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## **Executive Summary**

### Introduction

The city of Orange Beach is located on Alabama's southernmost tip, a city along the gulf coast that borders the Gulf of Mexico, a popular tourist destination during the summer months. Orange Beach is part of the Mobile Bay watershed and contained within it are many environmentally sensitive ecosystems. In recent years increased levels of human growth have threatened this sensitive area and caused many environmental problems.

In Orange Beach, current commercial developments such as strip malls and high-rise condos stress the sensitive biophysical environment as they lack construction in a sustainable manner and strain natural resources. Continual damage to these developments from hurricanes has led to a cycle of destruction, coastal erosion, and reconstruction that threatens natural resources as well as harming the coastal ecosystems. Orange Beach is located on a barrier island that is naturally meant to protect mainland coastal areas as well as marshes and coastal estuaries from damage during strong storms. Development on islands such as Orange Beach lead to disruption in sand movement and therefore erosion. To alleviate this problem beach renourishment projects pump millions of tons of sand along the coast to rebuild it and save beach developments. This process is often environmentally detrimental as foreign species are brought in and existing habitats destroyed. Tourism traffic, that can increase the small permanent population of around 5,000 to as many as 50,000 people, overloads existing resources and infrastructure. New

infrastructure that is built as a result of the seasonal population growth does not consider the environment. This lack of environmental consideration destroys ecosystems that could be effectively preserved.

### Research Questions

In this poster we focused on the historical events that led to the current development practices. In particular, we focus on land use planning, and its impacts on the environment. Our first question is “How do Orange Beach citizen’s and economy interact with the natural environment and what are the socio-economic and environmental impacts?” The next question we ask is “What is the driving mechanism behind sprawl and what are the impacts of sprawl on Orange Beach?” Our final question focuses on the future of Orange Beach. We asked “What steps can be taken to repair the social and biophysical environments and how can local development take place in a sustainable manner?”

### Research Methods

To investigate these questions we conducted both a media analysis using key opinion leading newspapers and a literature review of scholarly journals and government documents about Orange Beach, Alabama land use planning. Using these methods, we compiled data from locals, city officials, city government documents, local media outlets, and scholarly articles relevant to our topic.

### Collective Findings

Our findings have remained consistent throughout the project, and conclude that Orange Beach is experiencing urban sprawl due to the high demand for waterfront property. This sprawl has been encouraged by known corruption within the government

that has allowed much of this development in biophysically sensitive areas to occur in exchange for lucrative personal assets. Increased demand leads to higher real estate prices, insurance prices, and larger potential for hurricane related damage. Powerful hurricanes such as 2004's Ivan, have created a cycle of destruction and reconstruction contributing to the economic growth of the local construction and development companies, as well as industry by stimulating the clean up and reconstruction of the material lost. Due to sprawl in Orange Beach, residents are heavily dependent on vehicular traffic. This in turn increases the demand for new and renovated roads and bridges along the front beach road resulting in more non-pervious surfaces and habitat degradation. During the peak tourist season, the population of Orange Beach increases ten fold, which creates a greater strain on the infrastructure including: water, sewer, power, roads, and bridges. The increase in demand for condominium complexes along the front beach road has caused erosion, which has become an environmental issue. These structures are now taking the place of natural sand dunes that once protected the island from erosion, hurricane winds and storm surge.

### Key Results

Our findings have given us an opportunity to elaborate on possible solutions that we believe would greatly benefit Orange Beach in the future. We conclude with a range of alternative development strategies that would mitigate some of these problems from an environmental standpoint. These alternate strategies are rooted in the principles of "Smart Growth" and call for development practices that incorporate higher density, dual residential and commercial areas which are centrally located, as opposed to widespread, low density areas of separate commercial and residential developments. Moving

development away from sensitive areas such as the coast alleviates stress on that environment and protects the ecosystems that remain there. This also lowers the risk of damage from large storms that hit the island and lessens the need for multimillion-dollar beach renourishment projects.