

1 EXHIBIT E

2
3 INVESTING IN FLORIDA'S COASTAL AND OCEANS FUTURE

4
5 INTRODUCTION

6 Florida is the only continental state largely surrounded by coastal seas and oceans. The quality
7 of life of its people and much of their livelihood are directly connected to the condition of these
8 waters and their tributaries. Florida's weather and climate are strongly modified by the warm
9 waters flowing from the Caribbean and along all of the State's coasts through the offshore
10 boundary currents, as part of the Gulf Stream current system. Florida is also undergoing
11 explosive growth and development that is concentrated in the coastal zone, where multiple
12 interests intersect and informed management is critical. Loss of habitat to support fish and
13 wildlife, degradation of water quality, increasing harmful algal blooms, storm impacts, and the
14 decline of fisheries and ecologically and economically important marine ecosystems, such as
15 coral reef communities, clearly demonstrate the need for sound governance of State and
16 connecting waters.

17 To abate critical threats to Florida's Marine Resources requires accurate assessment,
18 continuous monitoring, and real-time ability to predict changes to the physical, chemical,
19 biological, geological, and socioeconomic components of our marine ecosystems. It also
20 requires a fully-integrated data handling system to allow all resource managers and other
21 interested parties to easily use present and future data in making their decisions.

22 Florida's economy is heavily dependent on its oceans and shoreline and the importance of
23 knowing how to use them sustainably to ensure a continuing strong economy:

- 24 • Florida's shoreline Gross State Product (GSP) is over \$402 billion, two and a half
25 times the nearly \$160 billion of its' inland economy.
- 26 • Florida produced \$23.2 billion from transactions of marine resources and operative
27 industries.
- 28 • Ocean tourism and recreation for 2005-2015 in Florida is projected to grow by 73
29 percent, creating more than 268,000 new jobs.
- 30 • Florida's GSP for transportation and recreation is one of the top five in the nation, a
31 significant influence on the ocean economy.

32
33 Without clean water, without healthy habitat, and without appropriate assessment tools to
34 manage them, we stand to lose the valuable ocean resources and the economy they support.

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36 INVESTING IN THE FUTURE

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38 Florida's goal is to protect and conserve our ocean and coastal resources while generating
39 economic benefits from their use. We need to use all our talents and institutions to sustain a

1 robust ocean and coastal economy and resources that will support us into the future. Success
2 mandates that we use creative public and private partnerships, pursue opportunities to
3 leverage funds, use our universities and research laboratories and coordinate our efforts with
4 local, state and federal agencies.

7 GREATEST NEEDS

9 WATER QUALITY

11 Water quality is of critical importance to Florida. A seemingly simple topic, water quality
12 determines what biological communities can live in a water body, whether the water is
13 harmful to humans drinking or exposed to it, and whether the water is suitable for human
14 uses such as manufacturing or cooling. With an economy driven by tourism focused on use
15 and appreciation of water resources, maintenance of high water quality to support reefs, grass
16 beds, fishing, and beach activities, among many others, must be a high priority.

18 *Water Quality Research Priorities:*

- 19 1. *Real time statewide information that guides water quality management, navigation and hazard*
20 *response, and marine resource management.*
- 21 2. *Monitoring programs that relate nutrients and living resources to human activities, to provide*
22 *cost effective resource management programs improving oceans and human health.*
- 23 3. *Harmful algal bloom research, to protect tourism, commercial and recreational fisheries and*
24 *inform watershed management for ocean health.*

26 OCEAN AND COASTAL ECOSYSTEMS

28 Much of Florida's economy is based on living marine resources. Commercial and sport fishing
29 along the coasts, recreational diving, and tourism are just a few examples of activities based on
30 the coastal ecosystems and having substantial economic impact.

31 Coastal and nearshore habitat and resources on the Florida coast and shelf are shaped by
32 geological, hydrological, and biological processes interacting on a variety of scales from 100s of
33 kilometers (for instance, groundwater flow and climate change) to millimeters (like microbial
34 communities and small benthic invertebrates). A comprehensive understanding of the
35 ecosystems making up these areas depends upon reliable baseline data in order to ultimately
36 support wise management of resources and habitats.

37 *Ocean and Coastal Ecosystems Research Priorities:*

- 38 1. *Map and characterize the seafloor and coast including the distribution and abundance patterns*
39 *of coastal marine organisms.*
- 40 2. *Quantify natural and manmade habitat loss and associated economic impacts.*

- 1 3. *Quantify linkages between ocean and coastal habitats and the living marine resources that they*
2 *support.*
3 4. *Evaluate, improve and implement effective strategies for protecting and restoring ocean and*
4 *coastal habitats.*
5

6 TOOLS

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8 Fulfilling Florida’s need to observe and predict environmental change and the ecosystem
9 response of its coastal waters will require two components.

10
11 1. Integrated Coastal and Ocean Observing Systems

- 12 a. A mix of in water platforms and buoys, shipboard surveys and remote sensing is
13 required for continuous monitoring of water quality and status of marine
14 resources. The purpose is to create a sustained interdisciplinary observing
15 system that spans all of Florida’s waters from the outer shelf to coastal estuaries
16 and rivers.
17

18 2. Integrated Data Management and Prediction

- 19 a. Coordinated collection, handling, quality control, sharing, and interpretation of
20 research and monitoring data are critical to improving the State’s resource
21 management. Centralized coordination of model development, for prediction
22 and web based postings of user-friendly data and model results are needed to
23 accommodate science based decisions by management agencies and the general
24 public.
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26 CONCLUSION