**Committee 9: Economic Growth

INTRODUCTION**

The Barataria-Terrebonne National Estuary Program (BTNEP) has always been unique amongst the National Estuary community nation-wide not just for the incredibly wide diversity of the living and natural resources, habitat types and distinct cultures and foodways of the Estuary, but for the economic opportunities inherent in this region.

Since the first settlement of the Barataria and Terrebonne Estuary System (BTES) by the Native American tribes who called this area home, human endeavors in this region have been focused on not just the beauty, but the bounty of this Estuary. Native American tribes found a natural pantry overflowing with foods of all types: fin, feathers, and fur as well as a landscape which offered up building materials such as clay-rich soils, Spanish Moss and Palmettos perfect for constructing shelter from the harsh elements. They found rich soils constantly being deposited by the Mississippi and Atchafalaya Rivers and Bayou Lafourche suitable for growing food crops as well as medicinal plants, and they found these same waterways so interconnected as to provide a level of mobility facilitating trade that few other tribes in the United States were able to enjoy.

Using the web of waterways as a highway system to trade their harvest of the land and waterways with neighboring peoples, these first residents of the Estuary were the first people to understand that this estuary is so bountiful that it is possible not merely to survive, but to thrive and to harness these plentiful resources to their economic advantage, not merely survival. They would not be the last people to learn this lesson.

The first European settlers, too, found the Barataria and Terrebonne Estuaries an overflowing larder, and like the Native Americans, soon realized that they would not merely survive in this place. They could thrive. They could trade utilizing the natural waterways and eventually adding canals to enhance the economic value of the system of waterways connecting people and trade throughout the BTES. And so, from the very earliest times of settlement, human energy in the Barataria and Terrebonne estuaries has gone towards harnessing the power and bounty of the natural resources for the purpose of economic development.

As the first European explorers and traders were replaced with subsequent generations of displaced Acadians, Spanish, French, German, Irish, Anglo, Isleno, Chinese, Vietnamese and other migrants their energies also focused on how not merely to survive here, but to live well. These waves of migrants brought their respective experiences and skill sets to bear on the landscape, drawing from the rich soils and teeming waterways the bounty that a Nation has come to rely upon.

Today, their descendants are responsible for approximately 1 in every 5 barrels of oil in produced in the U.S., 37% of the nation’s sugar production, and one third of all fisheries landings in the coterminous US.

In addition to this rich natural heritage, the foodways and cultures of the region are symbiotically linked to the natural resources in ways seldom found in the developed world. Quite simply, our residents live closer to the land and water in all aspects of their culture than most other regions and peoples in the developed world. This closeness to the natural resources drives a spirit of sustainability in economic development opportunities not often seen elsewhere.

In this section of the CCMP, you will encounter case studies of businesses, individuals, public authorities, and others who are working to harness the bounty and the power of the natural resources of the Estuary for commercial gain for economic and community development. These case studies range from oil and gas infrastructure development, place-based tourism and eco-tourism operations and opportunities, as well as next-generation investments in water resources management and the services sector.

Each of these case studies will illustrate the progression of economic growth that we have experienced here in the BTES, which can by and large be distilled to a continuum/cycle which looks like:

**ReSTRUCTURING OF CONTENT**

The original CCMP included nine distinct action items for economic growth, but committee members believe a more concise structure is warranted and that regardless of the examples of offered up, economic opportunities all follow a basic pattern. From port development to value-added seafood and all points in between, the action items under this section of the CCMP can be classified within one or more of the following categories: 1) Education, 2) Technology and Development; 3) Business Assistance; and 4) Marketing. A brief description of each of these new action items is provided below, along with a listing of the associated objectives identified by the committee.

**EG-1 Economic Education**

This initial phase of development is typified by the process of learning about the resources available in the BTES, or the opportunities to solve a problem and beginning to conceptualize ways to harness the resources available to fill a gap in the marketplace. This process of education is both foundational and continual and not a one-off effort. Education continues to refine solutions and improve efficiency, quality, and drive innovation throughout the entire cycle.

***Objectives***

1. To educate business leaders, elected officials, university officials, and the general public about the economic value and the potential of BTNEP as a future economic engine for southern Louisiana with relationship to sustainable development.
2. To become a thought leader for the impact of regulations and how they affect both the economic and ecologic environments of BTNEP.
3. To drive economic diversification and stability through the appropriate use of natural resources found in the estuary, Including:
4. extracting higher value products from existing resources through the use of research and development.
5. demonstrating and supporting eco-tourism ventures and related support systems and services to enable entrepreneurs to find wetland based recreational and tourism “adventures” that will support environmentally friendly business.
6. To explore opportunities to create new courses, programs, certifications, and degree programs in conjunction with higher education and business leaders related to ecological economics.

**EG-2 Technology (R&D) and Market Development**

This next natural step in the progression builds upon the knowledge gained during the **Education** phase and begins to translate that knowledge to action. This phase includes the development of products/solutions and the testing of assumptions about not only the product, but the marketplace as well as the resources. This phase relies heavily on constant education in order to drive refinement to improve the product/solution. However, often without assistance to make these necessary improvements, many opportunities would not make it beyond the “really great idea phase”.
***Objectives***

1. To drive R&D in key sectors. These may include the following list, but have the potential to change over time as new opportunities and new technologies are developed;
	1. Nature-based tourism
	2. Coastal restoration
	3. Nutria market development
	4. Sustainable fisheries
	5. Sustainable farming practices
2. To create value-added products in conjunction with higher education and business partners.
3. To promote technology transfer of ecologically appropriate processes that are developed.
4. To understand best practices of ecological entrepreneurship, both in the US and globally.

**EG-3 Business Assistance**

Without assistance from entities like BTNEP, South Louisiana Economic Council (SLEC), Terrebonne Economic Development Authority (TEDA) and the Small Business Development Center (SBDC) and others, great ideas, new technologies and solutions to problems may never make it to the marketplace. These entities are critical to assisting innovators and economic developers to navigate the often complex and winding path from idea to market. This assistance is not purely financial. It includes essential training, mentoring, coaching, networking support, business incubator/office space, grants, loans and other methods to support, scaffold, and assist in the launching of new business opportunities. Once this support system is in place, and these products/solutions are refined, tested, and put in to the marketplace, marketing is essential to the ultimate success of the product/solution.

***Objectives***

1. To identify, catalog, and promote access to financial tools to environmentally friendly businesses in the key sectors that could assist in business formation and growth contributing to environmental sustainability. (Examples: America’s Small Business Development Center, South Central Planning & Development’s revolving loan programs, etc)
2. To identify, catalog, and promote federal, state, and local incentive programs to businesses in key sectors that could assist in business formation and growth that decrease negative impacts in the seven priority problem areas.
3. To identify, catalog, and promote federal, state, and local grant programs that could assist environmentally friendly businesses, non-profits, or public institutions in developing programmatic activities related wetland resources and the key sectors. (Examples: US Dept of Commerce, Economic Development Administration, Delta Regional Authority, etc)
4. To operate as a conduit linking businesses in key sectors with other resources in the area, including other businesses, small business support, economic development professionals, access to researchers in Louisiana universities.
5. To identify and promote solutions for any financial or regulatory gaps that are consistently faced by businesses in the key sectors.

**EG-4 Marketing Sustainable Products and Practices**

Not only is marketing the refined product essential to the product’s success, but it also helps to re-start the cycle by inspiring other solutions. If imitation is the most sincere form of flattery, then innovation is the most sincere form of approval. Good products/solutions marketed well will inspire other innovators to attempt to solve the same or similar problems more efficiently, or look at the same resources in new and different ways, fostering a series of spin-off ideas and re-starting the cycle of education, technology and market development, business assistance, and marketing to the advantage of the BTES and its people.

***Objectives***

1. To explore opportunities to create a new brand or maximize the existing brand throughout Southeast Louisiana.
2. To create place-based marketing programs that will reinforce the positive messages about quality of life and economic opportunities in the BTNEP region.
3. To serve as a connector and promoter of BTNEP related businesses through the support or creation of an exposition that focuses on business, technology, and academic research related to estuaries.

**Case examples**

In the following section we provide specific examples for economic growth that have been identified by the subcommittee. These examples are formatted in a consistent manner in which the target project/program is briefly described, followed by details of specific objectives, partnering agencies, timelines, and performance measures.

**1. Place-Based Benefits of the Barataria-Terrebonne Estuary System
(EG1, EG4)**

A strong sense of place and a value of the unique beauty and bounty of the natural resources of the Barataria and Terrebonne estuaries has always been essential to the residents of the BTES. This love of the place and its natural resources is infectious. From the very beginning of human settlement, survival and prosperity have been rooted in the bounty and the beauty of the estuary, and Native Americans passed their traditional knowledge of the resource to European and other settlers, who in turn shared their experiences with wider audiences. From John James Audubon’s illustrations of the unique birds and landscapes of the region to “Hollywood South’s” film and TV industry boom, the beauty of this region’s environment and landscape have been marketed to global audiences for over 200 years. As an increasing societal value is placed on travel, tourism, and experiential tourism the value of the BTES as a tourism resource has and will continue to increase.

 **1a. Objectives**

The objectives are to work collaboratively with regional tourism and economic development entities to assist tourism operators and entrepreneurs to:

1. Recognize, understand, and value the rich natural and cultural resources of the BTES.
2. Enhance the quality and the quantity of nature-based and cultural experiential tourism opportunities and operations in the BTES.
3. Support the development and operation of new and existing tourism activities through traditional economic development techniques/education.

**1b. Description**

BTNEP is an ideal lead agency to help drive this action plan in that BTNEP is designed to educate and communicate the inherent value of the living, natural and cultural resources of the BTES. In this way, BTNEP will…..

**1c. Location**

Throughout the BTES

**1d. Lead Agency Responsible for Implementation**

This effort will require the collaboration of many different agencies and entities to implement the objectives listed above. This group includes, but is not limited to: BTNEP, the Lafourche Convention and Visitors Bureau, the Louisiana Department of Culture, Recreation and Tourism, the Louisiana Travel Promotion Association and its members in the BTES, South Louisiana Economic Council, Terrebonne Economic Development Authority, South Central Planning and Development Commission, and others.

**1e. Timelines and/or Milestones**

While the growth of place-based tourism and lifestyle is a long-term trend, it is envisioned that the objectives listed above are a constant process of improvements, starting with a 12 month period of initial stakeholder engagement following the adoption of this CCMP document, and incorporating a 2 year cycle of initiatives to support the objectives listed above.

**1f. Possible Range of Cost and Sources of Funding**Costs for the objectives listed above can vary, depending on multiple factors, however, it is safe to say that costs to BTNEP can be limited to staff travel and time if needed. These costs could be increased to include a focus of a mini grant program, or could be entirely born by the travel and tourism entities whose funding is designed to fund these types of objectives. As a point of reference, it is important to note that in Lafourche Parish alone, the amount of promotional and tourism development funds allocated by BP following the Deepwater Horizon was $2 million, and included a heavy focus in major media buys nationwide.

**1g.** **Performance Measures**
***Possible Data Gathered***

Preservation copies of digital materials will be held by project on hard drives and then provided to the Nicholls State University Archives.

***Monitoring***

Metrics will include an annual accounting of the number of program supported presentations, events, venues, and attendees.

**i. Parties Responsible:** BTNEP and collaborative team.

**ii. Timetable for Gathering Data:** Pre- and post-surveys and Annual Reports.

**iii.** **How Data is Shared:** Via presentations, conversations, online, archives, eventually through proposed public library kiosks.

**iv.** **Possible Data Gaps:**  Individuals and segments of the community not reached.

**v**. **If Additional Funding Is Needed:** First funding request has been submitted. Other possible sources are being identified and possible applications/proposals submitted, as seems appropriate.

**2. Scientific Literacy on Water
(EG1, EG2)**

Water is at the heart of life and work in the Barataria-Terrebonne Estuary. This area suffers some of the Gulf Coast’s highest rates of coastal erosion and land loss and was ground-zero for the 2010 BP oil spill, subsequent staging of cleanup and now ongoing study of possible ecological and health impacts. The region also faces multiple chronic environmental challenges--coastal erosion, land loss, saltwater intrusion, and high total maximum daily loads (TMDLs)--as well as acute risks from natural and human-caused disasters. Recurrent severe weather events, like Hurricanes Katrina and Rita, Gustav and Ike, Isaac, and March and August 2016 flooding create “teachable moments” for raising regional awareness and scientific literacy on issues of water supply, quality, flood-risk and sea-level rise to help advance community sustainability and resilience.

**2a. Objectives**

The objective is to support development and implementation of enhanced public outreach, based in use of accessible language, interactive dialogue, and respect for local water knowledge and culture. The purpose is to help empower regional public officials, stakeholders and regular citizens with knowledge that structural solutions are often prohibitively expensive and can never be 100% fail-safe and that sustainable and resilient communities need more nuanced and flexible understanding of what it takes to live with water.

BTNEP is well positioned to assume a leading role in advancing this objective. From its inception, the estuary program has been a model of interdisciplinary, cross-sectoral, collaboration spanning scientific disciplines, regional industry, government and community stakeholders. The public outreach process will also help highlight the importance and value of BTNEP as a future economic engine for regional sustainable development.

The concept “scientific literacy” refers to a reasonable level of understanding and competence. The people of the BTNEP region already know a lot about water and show strong support for environmental concerns. Like other environmental issues, water has the advantage of being readily accessible. However, while water here seems ever present and abundant, the complexity of issues, multiple variables outside controlled laboratory conditions, and diverse voices of scientists, industry, and environmental groups, often make grasping cause and effect and arriving at actionable consensus difficult.

An excellent starting point will be explicitly acknowledging that both lay and scientific/technical communities possess potentially complementary expertise for confronting regional risks and opportunities. In effective communication, information cannot flow in only one direction, with scientists/technical experts talking and non-technical people listening. This is known as the “Deficit Model,” since it focuses on what people don’t know. In contrast, the “Dialogue Model” emphasizes what people do know and promotes active listening on both sides, thoughtful responses to community questions and concerns, and mutual respect. Research has highlighted the importance of scientists and technical experts speaking in understandable language and using tools like storytelling and metaphor to convey knowledge useful to non-technical audiences within community context and experience. Encouraging both lay community and scientific/technical experts to step out of familiar comfort zones helps level the field and can produce results well worth the effort. Research also recognizes that informed public participation helps improve the quality and legitimacy of environmental decisions, and thus produces better results.

 **2b. Description

Models for Enhancing Scientific Literacy**

BTNEP is part of a collaborative team exploring a variety of approaches for enhancing regional scientific literacy. This process raises some significant questions. What audiences will be addressed? What knowledge will be offered at what venues? Existing initiatives, such as the Louisiana Water Economy Network (LAWEN) and a non-technical session at the Coalition to Restore Coastal Louisiana (CRCL) 2016 State of the Coast conference have shown the way and had success in reaching non-technical regional government and industry stakeholders. While there is still work to be done in raising scientific awareness among those audiences, BTNEP recognizes a gap in outreach to regular, non-technical, citizens.

Another key question is the level of public participation anticipated or hoped for. The International Association for Public Participation (IAP2) has developed a participation spectrum, ranging from Informing through Consulting, then Involving, Collaborating and Empowering, with each allowing for an increasing level of public impact. DEMOS, a UK think tank, has suggested that discussions with the public should take place before any new scientific developments or technologies become reality. While that degree of participation seems unlikely, it is widely accepted that some degree of participation by those likely to be effected by major decisions is desirable. Experience with processes like Louisiana Speaks, which gathered public input on recovery after Hurricane Katrina, demonstrated that regular people, when given appropriate information in usable form, will take ownership of outcomes and stay involved.

 There are also questions regarding what kinds of information participants would likely find most useful. Options range from the specific, such as local scientific/technical issues regarding water, to the general, such as describing the trial-and-error process of scientific method, how science is done in practice, and levels of uncertainty and probability. A combination of the two seems likely to be most useful. All potential topics would benefit from evaluation in a “Message Box” process (Baron, 2010), which asks for succinct, “elevator speech”, statements on the Issue; the Problem; Why it Matters; the Solution; the Benefit to the region, to the community, and society in general.

Regarding venues, the easiest to arrange may be on university campuses. However, such settings may prove intimidating for non-technical citizens. Groups like LAWEN have used public libraries. Some format models recommend using informal venues like restaurants or bars, where people might feel more comfortable just taking part in a conversation.

 Public outreach researchers and practitioners have developed an array of outreach models. Presentation formats might include a mix of elements from two or more.

1. **TED-Talk like model**—shown to have the capacity to convey complex information in short presentations by well-prepared speakers, using engaging and accessible language, storytelling, and limited use of visuals.
2. **Café Scientifique**, first developed in France, later adapted in the United Kingdom: This format also involves a short presentation by an expert, but is more interactive, with the presentation providing a basis for discussion. Lay audience and culture and experts with special knowledge are treated as equals. Emphasis is on being both informative and enjoyable, with sufficient time allowed to clarify complex ideas. The format encourages human connections through questioning of experts about motives (for participating, entering their field, choice of research topics), funding, scientific method, etc.
3. **Demonstration Lectures**: apparatus must be portable, leave no harmful residue, can be set up within an hour and disassembled again as quickly as possible. This format can create opportunities for audience participation. The fact that some demonstrations may not work or may only partially work can create opportunities for discussing the trial and error of how science is done in actual practice.
4. **Book Clubs** may discuss non-fiction books on water topics or novels with water science themes.
5. **Scenario Workshops**, based on asking “what if” questions.
6. **Dialogue**-focused approaches use established methods for discussing controversial topics with guidelines for maintaining civility.
7. **Eco-Tourism**, with local people acting as visitors and/or guides to regional features.

Equally balanced dialogue is probably not achievable, since scientists and technical people will invariably know more about their subjects and disciplines. However, all outreach models and use of common language have potential to create shared learning space as a platform for building mutual trust and understanding, legitimacy, and credibility.

Enhanced scientific literacy also has potential to help drive economic diversification and greater stability based on identifying possible appropriate use of natural resources found in the estuary and promoting research and development to create higher value-added products based on regional resources. Referrals to technical assistance will help raise community-level water knowledge and awareness of business and workforce opportunities to smooth out impacts in energy industry “boom and bust” cycles.

Use of pre- and post-surveys of participant perceptions of the experience, scientific knowledge and perceived capacity to actively participate could help guide improvements for more effective communication, which may also be transferrable to other outreach efforts.

**2c. Location**

As appropriate, BTNEP will collaborate in organizing presentations within the region. Presentations will be digitally recorded, posted to YouTube, and used to spark community and online conversations on water. Digital recordings could eventually become part of content for proposed water-knowledge kiosks at regional public libraries. Results of pre- and post-surveys will guide refining of formats and shared language for maximum effectiveness in raising scientific literacy and self-perceived capacity to actively participate in public discourse on water.

**2d. Lead Agency Responsible for Implementation**

BTNEP will take the lead in networking to implement scientific literacy programs and is also part of a collaborative effort that builds on existing water management networks around the New Orleans based Louisiana Water Economy Network (LAWEN), which also convenes meetings in Baton Rouge and Lafayette. Other partners are Research Park Corporation/NexusLA and Good Work Network, which promote technology and ecosystem development and entrepreneurship.

**2e. Timelines and/or Milestones**The scientific literacy initiative will have an approximately two-year timeline for selecting and training speakers to deliver presentations, digital recording of presentations, and organizing conversations around digital recordings.

**2f. Possible range of cost and Sources of Funding**The collaborative team has submitted an application to the Gulf Capacity Building program of the National Academies of Sciences, Engineering and Medicine. The proposal involved development of the TED-Talk like format and use of accessible language. The funding request was slightly under $250,000. If awarded, the grant period would be two years.

Project team is identifying other possible funding sources and will utilize information developed for the Gulf Capacity grant application to request funding for the same and other possible formats and models. Funding requests will again be in the $250,000 range.

**2.g Performance Measures**

***Possible Data Gathered***

Preservation copies of digital recordings will be held by project on hard drives and then provided to the Nicholls State University Archives. The NSU Archives do not have the facilities to serve as repository for the survey data and make it available to researchers, but will advise project team on identifying a repository with the appropriate facilities to make the survey data available to researchers.

***Monitoring***

Metrics will include the number of presentation events, venues, and attendees, as well as online views. Project will also analyze pre- and post-survey data to identify patterns indicating growth in knowledge and shifts in attitudes on capacity to participate.

1. **Parties Responsible:** BTNEP and collaborative team.

**ii. Timetable for Gathering Data:** Pre- and post-surveys and Annual Reports.

**iii.** **How Data is Shared:** Via presentations, conversations, online, archives, eventually through proposed public library kiosks.

**iv.** **Possible Data Gaps:**  Individuals and segments of the community not reached.

**v**. **If Additional Funding Is Needed:** First funding request has been submitted. Other possible sources are being identified and possible applications/proposals submitted, as seems appropriate.

**3. Seafood Promotion, Technology, and Marketing
(EG1, EG2, EG4)**

Louisiana’s seafood harvesting sector has been in decline for more than two decades, due primarily to price stagnation caused by an influx of imported seafood (Asche et al. 2012; Josupeit 2004; Bene et al. 2000). This competitive pressure has been compounded by rising input costs and a succession of natural and man-made disasters. Together, such factors have led to a 56 percent decline in commercial fisherman license sales in the last 25 years, with more than half of this reduction occurring in the past decade alone (LDWF 2016). The number of seafood dealers and processors in Louisiana has also been in decline, as the globalization of fisheries commodity markets has led to downsizing, consolidation, and closure of more than half of the firms in this sector.

As a result of these external forces, remnant seafood firms operating in the Barataria-Terrebonne Estuarine System (BTES) have been forced to embrace alternative business models for commercial harvesting and processing. New industry realities require that fishermen, dock owners and processors are equipped to understand business trends and strategies, technologies, and policies required to survive in an increasingly competitive industry. For these firms, remaining competitive in a global market requires being efficient as possible and maximizing revenues received for seafood products.

**3a. Objectives**

Education, technology transfer, and new market development are critical factors for the economic survival of seafood harvesting and processing firms operating in the BTES region. The management conference will support development and implementation of enhanced public outreach initiatives and partnership opportunities to inform and promote new handling and processing technologies, value-added products, and innovative practices and byproduct uses that maximize the quality and profitability of seafood resources in the BTES region.

**3b. Description**

BTNEP management conference members are already engaged in various seafood promotion and value-added initiatives. Some specific Examples include:

**Direct Marketing** – Dockside sales of BTES seafood is a small-scale, but effective way for harvesters to capture a greater profit margin for their locally caught fishery products. Once common in the estuary, the practice fell out of fashion in recent decades as U.S. domestic seafood sources were assimilated into a globalized, commodity market. Management conference partners such as the agents and specialists of the Louisiana Cooperative Extension Service (LCES) are working with vessel captains to teach improved product handling and marketing techniques to ensure higher quality seafood is available via direct sales to consumers. Examples of this effort in the BTES include LaTerre Direct Seafood ([www.laterdirectseafood.com](http://www.laterdirectseafood.com)), a regional expansion of the Louisiana Direct Seafood marketing effort launched in 2012 by management conference partners in the LSU AgCenter (<http://louisianadirectseafood.com>).

**Place-Based Promotion** – The Louisiana Seafood Certification Program is a marketing initiative of the Louisiana Seafood Promotion Board (LSPMB) and the Louisiana Department of Wildlife of Fisheries (LDWF). The intent of the program is to establish a unified, widely recognized brand that will introduce new consumers and buyers to Louisiana Seafood. As members of the BTNEP management conference, these agencies are uniquely positioned to provide guidance on place-based product promotion and development. Examples of this work include promotion the *Certified Wild Louisiana Seafood* campaign (<http://certified.louisianaseafood.com>) and efforts promote the ecological origin of the region’s seafood ([www.louisianaseafood.com/ecology](http://www.louisianaseafood.com/ecology))**.**

**Micro-processing** - Small batch processing of finfish and shellfish products has emerged in recent years as an economic opportunity for entrepreneurs. Analogous to the growth of micro-breweries, these businesses process for high-end supermarkets and restaurants that are increasingly demanding authentic, locally sourced seafood products in alternative forms of packaging and preparation. As a member of the BTNEP management conference, the Louisiana Department of Health and Hospitals provides guidance to this growing sector and regulates the sanitation and permitting of individual businesses.

**Value-added** **quality** - Historically, value-added applications in seafood have translated only to heavily processed product forms (e.g. pre-portioned, pre-breaded, and pre-cooked). More recently; however, value-added approaches have shifted towards a growing consumer demand for high quality, locally sourced products with an emphasis on freshness and chemical free processing. Louisiana Sea Grant and the LSU AgCenter, both BTNEP management conference partners, aids start-up companies and products via technology transfer, product development and food business incubator services, nutritional analysis of value-added recipes and ingredients, and expertise on market development.

**Workshop and conference support** – Through its partner members and directed funding, BTNEP will continue to support the development and presentation of promotional campaigns and value-added training opportunities via conferences, workshops, and invited presentations.

**3c. Location**

Training and outreach opportunities will held at various locations in the estuary depending on specific needs for education, technology transfer, or market development with seafood harvesters and processors.

**3d. Lead Agency Responsible for Implementation**

BTNEP will collaborate as needed with extension agents, subject matter experts (faculty and staff) of public and private institutions such as the Louisiana cooperative extension Service, the Louisiana Sea Grant College program, the LSU AgCenter, the Department of Wildlife and Fisheries, the Louisiana Seafood Promotion and Marketing Board, and commodity and trade organizations representing the harvesters, dealers, processors, and retails of commercial finfish and shellfish species.

**3e. Timelines and/or Milestones**

Best management practices for enhanced quality harvesting and value added processing will be an ongoing focus of the program over the coming 5 years. The primary mechanisms for achieving these goals will be through partner-member initiatives of the BTNEP management conference, guest speakers presentations at quarterly meetings, and targeted support and sponsorship of ongoing workshops, conferences and curricula.

 **3f. Possible Range of Cost and Sources of Funding**

State and federal sources of expertise and project funding include the LDWF, LDHH, NOAA, LCES, LSU AgCenter, Louisiana Sea Grant, and the Gulf State Marine Fisheries Commission. Collectively, these institutions expend ~ $1.5-$2 million annually towards seafood product development and marketing campaigns in Louisiana.

 **3g. Performance Measures**

*Possible Data Gathered*

Presentations and curricula developed with full or partial support from BTNEP will be archived at the BTNEP office at Nichols State University (NSU).

***Monitoring***

Metrics will include an annual accounting of the number of program supported presentations, events, venues, and attendees.

1. **Parties Responsible:** BTNEP and collaborative partners and management conference members.

**ii. Timetable for Gathering Data:** Annual Reports.

**iii.** **How Data is Shared:** Via presentations, conversations, online, archives, eventually through proposed public library kiosks.

**iv.** **Possible Data Gaps:**  Individuals and segments of the community not reached.

**v**. **If Additional Funding Is Needed:** A reevaluation of this action item will occur in year 5 to determine additional funding resources are required.

**4. Development at Port Fourchon
(EG2, EG3)**

Intro narrative

**4a. Objectives**

**4b. Description**

**4c. Location**

**4d. Lead Agency Responsible for Implementation**

**4e. Timelines and/or Milestones**

**4f. Possible Range of Cost and Sources of Funding**

**4g. Performance Measures**

*Possible Data Gathered*

*Monitoring*

1. **Parties Responsible:**

**ii. Timetable for Gathering Data:**

**iii.** **How Data is Shared:**

**iv.** **Possible Data Gaps:**

**v**. **If Additional Funding Is Needed:**

**5. Climate Change as an Economic Driver
(EG1, EG2, EG4)**

The economy of the BTES is situated within a low elevation landscape that is increasingly vulnerable to coastal inundation, subsidence, and erosion. These processes are compounded by chronic and acute forcing (geologic and meteorological) that is exacerbated by a changing climate. Approximately 2,000 square miles of wetlands have been converted to open water in coastal Louisiana since the 1930s - with the largest portion of this loss occurring within the boundaries of the BTES. It’s a region with one of the highest documented rates of relative sea-level rise in the world. The southernmost portion of the estuary (Grand Isle) recorded an average annual increase of 9.34 mm per year in mean sea level from 1947-2006 (NOAA 2016). More than any other single factor, coastal subsidence and its contribution to relative sea level rise has, and will continue to affect patterns of land use, resource access, and commercial development in the region. The coastal communities of the BTES must continue being advised and planning for the realities of a changing climate and landscape. Their response to this challenge will have substantial implications for their economic security, physical protection, and cultural identity.

**5a. Objectives**

The BTNEP will continue to help individuals, businesses, and communities plan for and adapt to projected climate changes, by:

1. Supporting and sharing the latest assessments coastal landscape change and climate-based projections.
2. Promoting awareness and understanding of adaptive restoration and protection options and the capacity of these strategies to mitigate changing conditions.
3. Developing information and tools to aid residents and businesses in economic decision-making related to development, settlement, and risk mitigation.
4. Promoting the BTES region as a global leader in the development of coastal restoration technologies and community adaptation approaches for dealing with climate change.

**5b. Description**

BTNEP management conference members are already engaged in various climate-related programs and projects. Specific examples include:

1. Outreach presentations at management conference meetings that provide detailed status and projections for coastal land-loss.
2. Dissemination of coastal mapping and visualization tools for improving public understanding inundation levels from storm surge and long-term climate change
3. Active participation on task forces, advisory committees that address coastal restoration and mitigation of climate-related risk
4. Participation in conferences and workshops that identify and promote the economic opportunities and constraints presented by these landscape challenges and the unique contributions of BTES in coastal restoration and climate change mitigation options.

**5c. Location**

Training and outreach opportunities will held at various locations in the estuary depending on specific needs for education, technology transfer, or program development with specific audiences (residents, businesses, commercial sectors, state and federal government agencies).

**5d. Lead Agency Responsible for Implementation**

BTNEP will collaborate as needed with subject matter experts of public and private universities, federal agencies such as EPA, NOAA and USGS; state agencies such as Louisiana Coastal Protection and Restoration Authority (CPRA) and the Louisiana Sea Grant College program, as well as scientists, engineers, and planners from the private sector.

**5e. Timelines and/or Milestones**

Climate-based programming will be a regularly featured topic on the agenda of BTNEP management conference meetings over the coming 5 years. To the extent possible, the program will sponsor/support demonstration projects, ongoing workshops, conferences and climate-based curricula that focuses on economic alternatives for residents and businesses.

**5f. Possible Range of Cost and Sources of Funding**

State and federal sources of expertise and project funding include EPA, NOAA, CPRA, and Louisiana Sea Grant.

**5g. Performance Measures**

***Possible Data Gathered***

Presentations and curricula developed with full or partial support from BTNEP will be archived at the BTNEP office at Nichols State University (NSU).

***Monitoring***

Metrics will include an annual accounting of the number of climate-related programs supported (e.g. presentations, workshops, conferences), a description of the target audience, and an estimate of the number of attendees.

1. **Parties Responsible:** BTNEP and collaborative partners and management conference members.

**ii. Timetable for Gathering Data:** Annual Reports.

**iii.** **How Data is Shared:** Via presentations, conversations, online, archives, eventually through proposed public library kiosks.

**iv.** **Possible Data Gaps:**  Individuals and segments of the community not reached.

**v**. **If Additional Funding Is Needed:** A reevaluation of this action item will occur in year 5 to determine additional funding resources are required.

**6. Business Financial Assistance
(EG1, EG2, EG3 & EG4)**

Economics and the environmental considerations are often thought of as being polar opposites. The relationship between the estuary and the economy requires, however, that citizens and community leaders balance the use and protection of the bountiful natural resources. Resources are available to entrepreneurs to build and grow small to medium businesses. Nature based business is often considered a bit more risky and often not funded by national, state or even local banks. The South Central Planning & Development Commission (SCPDC) has low interest funding available and has identify eco-tourism and nature based business as a target for the diversification and growth of our economy.

**6a. Objectives**

1. Educate business leaders, elected officials, university officials and the general public about the economic value and potential of BTNEP as a future economic engine for Southern Louisiana with relationship to sustainable development.
2. Drive economic diversification and stability through the appropriate use of natural resources found in the estuary.
3. Identify, catalog, and promote access to financial tools to environmentally friendly businesses; incentive programs that could assist in business formation and growth; and grant program development to assist in programmatic activities related to wetland resources.
4. Operate as a conduit linking businesses with resources.
5. Identify and promote solutions for any financial and regulatory gaps faced by business
6. Create place-based marketing programs that will reinforce the positive messages about quality of life and economic opportunities in the BTNEP region.

**6b. Description**

1. Economic Development Planning includes multiple opportunities to include BTNEP’s unique balance and partnership between Economic Opportunities, Environmental Awareness and proper use of Natural Resources. South Central Planning & Development Commission with the participation of local government can/will continue to include and encourage eco-tourism opportunities, value added measures to compliment existing resource use and acknowledge continued consideration of the protection of the estuary as we utilize our natural resource. (Planning Documents include SCPDC’s Comprehensive Economic Development Strategies, Delta Regional Authority’s 5 Year Stategies, etc).
2. Encourage Environmental Awareness in Federal, State and Local economic development trainings for newly elected officials and through Chambers and other forums opportunities where businesses form, grow, bring in new staff.
3. Link or develop financial and business assistance guides with BTNEP’s web and communication network.
4. Push incentives and grant opportunity information as it is discovered to BTNEP’s web and communication network to encourage environmentally friendly programs and business opportunities.
5. Support and assist entrepreneurs who express interest in eco-friendly business ventures.
6. As Quality of Place grows as a key component in site selection and workforce recruitment, highlight and include the unique value and availability of estuary resources for work and for play.

**6c. Location**

Opportunities are endless for BTNEP based businesses to create and grow estuary related businesses that responsibly conserve natural resources, to export value added products to the world to treat visitors to the tremendous adventures that the estuary provides and to encourage responsible recreational use of our estuary resources.

**6d. Lead Agency Responsible for Implementation**

Collaboration is key within the estuary for leaders in economic development and tourism (SCPDC, SLEC, the SBDC, the Chambers and local government) to know the resources and to use every opportunity to disseminate grant, incentive and financial opportunities to the public. A key additional player are our bankers. Entrepreneurs often go the their bank when they have ideas. Bankers need to be aware of technical assistance opportunities and gap financing opportunities so that entrepreneurs have alternatives, information and an understanding of the importance of the balance between economic and environmental considerations. All parties need to be a part and aware of BTNEP’s resources to compliment, support and provide proper cautions when businesses create or expand in a way that effects the estuary.

**6e. Timelines and/or Milestones**

The Small Business Development Center, South Louisiana Economic Council and South Central Planning & Development Commission operate year round providing services to entrepreneurs and existing businesses. Milestones would include a review of new business starts and contacts made between there agencies and members of the business community

**6f. Possible Range of Cost and Sources of Funding**

The noted agencies often provide free or low business and technical assistance services. SCPDC’s Revolving Loan Funds are a low interest tool offered to businesses that cannot otherwise get traditional bank financing.

**6g. Performance Measures**

*Possible Data Gathered*

In partnership with SBDC, SLEC, SCPDC, TEDA and other local economic development officials, BTNEP could gather information on estuary and resource based businesses. This could provide examples for people interested in getting into this type of business.

*Monitoring*

BTNEP could annually request data on services provided to estuary based businesses. Monitoring

1. **Parties Responsible:** SBDC, SLEC, SCPDC, TEDA SBDC, SLEC, SCPDC, TEDA

**ii. Timetable for Gathering Data:** Annually

**iii.** **How Data is Shared:** *This information could be provided to the Management Conference and made available on its website and through BTNEP’s communication network.*

**7. Liaison Roles of BTNEP
(EG1, EG2, EG3 & EG4)**

BTNEP and its program office and staff are unique resources to serve and supplement economic and business development within the region. With the partnering and benefit of the Management Conference membership from federal, state, local, academic and business community leaders, the program is properly viewed as a neutral resource to provide balance when parties consider the use, versus the protection of our precious natural resources.

**7a. Objectives**

1. Educate business leaders, elected officials, university officials and the general public about the economic.
2. Become a thought leader for the impact of regulations and how they affect both the economics and ecologic environments.
3. Drive R&D in key sectors.
4. Promote technology transfer.
5. Understand (and explain) best practices.
6. Operate as a conduit.
7. Identify and promote solutions.
8. Serve as a connector and promoter of BTNEP related businesses.

**7b. Description**

1. SBDC, SCPDC & TEDA should add/include BTNEP in resource guides for small businesses. These guides offer a variety of services that entrepreneurs might tap into when considering or developing new or expanding opportunities.
2. While recognizing their lobbying prohibition BTNEP should be envited and asked to provide information when economic development activities involve significant or unique potential environmental impacts.
3. By keeping an ear on the needs of the community and the estuary, when funding opportunities are made available, BTNEP should stand ready to propose research and development projects to gather and access data that responds to frequently asked questions and could assist in pending community and polical decisions.
4. BTNEP should showcase new technologies and service/support federal and state agencies in this capacity.
5. BTNEP should showcase eco-based tourism and business activities that promote, respectfully utilizing estuary resources.

**7c. Location**

 BTNEP Estuary wide, in state and national forums

**7d. Lead Agency Responsible for Implementation**

BTNEP

**7e. Timelines and/or Milestones**

Continual

**7f. Possible Range of Cost and Sources of Funding**

**Federal and State programmatic resources provide some funding to support BTNEP’s role as a liason for the estuary. When opportunities arise that outside funding is available, it should be utilized as long as the methods of funding are in line with ethics and other legal boundaries.**

**7g. Performance Measures**

*Possible Data Gathered*

Types and location of eco-tourism based business operations; best practices for eco-based operations; and information specific to a pending problem of issue*.*

*Monitoring*

1. **Parties Responsible:** BTNEP

**ii. Timetable for Gathering Data: Continual**

**iii.** **How Data is Shared:** Web based and other communication network

**iv.** **Possible Data Gaps:**

**v**. **If Additional Funding Is Needed:**

1. **Business Education and Training
(EG1, EG2, EG3)**

Educational support activities shall include education efforts for elected officials, university leadership, the business community, and the general public about the economic opportunity inherent in creating and sustaining a new industry sector aligned with BTNEP’s environmental goals.

**8a. Objectives**

1. To educate business leaders, elected officials, university officials, and the general public about the economic value and the potential of BTNEP as a future economic engine for southern Louisiana.
2. To become a thought leader for the impact of regulations and how they affect both the economic and ecologic environments of BTNEP.
3. To drive economic diversification and stability through the appropriate use natural resources found in the estuary, included extracting higher value products from existing resources through the use of research and development.
4. To explore opportunities to create new courses, programs, certifications, and degree programs in conjunction with higher education and business leaders.

The objective is to support development and implementation of education and certification programs throughout the education ecosystem. Aligning with existing economic development strategies to make coastal restoration a legitimate “export industry” in South Louisiana, BTNEP can drive smart strategies for workforce development.

Education institutions have expressed a strong desire to be more aligned with economic development in their respective areas. With partners like Fletcher Technical College and Nicholls State University, BTNEP can assess the needs of the future workforce and assist higher education institutions in developing curricula that will help fill those future needs.

**8b. Description

Creating Coastal Curricula**

Creating curricula generally takes excess time and money. Given the economic climate, seeking alternative ways to create programs at higher education institutions could be the answer. There are three main components:

1. Assessing existing programs. Understanding what programs and courses currently exist locally is the first component to solving this challenge.
2. Assessing future workforce needs. While more complicated, understanding what companies will need over the next 10-20 years is critical in linking these programs to actual jobs.
3. Filling the gaps. To execute, BTNEP should only work on filling the gaps. It is estimated that many certificate programs could be created without the addition of any new courses. By restructuring existing courses to create programs, it is possible to create impactful programs with little to no new funding.

**8c. Location**

These activities can be undertaken at all higher education institutions in the BTNEP region.

 **8d. Lead Agency responsible for Implementation**

BTNEP will collaborate with the respective institutions and economic development organizations throughout the region to implement these initiatives.

**8e. Timelines and/or Milestones**

Evaluation should take place over year one of the initiative. Working on certificate programs with Fletcher and Nicholls will likely take another year. Continuously assessing and improving these programs will be critical to their success.

**8f. Possible Range of Costs and Sources of Funding**

It is estimated this could be done with minimal additional funding. A more practical approach would be to fund the assessment activities through grant activities connected to BTNEP partners. To conduct a thorough analysis, it is estimated to run between $25,000 - $50,000.

**8g. Performance Measures**

* 1. **Programs:** Primary metric will be the number of programs created.
	2. **Reach:** Secondary metrics will include the number of students through the programs and the percentage of them that receive jobs in the industry.

Additional metrics should be developed for each individual program created.

**9. Marketing the Barataria-Terrebonne National Estuary Program
(EG4)**

Marketing activities for BTNEP should focus on establishing a strong brand around environmental opportunities and the coastal restoration industry.

**9a. Objectives**

1. To explore opportunities to create a new brand or maximize the existing brand throughout Southeast Louisiana.
2. To create place-based marketing programs that will reinforce the positive messages about quality of life and economic opportunities in the BTNEP region.
3. To serve as a connector and promoter of BTNEP related businesses through the support or creation of an exposition that focuses on business, technology, and academic research related to estuaries.

Leveraging the strong environmental brand already associated with BTNEP, future activities should build upon that to promote economic and technological opportunities for environmentally sustainable businesses.

**9b. Description**

***Becoming a hub for economically sustainable businesses***

In general, marketing takes a large, sustained investment to make a lasting impact. However, it is believed that BTNEP has an opportunity to become the flag bearer for environmentally sustainable businesses in its region without a large marketing budget. To accomplish this, BTNEP should:

1. Maximize its Brand Exposure. With existing conferences in key areas already underway, BTNEP can get a lot by partnering with those entities to bring value to the conference through in-kind contributions.
2. Focus on Earned Media. Creating and distributing talking points on the quality of life and economic opportunities in the BTNEP region will situate the organization as a thought-leader in the area and should create earned media opportunities.
3. Utilize Word of Mouth. Inherent in this small region in South Louisiana, is that BTNEP can spread its message to its desired audience by becoming a trusted and valued partner to both business and academic partners.

**9c. Location**

These activities can be undertaken throughout south Louisiana.

**9d. Lead Agency responsible for Implementation**

BTNEP will collaborate with the respective institutions and economic development organizations throughout the region to implement these initiatives.

**9e. Timelines and/or Milestones**

An annual marketing strategy should be put in place with

**9f. Possible Range of Costs and Sources of Funding**

It is believed that much of this work can be done relatively cheaply. Although, it should be noted, the more resources put into marketing activities, the higher the success rate should be. It is recommended that approximately $xx per year be spent to further the marketing goals.

There are also Economic Development Administration (EDA) dollars available for some of these activities. Further, the State of Louisiana and local tourism commissions occasionally open grant opportunities to fund marketing of tourism assets in their respective areas.

**9g. Performance Measures**

Primary metric will be the number of marketing initiatives created.

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