand	20. Number of grocery stores selling local produce will increase
	21. Number of restaurant menus with local products will increase
	22. Number of participants in the *Farm to Institution Program* will increase
Stronger co-ops among farmers reinforce farming industry	23. The number of distribution hubs will increase

Recommendation: Education and Policy

Challenges to A. Developing and integrating a curriculum for life-long learning of the food system	Strategies to Overcome Challenge
Lack of funding for new educational programs	Get the community, employers and elected officials involved in supporting healthy initiatives and instructional programs
	Create workplace incentives to support employee healthy lifestyle practices
Lost the understanding and knowledge of the origination of food products, how to shop and prepare healthy meals	Develop creative, fun learning programs to teach
	Food production to consumption
	Cost of fast food compared to cooking at home

Need for greater interest in developing a curriculum
 	
Curriculum is not within the current academic structure and is not a cultural norm
	Create new methods of conveying messages and educating using social media and other web resources.
	
	    Links to sites
	
	    Fun facts

B. Creating informed lawmakers	
Communication of the Issues: Information provided to lawmakers may not be advocating healthy foods Lawmakers may not have the knowledge to ask pertinent questions and discuss the issue with constituents Overwhelming number of issues for lawmakers every session may lead to healthy food issues not being prioritized	Follow the legislative schedule to convey information in a timely and concise manner Get the media involved in conveying healthy messages Involve the business community to market technologies that support healthy foods from production to consumption.

Engaging on social aspect of changing behavior:
 	
Policies may be in place but are not in practice
 	
Public agencies may be focused on science and regulations and not on social behaviors
	Encourage agencies to get involved in the education process
	
	    Improve websites with links to information
	
	    Breakdown long-term goals for good health into short-term steps and impacts to implement

Measures of Success

The following table lists the indicators for measuring the success of developing and integrating a curriculum for life-long learning of the food system.

indicators of Success	Measurement
A. Developing and integrating a curriculum for life-long learning of the food system	
Health of all populations will improve	1. Obesity rate will decline
People will be living longer, more healthy lives	2. Instances of diabetes and nutritional related diseases will decrease 3. Life expectancy will increase
More freshly prepared food is consumed and not wasted	4. Waste to landfills will decrease
Employers are engaged and supporting healthy nutrition	5. Employers providing incentives to good health will increase
Increased farming and improved technology	6. Air quality will improve

	7. The number of farms and production will increase
Increased demand for recreational areas	8. The amount of open, recreational space will increase
B. **Creating informed lawmakers**	
Lawmakers will be communicating with interested people and groups about healthy food on a regular basis	9. The number of lawmakers engaged in community meetings on healthy food issues will increase
There will be a Healthy Regulatory Framework	10. The state will have regulations that directly link to a healthy lifestyle
There will be legislation that encourages and supports incentives for a healthy lifecycle of food	11. Lawmakers will report bills to a committee that will review for healthy initiates/impacts
More media educating people on healthy food issues	12. The number of articles and media coverage on healthy food issues will increase

Summary of Strategies

Two recommendations for achieving a resilient food system were discussed in focus groups: Production/Technology/Infrastructure and Education and Policy, which was subdivided into A. Creating a curriculum for lifelong learning of the food system and B. Creating informed lawmakers.   The discussion of the groups presented the concern that the general population has lost its connection to the food cycle and the current generation does not have the skill to shop or cook healthy foods. The reliance on prepared, processed foods has increased dependence on high quantity of agricultural production, while the quality of the crops and meats and the production processes may not be supporting a clean, healthy food cycle. The need to teach the young and all ages that health is linked to food and how they can be engaged in the healthy food system was emphasized and combined with the need to have the employers and communities supporting healthy lifestyles. The lawmakers could be encouraged to support healthy regulations and initiatives as the economic benefits of a healthy public are better understood.

The strategies that were presented were pro-active to create the collaboration between the stakeholders and the public in teaching and learning the benefits of a resilient food system that provides healthy foods from the farm to consumption, and to create a collaborative educational framework to provide information to lawmakers that will educate them on the issues and benefits to supporting a resilient, healthy food system.

Potential Definitions of Resiliency in Food

A resilient food system has the ability to produce and deliver healthy, safe food choices and an informed public that demands healthy foods in their neighborhood markets.

A resilient food system produces and delivers healthy, safe food choices and is accepted and supported by the community and lawmakers as essential to the health and well-being of the people and economy in the region.

Work Session 4. Transportation and Land Use in the *Plan for Opportunity*

The Transportation and Land Use Subcommittee (T/LU) for the *Plan for Opportunity* focused on the relationship of the transportation system to a sustainable economy, the living wage[1] and quality of life and health of the public. The subcommittee has made recommendations that are intended to reduce the average vehicle miles travelled (VMT) in the region, reduce mobile source emissions, and lower household transportation costs. Guided by the Livability Principles of the Federal Partnership for Sustainable Communities, the subcommittee has proposed measures to make alternative transportation options more efficient, accessible and safe, and more attractive to use. The subcommittee has expressed concern that future growth patterns on the coast may push development into the more rural areas of the counties, missing opportunities to redevelop urban areas that have existing infrastructure, access to jobs and other community resources and assets, including transportation.

Define Resiliency in Transportation and Land Use

During the joint work session the members of the Resiliency and T/LU subcommittees were asked to describe resiliency in transportation and land use. Terms and concepts of resilience were discussed as related to recovery from a major event and to having the ability to adapt to incremental change. To be resilient there must be, as follows:

- Preparation and practice of resilient skills to respond to known and unknown threats

- Staging (access to) the resources necessary to expedite response and recovery from disasters

- Culture of resilience that becomes instilled as lessons learned, passed down through generations

- Culture of resilience that teaches self-reliance in recovery at a personal and community-wide scale

- Recognition of the significant role of the community and community organizations in executing a recovery plan

Threats to Resilient Transportation and Land Use

The participants discussed the problems (internal and external) that threaten the integrity of the transportation system and leads to the disruption of service and reduces the capacity of the system to adapt to the needs of the community.   The discussion delved into the causes of these threats.

Threats

12. *Disruption of the transportation system* that prevents the transport of people and materials within and through the region, including needed supplies for recovery

13. *Inadequate local funds and unfunded mandates* that impacts the ability to maintain and expand transportation based on mobility needs

14. *Funding agencies* that do not leverage the investment as needed locally

15. *Exposure of public to health risk* from transportation of hazardous materials through communities and neighborhoods

16. *Bureaucracy* that hamper response and recovery

17. *Cultural indifference to multimodal options*

18. *Land development* that is not sustainable

19. *Community plans lacking capital improvement planning* to allocate funds for multi-modal transportation

20. *Loss of local, regional economy* to support living wage and prosperity of the region, reduces funding for transportation services

Causes that create or aggravate the threat to resilience

6. *Threat: Disruption of the transportation system*

   Causes:
   a. Natural Disasters
   b. Chemical Spills
   c. Cyber threats and terrorism
   d. Climate change, incremental changes

7. *Threat: Inadequate local funds and unfunded mandates*

   Causes:
   a. Local jurisdictions with limited capital funds and tax revenues are unable to commit the funds necessary to leverage Federal, State and foundation grant funds.
   b. Federal government will require by mandate that a provider implement activities or improvements that are not eligible for reimbursement.

8. *Threat: Funding agencies*

   Causes:
   a. Local and regional plans are not used as a guide when federal funding is allocated
   b. Federal programs may mandate funds to projects that are not within the transportation improvement program for the region

9. *Threat: Exposure of public to health risk*

   Causes:
   a. Lack of communication and information sharing between transporters of hazardous materials and local communities

10. *Threat: Bureaucracy*

    Causes:
    a. Lack of flexibility implementing regulations during emergency
    b. Difficulty in navigating the bureaucratic channels
    c. Lack of long-term continuity of emergency response and recovery

11. *Threat: Cultural indifference*

    Causes:
    a. Lack of history and experience with transportation modes to instill a cultural acceptance and understanding of the benefit of alternate modes of travel.
    b. Reluctance to support alternate modes that are perceived as threats to personal choice

12. *Threat: Land development*

   Causes:
   a. Unshakeable property rights advocates allowed to disregard policies and regulations imposed to protect the value of property and the welfare of citizens
   b. Short-term profit outweighs long range planning for suitable land development

13. *Threat: Community plans lacking capital improvement planning*

   Causes:

   a. Local jurisdictions pushed to create budgets that do not incorporate long term planning and capital investments.

14. *Threat: Loss of local, regional economy*

   Causes:

   a. Transportation system lagging in competition with other markets

Resilient Transportation and Land Use in Twenty Years

The participants discussed the characteristics of *resilient* transportation and land use in twenty years. This look forward was intended to refine the definition of resiliency specific to transportation and land use, and to define strategies that may be implemented to achieve this resiliency. The participants wrote down their vision of resilient transportation and land use which centered multi-modal options, land use, alternative energy/fuels, policy and communications/perceptions.

Multi-Modal Transportation Options

➢ Integrated transportation system with multiple linkages

➢ Diverse options for transportation

➢ Diverse options for transportation needs

➢ Multiple transportation Options

➢ Auto drive cars

➢ Multi-model transportation system that is connected with other forms of transportation but have it be adaptive to breaks in the system.

➢ Improved street connectivity at a regional level i.e. grid system that promotes walkability

   • East/West options

Land Use

➢ Having a trails network that enables a border-to-border travel, exercise.

➢ Develop Eco-tourism recreation cultures through alternative transportation. Draw people and money

➢ Can we meet our daily needs without a car?

➢ Concentrated development HUBs with more open space connected by public transit options.

- ➢ Smarter land use decisions to maximize infill developments in suitable locations.
- ➢ Regional transit system that is available to the workforce and free.
- ➢ Affordable & accessible to all and incentives for use
- ➢ Multi-use downtowns
- ➢ Higher density developments
- ➢ Protect natural areas through limited development
- ➢ Limited footprint
- ➢ Smart Growth in smart places

Alternative Energy/Fuels

- ➢ Increased use of renewable energy sources for self-reliance
- ➢ Increased use of alternative fuels both in personal and public transportation

Policy
- ➢ MPO to make final approval of design amenities included in projects.

  - • Local government currently makes all decisions regarding standards & design criteria. MPO to have more control over transportation project decisions to enable the incorporation of amenities for safety and alternative transportation into project design
- ➢ Active collaboration between federal and local entities able to assess and respond to locally agreed upon needs in the aftermath of another communal disaster.
- ➢ Strong communities & networks
- ➢ Balance the proportion of transportation funds spent in the region between roadway needs and alternative modes
- ➢ More regional land use planning.

Communications & Perceptions

- ➢ Public transit & perception of "cool"
- ➢ Supported by public & local gov't
- ➢ Strong communities & networks
- ➢ Making people understand how to lead by example.

Focus on Recommendations to Achieving Resilient Transportation and Land Use

The participants formed two groups to focus on two specific recommendations for achieving resilient transportation and land use. The recommendations were examined to identify the challenges or obstacles and the strategies or measures that could be taken to overcome the obstacles.

1. Recommendation: Lead by Example and Practice What we preach

Challenges to "lead by example and practice what we preach"	Strategies to Overcome Challenge
Transit challenges	
Timing aspect – hard to schedule use availability of appropriate transit.	*Support funding investment to increase transit services*
	Increase marketing of available services to promote ridership
Work schedule – boss does not support transit options.	*Encourage employer support of employees using transit as it is available (more flexible schedule)*
Bicycle challenges	
Motorists do not know rules of the road	*Educate motorists & cyclists on Rule of the Road*
Enforcement education issue with local police officers	*Incorporate bicycles and motorists Rules of the Road into existing programs for officer education*
Threats – cars/infrastructure to cyclists. Trash in bike lane, sand in bike lane (debris) deep ditches (cyclists in harm's way)	*Identify Public/private sponsors to host bicycle courses – how to commute safely*
	Encourage public support to promote construction and maintenance of safe biking facilities (on designated roadways).
Safety – crosswalks, bike lanes, in place, nighttime safety.	*Encourage public support to promote construction and maintenance of safe biking and walking facilities (on designated roadways).*
Security of assets / additional, secure bike racks	*Encourage business community to pay for bicycle racks along commercial areas to promote bike and walk trips.*
Need volunteers, people, etc. in order to promote community rides, National Bike Month.	*Present 'community rides' at business and civic organization meetings and at school events to encourage volunteerism.*
Multi-modal challenges	
We make it too easy to drive	*Minimize # of parking spaces in commercial areas with high biking and walking potential.*
	Develop standards for parking requirements with minimum and maximum spaces allowed on site.
Getting people to start small – a few times to commute	*Start with children (can ride their bikes to school)*

	Encourage employers to allow flex time if vanpooling or carpooling on Ozone Action Days.
	Create a Bike to Work Day in the fall with employee sponsoring as a civic event.
Locally relevant examples	*Highlight success stories on the TV and in the newspaper.*
	Businesses can provide rewards to employee ridesharing successes
Limited existing infrastructure	*Promote density to support more convenient transit*
	Communicate to elected officials the benefit of infill & development of transit
Weather conditions sometimes discourages people	*Encourage employers to install shower facilities for employees biking and walking to work.*
	Support funding for protected transit and pedestrian facilities within the urban area and along trails.
Funding is always an issue	*Perform benefit/cost to identify measures of alternative transportation that will increase economic competitiveness and improve quality of life*
Not enough density to support transit option in many non-urban or rural areas	*Promote connectivity with alternate modes, including para-transit, demand response, vanpools and carpools.*
Lack of public awareness	*Market the facts, high VMTs cost the individual out of pocket.*
Public perception – viewed as an inconvenience	*Market the facts, high VMTs cost the individual out of pocket.*

Measures of Success

The strategies implemented will need to monitored and measured over time to assess if they are being successful in achieving the goal of a specific recommendation. The group discussed and identified indicators that are measurable.   The following table lists the indicators for measuring the success of creating a *connected multi-modal systems that is used by the public for commuting and daily activities.*

Indicator of Success	Measurement
Increased visibility of people using alternative transportation	24. Number of buses and registered bicycles will increase
Census reporting increases in multi modal trips	25. Number of trips by alternative modes of transportation reported by census will increase
Bicycles more frequently ridden by choice	26. Number of bicycle miles travelled, self-reported, will increase
Bicycles ridden for longer trips	27. Number of bicycle trips travelled over 2 miles, self-reported, will increase
Bicyclers are aware of the self-reporting indicators	28. Number of bicyclists self-reporting will increase
Media are informed and supportive of alternative transportation mores	29. Number of reports, article and special coverage of events and activities will increase
Fewer SOV commuting trips	30. Increase in census reporting of trips by carpool
Infill redevelopment increases densities	31. Number of vacancies decreases and 32. Number of renovations (permits) increases
People are driving fewer miles	33. Number of VMT reported to census will decrease
Cyclists, pedestrians and water craft have more routes	34. Number of bike lanes increases 35. Number of 'share the road' routes will increase 36. Number of sidewalks increases 37. Number of blue-ways increases.

Recommendation: Integrated Transportation System with Multiple Linkages

Challenges to an integrated transportation system with multiple linkages	Strategies to Overcome Challenge
Planning, Policies and Funding Issues	
Knowing needs and demonstrating need for all types of transportation system Lack of funding and prioritization Continual maintenance of damaged roads	*Collaborate between agencies that provide resources*

Lack of alternate routes, should a road fail (people and supplies) Limited passenger rail options Policy doesn't always accommodate local needs (fed or local) Affordability and equity, balance available services across all communities	
Access to system; sidewalks and bike lanes. Need access to existing and expanded networks	*Implement a complete streets policy on the coast*
Education, Outreach and Communication	
Need to change how people think about the issue. Lack of understanding the value of the transportation system, this includes citizens.	*Demonstrate the benefit of alternative transportation to individual riders using multi-media communications strategies*
Resistance to integration of transportation system across the coast, including cities/counties. Resistance from elected in particular Communication & need to share information/updates on what is available	*Identify groups that are receptive and reach out to them.* *Establish a mechanism to continue engagement and conversation with public, stakeholders and elected officials.*
System Design	
Consistency and reliability of transportation system	*Identify barriers that prevent people from using transit.*
Stigma & having a car can be a status symbol	*Make alternative transit attractive. Have nodes that offer other services (coffee) and make wait areas attractive.*
Weather & people don't want to be outside in the heat/rain	*Improve site design to accommodate alternative modes of transportation*

Indicator of Success	Measurement
Stakeholders will be meeting to discuss needs and provide support for facility planning Elected officials will recognize the benefit of a multi-modal system	13. Number of stakeholder groups will increase 14. Number of meetings will increase 15. Number of participants will increase
Public support for alternative modes will be evident	16. Amount of funding invested in alternative modes will increase
Carpool/vanpool formation will be regionally accessible	17. Number carpool/transit locations will increase

Sidewalks and trails will be regionally accessible	18. Number of sidewalks and trails will increase
Children will be walking to school	19. Number of children walking to school will increase
New development will include pedestrian, biking and transit/vanpooling amenities and accessibility Transportation improvement projects will fund a regionally connected inter-modal system	20. Number of jurisdictions working with developers to encourage alternate modes will increase 21. Number of projects that plan and implement alternative modes will increase
Regional transit will include new services, improved schedules and new types of serve and vehicles	22. Investment in transit will increase across the coast.
Communities will be implementing a complete streets program	23. Number of communities with complete streets plan will increase
Benefits and barriers to alternative modes will be understood and addressed	24. Perception surveys will be implemented 25. Regional transportation plans will target reducing barriers.

Summary of Strategies

Two recommendations to achieving a resilient transportation/land use system were discussed in focus groups: Lead by Example and Practice What We Preach and, An Integrated Transportation System with Multiple Linkages.   The two groups referenced a problem that undermines the long-term resiliency of the transportation system—a lack of understanding of the true value of a regionally efficient, diversified transportation system that supports the economy, health and quality of life of the people, communities and businesses on the MS Gulf Coast. Transportation as a part of the infrastructure is seldom understood or embraced for its potential to provide opportunities and unique solutions that supports economic expansion and improves quality of life. The focus groups clearly saw the need to establish a collaborative framework to identify, educate and involve people in re-positioning transportation as an important investment in the future of the MS Gulf Coast.

The groups described that this collaboration is needed for planning, project development, funding and policy changes. The public, stakeholders and elected officials are key to develop and maintain a strong multi-modal system. Having the jurisdictions work with developers on planning new development is critical to connect with a regional transportation system through alternate travel modes. Partnerships among the public, private and non-governmental groups should work together to leverage funding, based on local planning and regional needs for mobility.

The strategies that were presented were pro-active to create the collaboration framework, identify and involve the public and stakeholders in reaching and influencing the business leaders and elected officials

on the need to provide employee transportation incentives and for cities to adopt a complete streets policy and commit funds for transportation improvements.

Potential Definitions of Resiliency in Transportation/Land Use

A resilient T/LU system is made strong by having a well-informed citizenry on the cost of transportation and creating partnerships to leverage investment into projects that support a regionally connected inter-modal system of transportation modes.

A resilient T/LU system has multiple modes of transportation designed to serve the diverse needs of the public for mobility, with regional connectivity to expand the service area across the three county MS Gulf Coast.

Work Session 5. The Water System in the *Plan for Opportunity*

The Water Subcommittee for the *Plan for Opportunity* focused on the relationship of the water system to the community and economy of the MS Gulf Coast. The subcommittee assessed the current system and reported the final recommendations were intended to achieve three goals for a sustainable water system:

5. Build a resilient economy
6. Provide equitable infrastructure
7. Conserve coastal environment

Define Resiliency in the Water System

During the joint work session the members of the Resiliency and Water subcommittees agreed that the goals for a sustainable water system were based on the concept of having a regional water resource system that was maintained to high standard of quality and provided adequate quantities to support the people and the economy of the Gulf Coast.   The water system was inclusive of all the water resources that support the activities on the coast, including drinking water and natural waterways, and manmade and natural storm and waste water systems.   Several terms and concepts of resilience were emphasized, that to be resilient there must be, as follows:

- Planning ahead to be prepared to recover
- Ability to move forward from an event
- Capacity to adapt to incremental changes, not just a single event
- Practice to enable the ability to respond

Threats to a Resilient Water System

The participants discussed the problems that threaten the quality and quantity of available water in the system.

Threats

21. *Natural climatic changes* that cause infiltration and erosion of manmade and natural water systems

22. *Inefficient water management systems* that have no redundancy of power to maintain circulation

23. *Policies and regulations* that are not enforced

24. *General public and local governments* that are unaware of the relationship of land and water management policies and practices to the quality and quantity of water/stormwater systems.

25. *Tourism community* that is unaware of the impact of poor water-based business practices

Causes that create or aggravate the threat to resilience

1. *Threat:*   Natural climatic changes that cause infiltration and erosion of manmade and natural water systems

Causes:
  a. *Storm surge that results in saltwater intrusion through abandoned wells*
  b. *Sea levels rise that erodes shorelines*

2. *Threat:*   Inefficient water management systems that have no redundancy of power to maintain circulation

   Causes:
   a. Central water treatment facilities may not be equipped to handle power outages, causing local water systems to fail.

3. *Threat:*   Policies and regulations that are not enforced

   Causes:
   a. Storm water policies that can maximize drainage and treatment are not fully understood or followed by public works departments

4. *Threat:*   Uninformed public and local governments of the relationship of land and water management policies and practices to the quality and quantity of water and stormwater systems.

   Causes:
   a. Local development allowed along shoreline that prevents natural filtering and is prone to erosion.
   b. Lack of understanding or interest in developing strong policies through ordinances for storm water management
   c. Lack of knowledge within jurisdictions of the connection between land use polices and code enforcement to the community rating system

5. *Threat:* The tourism community that is unaware of the impact of poor water-based business practices

   Cause:
   a. Water-based businesses are not required to accept responsibility for maintaining water quality, shoreline protection and aquatic and marine environments.

Resilient Water System in Twenty Years

The participants discussed the characteristics of a resilient water system in twenty years. This look forward was intended to refine the definition of resiliency specific to the water system, and to define strategies that may be implemented to achieve this resiliency. The participants wrote down their vision of a resilient water system which centered on maintaining good water quality and protecting water resources.

➢ Education
  • Encourage public ownership of water quality – leadership and education
  • Public educated on big picture

- Informed connection between drinking water, storm water, wastewater and natural systems
- Common core curriculum to include water resource management

- ➢ Collaboration
  - Two-way communication with tourism industry
  - Agencies are communicating
- ➢ Increased Stewardship
- ➢ Best Practices
  - Incorporate BMPs into water system management
    - o Some things already in the works
  - Mixed use areas utilize or enhance water resource management
  - Stormwater systems with low impact on natural resources
- ➢ Reliance on Energy
  - Less reliance on electricity
  - Less vulnerable to power failures
  - Secure and safe freshwater not as dependent on electricity
- ➢ Policy
  - o Water systems and resources receive as much political attention as economy
- ➢ Planning
  - o Regionalized planning is standard
  - o Infrastructure improvements prioritized in recovery funding – infrastructure planning
- ➢ Access
  - o Providing access to waterways

Focus on Recommendations to Achieving a Resilient Water System

The participants formed two groups to focus on two categories of recommendations for achieving a resilient water system: Increased Stewardship, and Developing a Low Impact Stormwater System. The recommendations were examined to identify the challenges or obstacles and the strategies or measures that could be taken to overcome the obstacles.

Recommendation: Increased Stewardship

Challenges	Strategies to Overcome Challenge
Not having or not enforcing ordinances to support best management practices for water resource management • Lack of buffers on river/streams • Few pervious surfaces Public Property:	Document tie of BMPs to CRS to encourage the adoption of local ordinances
• How is public property maintained? • BMPs not included in maintenance	Demonstrate the negative impact of poorly developed properties to the quality of the water management system

• Lack of education of public employees on environmentally sound resource management Private landowners: • Rights and attitudes of private property owners to develop/maintain their land as they desire • Balancing private ownerships rights with public interest of water quality	Demonstrate sound BMP such as golf course management
Lack of public understanding: • What are BMPs? • Why to implement BMPs? • How to implement BMPs? • How to appreciate/preserve the natural environment? • How to be a steward?	Draw public into planning process through access to natural settings that demonstrate BMPs and encourage protection through public support and buy-in Develop a curriculum to educate on BMPs and how the public can endorse and support BMPs on private property and in public maintenance; instructive, innovative and teach leadership to youth. Use web-based applications to link with national resources and illustrations of BMPs

Measures of Success

The strategies implemented will need to monitored and measured over time to assess if they are being successful in achieving the goal of a specific recommendation. The group discussed and identified indicators that are measurable. The following table lists the indicators for measuring the success of creating stewards of water resource management and secondly, of establishing stormwater systems with low impact on the natural system.

Indicator of Success	Measurement
Increased Stewardship:	
"Stream Protectors" will be the norm	38. Program to identify and recognize stewards of the water system will be established
Beaches and waterways will be environmentally stable, clean and active with residents and tourists	39. Number of beach closings will decline 40. Tonnage at Coastal Cleanup will decline 41. Number of trees removed along waterways will decline
Land developments will incorporate BMP	42. Number of trees removed for development will decline 43. Number of green subdivisions will increase 44. Acreage of pervious parking lots will increase

	45. The number of developments that work with natural landscape will increase
Cities and counties endorse BMPs	46. The CRS fire rating will improve
	47. Comprehensive plans will include BMP and green subdivisions in future land and water management

Recommendation: Stormwater system with low impact on natural system

Challenges	Strategies to Overcome Challenge
Lack of funding for development Low political and public will to undertake the initiative	Identify funding sources for SW alternatives Demonstrate the long term benefits and savings and investment opportunities in solid SW management alternatives
Lack of information within the public and the city departments on how the existing system functions and what the issues are within the existing system: cause and environmental impacts Erroneous public perception of how the system functions; that it has ability to perform as a protection mechanism and not built for high rain/storm events.	Demonstrate the evidence and impact of impervious surfaces, litter and debris deposits to the reduction of water velocity and increase in pollution levels in quality testing
Insufficient capacity/direction within city/county departments to undertake new SW management	Initiate educational series to inform and guide discussion and direction on SW management policies and practices
Limited ability to retrofit existing system	Identify funding sources for retrofit programs

Indicator of Success	Measurement
Stormwater system with low impact on natural system:	
Water resource management funding will be in place	26. Capital improvement programs will include passive SW management projects
Water quality will improve	27. Testing will report quality compliance
Flood events will have less impact	28. Testing will report fewer event loads in the system
	29. Number of work orders related to flood events will decrease

Public perception of water quality for recreation will improve	30. Survey results will report perception has improved
Tourism will capitalize on water recreation	31. Number of beach closings will decrease
Passive systems will be in place	32. Regional analysis will report increase number of passive systems
Public expect BMPS in water management Public works become proactive	33. Number of jurisdictions adopting BMP as policies will increase
Private landowners become stewards of water resource management	34. Number of buffers on private lands will increase 35. Shoreline erosion will decrease

Summary of Strategies

Two recommendations to achieving a resilient water system were discussed in focus groups: establishing low impact stormwater management systems and creating steward of water resource management. The discussion of the groups presented the concern that the general population has little understanding of how the water system is managed and they fail to connect how personal activities can negatively impact the water management system. The consensus was there was a need for greater understanding among the cities and counties of the importance of adopting best management practices and providing training on implementation and enforcement.

The strategies that were presented were intended to create a learning environment for the public agencies and general public on the benefits and techniques of developing and maintaining a resilient water resource system that functions at greater efficiencies and provide clean water supplies.

Potential Definitions of Resiliency in Water

- A resilient water system has the quality and quantity of waters to support the regional economy and growth patterns that follow best management practices in water resource management
- A system that is maintained to high standards of quality by implementation of best management practices and land use policies that protect the resource and prepare the system to respond effectively to changes.
- A system that is maintained by implementation of best management practices and the cooperation of an informed public to protect and preserve the system from the impacts of development and climatic changes