

**TALES OF THE TAMIAMI TRAIL:  
IMPLEMENTING ADAPTIVE MANAGEMENT IN  
EVERGLADES RESTORATION**

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I. INTRODUCTION

The Tamiami Trail (U.S. Hwy 41) connects Tampa and Miami. From Tampa, the highway moves southward along the west coast of Florida. Fort Myers and Naples lie to its west on the southwest coast of Florida, while to its east lie the Audubon Society’s Corkscrew Swamp Sanctuary, containing remnants of the swamp which used to command this Florida heartland, and Lake Trafford, undergoing a major dredging and restoration effort.<sup>2</sup> The Florida Panther National Wildlife Refuge lies to their east.<sup>3</sup> From Naples, the Trail curves to the east, passing Rookery Bay National Estuarine Research Reserve and Collier Seminole State Park and then Ten Thousand Islands National Wildlife Refuge (to its south)

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2. See Audubon, Corkscrew Swamp Sanctuary, <http://www.corkscrew.audubon.org> (last visited Dec. 21, 2006); U.S. Army Corps of Eng’rs, Central and Southern Florida Ecosystem Restoration, Critical Project Letter Report (May 1998), <http://www.saj.usace.army.mil/projects/laketraff.htm>.

3. See U.S. Fish & Wildlife Service, Florida Panther National Wildlife Refuge, <http://www.fws.gov/floridapanther/> (last visited Dec. 21, 2006).

and Picayune Strand State Forest and Fakahatchee Strand State Preserve (to its north).<sup>4</sup> As you move further eastward, the road cuts through the Big Cypress National Preserve and then skirts along the northern border of Everglades National Park next to the Miccosukee Indian Village.<sup>5</sup> This east-west section of Tamiami Trail eventually becomes Southwest Eighth Street in Miami-Dade County, passing Florida International University and then ends as “Calle Ocho” in the Little Havana section of Miami.<sup>6</sup>

Originally the idea of James Franklin Jaudon, President of the Chevalier Corporation in Miami and Dade County’s tax assessor in 1915, the Tamiami Trail officially opened in 1928, requiring 13 years of labor, \$8 million, and 2.6 million sticks of dynamite.<sup>7</sup> Barron Gift Collier, a streetcar advertising magnate with diverse interests in southwest Florida, actually bankrolled completion of the road, creating the Trail’s “dog leg” in the Trail at the point where he took over the work and for which the state legislature established a new county and named it after him.<sup>8</sup> The National Park Service describes the construction of this portion of the Trail on the Big Cypress National Preserve website as follows:

The most impossible part of the Trail was the stretch from just below Carnestown to the Dade line. It took 150 workers to complete 1.25 miles per month. The final 45.5 miles took nearly four years to build. They drilled the limestone with a 30-ton drill car. Day and night for 28 months it drilled through solid rock. Bay City skimmer scoop machines unloaded sand

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4. See Friends of Rookery Bay, Rookery Bay National Estuarine Research Reserve, <http://www.rookerybay.org> (last visited Dec. 21, 2006); Collier-Seminole State Park, <http://www.floridastateparks.org/collier-seminole/> (last visited Dec. 21, 2006); U.S. Fish & Wildlife Service, Ten Thousand Islands National Wildlife Refuge, <http://www.fws.gov/south-east/TenThousandIsland/> (last visited Dec. 21, 2006); Florida Department of Agriculture & Consumer Services, Division of Forestry, Picayune Strand State Forest, [http://fl-dof.com/state\\_forests/picayune\\_strand.html](http://fl-dof.com/state_forests/picayune_strand.html) (last visited Dec. 21, 2006); Fakahatchee Strand Preserve State Park, <http://www.floridastateparks.org/fakahatcheestrand/> (last visited Dec. 21, 2006).

5. National Park Service, Big Cypress, <http://www.nps.gov/bicy/> (last visited Dec. 21, 2006); National Park Service, Everglades National Park, <http://www.nps.gov/ever/> (last visited Dec. 21, 2006); Miccosukee Indian Village, <http://www.miccosukeeresort.com/mivillage.html> (last visited Dec. 21, 2006).

6. Tamiami Trail, Wikipedia, The Free Encyclopedia, [http://en.wikipedia.org/wiki/Tamiami\\_Trail/](http://en.wikipedia.org/wiki/Tamiami_Trail/) (last visited Dec. 21, 2006); Calle Ocho, [http://miami.about.com/cs/maps/a/calle\\_ocho.htm](http://miami.about.com/cs/maps/a/calle_ocho.htm) (last visited Dec. 21, 2006). The South Florida Ecosystem Restoration Task Force has its staff located on the campus of Florida International University, at 11200 S.W. 8th Street, see <http://www.sfrestore.org/> (last visited Dec. 21, 2006).

7. *Id.* Jaudon’s company completed the portion of the road in Miami-Dade County before Collier became involved. See Gail Clement, Everglades Biographies, James Franklin Jaudon, <http://www.fiu.edu/~glades/reclaim/bios/jaudon.htm> (last visited Dec. 21, 2006).

8. *Id.*

and rock. They did the work of 50 men leveling the grade thrown up by the dredges. Dredges mounded up fill for road bed embankments. They used wooden tramways for transporting supplies. Caterpillar tractors pulled Austin Western scarifiers during road grading operations about 1927.<sup>9</sup>

The road bisecting this wilderness always has had its risks. In the twentieth century, road kills of wildlife were so prevalent that they sometimes made “the road slippery and the stench obnoxious.”<sup>10</sup> President Truman dedicated Everglades National Park in 1947, an unusual national park based on its “spectacular plant and animal life” rather than “lofty peaks” or “mighty glaciers.”<sup>11</sup> However, the Tamiami Trail, and the water control structures associated with it, disrupts this ecosystem. The Everglades National Park describes the situation somewhat lyrically on its website:

Now, extensive canal and levee systems shunt off the life-giving bounty of the rain before it can reach the national park, which comprises only one-fifth of the historic Everglades. At times the water control structures at the park boundary are closed and no water nourishes the wood stork's habitat. Or, alternatively, water control structures are opened, and unnaturally pent-up, human-managed floodwaters inundate Everglades creatures' nests or eggs and disperse seasonal concentrations of the wading birds' prey.<sup>12</sup>

The Tamiami Trail transects the portion of the southern part of the Greater Everglades Ecosystem which the United States and Florida are now jointly trying to rehabilitate. Altogether, this comprises much of the mostly publicly-owned property called the

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9. National Park Service, *The Tamiami Trail*, <http://www.nps.gov/bicy/Tamtral.htm> (last visited Dec. 21, 2006). A more detailed history of the Trail can be found on the Barron Collier museum website. Collier County Museums, *Tamiami Trail History and Photos*, <http://www.colliermuseum.com/history/tamiami.htm> (last visited Dec. 21, 2006).

10. THOMAS E. LODGE, *THE EVERGLADES HANDBOOK: UNDERSTANDING THE ECOSYSTEM* xxxiii (2d ed. 2005).

11. Harry S. Truman, Dedication of Everglades National Park (Dec. 6, 1957), *quoted in* Deborah Nordeen, *South Florida's Watery Wilderness Park Nears 50*, <http://www.nps.gov/ever/eco/nordeen.htm> (last visited Dec. 21, 2006); National Park Service, *A Park for the World: Everglades National Park*, <http://www.nps.gov/ever/presskit/heritage.htm> (last visited Dec. 21, 2006) (The Park is “an International Biosphere Reserve, a World Heritage Site and a Ramsar Wetland of International Importance . . .”).

12. National Park Service, *A Park in Danger: Everglades National Park*, <http://www.nps.gov/ever/eco/threats2.htm> (last visited Dec. 21, 2006).

Everglades Protection Area.<sup>13</sup> Most of the rest of the original ecosystem, which is urbanizing or agricultural, must be managed carefully and intelligently if the Everglades Protection Area is to be rehabilitated to a more natural state.<sup>14</sup> Projects near the Trail are critical to the success of the overall restoration plan. Their success, in turn, depends heavily on an ability to adapt them as projects to manage water to their north are built and change operations of the water management system.<sup>15</sup>

The United States and Florida have struggled with how to restore the Greater Everglades Ecosystem for several decades. The Comprehensive Everglades Restoration Plan (CERP) adopted by Congress in 2000 came after almost two decades of wrangling — beginning with Florida Governor Bob Graham’s “Save Our Everglades” program and continuing since to include substantial state and federal environmental initiatives, a lawsuit by the United States against the District, Governor Lawton Chiles’ high-profile “surrender” in this suit shortly after his election, numerous challenges to this “settlement” before state and federal agencies and judges, creation by interagency agreement of a South Florida Ecosystem Restoration Task Force and Working Group, a Statement of Principles among stakeholders staying several legal challenges, and a state Everglades Forever Act intended to embody and indeed to force compromise.<sup>16</sup> In fact, there was some remarkable ecosystem restoration in other parts of the state well underway prior to CERP, such as the Everglades Construction Project creating stormwater treatment areas (STAs) for runoff from the Everglades Agricultural Area (EAA) and the Kissimmee River Restoration

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13. The Everglades Protection Area usually refers to the portion of the Everglades for which the state is supposed to meet a numerical standard for phosphorus (roughly 10 ppb) and to set a timetable for performance under the consent decree settling the lawsuit between the United States and Florida. This area basically consists of the Water Conservation Areas and Everglades National Park. See LODGE, *supra* note 10, at 231. The area includes the Loxahatchee Wildlife Refuge, also known as Water Conservation Area 1, on the outskirts of West Palm Beach, which is not a focus of this Article. *Id.* at 253.

14. This area includes the Everglades Agricultural Area (EAA) to the south of Lake Okeechobee, the C-131 Basin to the west of the EAA, the Upper Chain of Lakes to the north of the Lake, and, of course, the Lake itself.

15. Discussion of these features of the water management system, such as Lake Okeechobee and the Everglades Agricultural Area is largely beyond the scope of this Article. Also omitted is a discussion of some features of the proposed Everglades restoration along Tamiami Trail still in the very early stages of development, such as the L-31N (L-30) Seepage Management Pilot, Official site of the Comprehensive Everglades Restoration Plan (CERP), [http://www.evergladesplan.org/pm/projects/proj\\_36\\_l31n\\_seepage.cfm](http://www.evergladesplan.org/pm/projects/proj_36_l31n_seepage.cfm) (last visited at Dec. 21, 2006), and Biscayne Bay Coastal Wetlands, Official site of CERP, [http://www.evergladesplan.org/pm/projects/proj\\_28\\_biscayne\\_bay.cfm](http://www.evergladesplan.org/pm/projects/proj_28_biscayne_bay.cfm) (last visited at Dec. 21, 2006).

16. This history of the restoration effort has been described in more detail elsewhere. See generally Alfred R. Light, *Ecosystem Management in the Everglades*, 14 NAT. RESOURCES & ENV'T 166 (2000).

north of Lake Okeechobee, some of which is now visibly complete.<sup>17</sup> In 2004, the State of Florida accelerated Everglades restoration by deciding to finance and construct several CERP and related projects with borrowed funds in what has become known as the Acceler8 program.<sup>18</sup>

CERP is based on the Corps' and the District's April 1999 "Central and South Florida Comprehensive Review Study," variously called the Re-Study or the "Yellow Book."<sup>19</sup> CERP requires an elaborate process for intergovernmental coordination and public participation.<sup>20</sup> Another integral component of the Re-Study was an adaptive management and monitoring plan.<sup>21</sup> Accordingly, Congress approved funding for an Adaptive Assessment and Monitoring Program in the Water Resources Development Act of 2000 (WRDA 2000), which created CERP.<sup>22</sup> Since 2000, the concept of Adaptive Management (AM) has evolved and is now defined in the CERP AM Strategy and AM Implementation Guidance Manual.<sup>23</sup> In Part II, we shall describe this CERP AM framework.<sup>1</sup>

There is much to learn about how AM principles actually are applied in the Everglades through examining projects which were being designed and implemented during the period in which the CERP AM Program was being developed (2000-2006). This is the focus of Part III.<sup>25</sup> We detail the political and administrative history of several of the most critical of these projects along the

17. See S. Fla. Water Mgmt Dist., Everglades Construction Project, [http://www.sfwmd.gov/org/erd/ecp/3\\_ecp.html](http://www.sfwmd.gov/org/erd/ecp/3_ecp.html) (last visited Dec. 21, 2006); S. Fla. Water Mgmt Dist., Kissimmee River Restoration Project, <http://www.sfwmd.gov/org/erd/krr/index.html> (last visited Dec. 21, 2006).

18. See S. Fla. Water Mgmt Dist., Acceler8, <http://www.evergladesnow.org> (last visited Dec. 21, 2006); Alfred R. Light, *Spark Plugs of Policy Implementation: Intergovernmental Relations and Public Participation in Florida's Acceler8 Initiative to Speed Everglades Restoration*, 30 VT. L. REV. (forthcoming Summer 2006).

19. The Yellow Book can be ordered as a 2 CD set from the Comprehensive Everglades Plan website. Central and Southern Florida Project, Comprehensive Review Study, Final Integrated Feasibility Report and Programmatic Environmental Impact Statement (April 1999), <http://www.evergladesplan.org/pub/pubrequest/requestfrm.cfm> [hereinafter Yellow Book].

20. See generally Light, *supra* note 18.

21. Yellow Book, *supra* note 19, at § 9.5.3 (Monitoring Program Planning Guidelines); see also RECOVER, CERP Monitoring and Assessment Plan, Phase 1, § 2.0 (Development of the CERP Monitoring Plan and Adaptive Management Program), available at [http://www.evergladesplan.org/pm/recover/recover\\_docs/map/MAP\\_2.0\\_Develop.pdf](http://www.evergladesplan.org/pm/recover/recover_docs/map/MAP_2.0_Develop.pdf).

22. Water Resources Development Act of 2000, Pub. L. 106-541, § 601(b)(2)(C)(xi), 114 Stat. 2572, 2680-81 (2000) [hereinafter WRDA of 2000]; see WRDA 2000 Initial Projects: Adaptive Assessment and Monitoring Program, [http://www.evergladesplan.org/wrda2000/ini\\_proj/adap\\_ass\\_mon.aspx](http://www.evergladesplan.org/wrda2000/ini_proj/adap_ass_mon.aspx) (last visited Dec. 21, 2006).

23. U.S. Army Corps of Eng'rs, RECOVER, Comprehensive Everglades Restoration Plan Adaptive Management Strategy (April 2006), available at [http://conference.ifas.ufl.edu/GEER2006/AM\\_Strategy.pdf](http://conference.ifas.ufl.edu/GEER2006/AM_Strategy.pdf) [hereinafter AM Strategy].

24. See *infra* notes 32-61 and accompanying text.

25. See *infra* notes 62-188 and accompanying text.

Tamiami Trail. First is the Modified Water Deliveries to Everglades National Park Project (Mod Waters) authorized in 1989, but which was only commencing in 2006.<sup>26</sup> Collaborative adaptive management for this project included facilitation of a partial stakeholder consensus in 2006 in order to move forward.<sup>27</sup> Closely related to Mod Waters is the vision of a more natural hydrology by decompartmentalization of water conservation areas to the north and east of Everglades National Park. Because of major uncertainties associated with the project, Decompartmentalization (Decomp) has become a major test for the AM concept.<sup>28</sup> The re-engineering of the C-111 Canal into the C-111 spreader canal is vitally linked to outcomes in the Mod Waters and Decomp projects.<sup>29</sup> To the west of Mod Waters, various projects to construct or to clean-out existing culverts under Tamiami Trail are needed to provide information to make the massive Picayune Strand wetlands restoration a meaningful component of Everglades Restoration.<sup>30</sup> Innovative intergovernmental cooperation is piecing together the way forward through a variety of projects in this western portion of the Greater Everglades.

In Part IV, we reflect upon how the tales of these ecosystem restoration projects along the Tamiami Trail show the continuing difficulties for administrators trying to apply adaptive management and to achieve restoration in a complex interagency and intergovernmental environment.<sup>31</sup> In the end, we see the continuing legacy of Barron Collier in shaping the Everglades along the Tamiami Trail.<sup>32</sup>

## II. ADAPTIVE MANAGEMENT IN EVERGLADES RESTORATION IMPLEMENTATION

Ecosystem management has many definitions. R. Edward Grumbine offers the following: "Ecosystem management integrates scientific knowledge of ecological relationships within a complex sociopolitical and values framework toward the general goal of protecting native ecosystem integrity over the long term."<sup>33</sup> The focus is on *goals* such as maintaining viable populations of native spe-

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26. See *infra* notes 63-139 and accompanying text.

27. See *infra* notes 129-39 and accompanying text.

28. See *infra* notes 140-56 and accompanying text.

29. See *infra* notes 157-66 and accompanying text.

30. See *infra* notes 167-88 and accompanying text.

31. See *infra* notes 189-243 and accompanying text.

32. See *infra* notes 244-49 and accompanying text.

33. R. Edward Grumbine, *What is Ecosystem Management?*, 8 CONSERVATION BIOLOGY 27 (1994).

cies, maintaining evolutionary and ecological processes, and accommodating human use and occupancy within such constraints.<sup>34</sup> Adaptive management usually refers to the policy *tools* “intended to move decision making from a process of incremental trial and error to one of experimentation using continuous monitoring, assessment, and recalibration.”<sup>35</sup> The Comprehensive Everglades Restoration Plan Adaptive Management Strategy, released in April 2006, provides a detailed definition:

Adaptive management is a science- and performance-based approach to ecosystem management in situations where predicted outcomes have high level of uncertainty. Under such conditions, management anticipates actions to be taken as testable explanations, or propositions so the best course of action can be discerned through rigorous monitoring, integrative assessment, and synthesis. Adaptive management advances desired goals by reducing uncertainty, incorporating robustness into project design, and incorporating new information about ecosystem interactions and processes as our understanding of these relationships is augmented and refined. Overall system performance is enhanced as AM reconciles project-level actions within the context of ecosystem-level responses.<sup>36</sup>

The CERP definition of AM reflects the special CERP context. The Yellow Book examined the hypothetical performance of 21 parts of the South Florida ecosystem, including Lake Okeechobee, the Caloosahatchee and the St. Lucie estuaries, each of the three water conservation areas, two freshwater physiographic regions in Everglades National Park, and Florida Bay.<sup>37</sup> The Plan was based on a selected alternative, Alternative D13R, relying significantly on various computer models. The South Florida Water Management Model, the River of Grass Evaluation Model (ROGEM), the Across Trophic Level System Simulation Model (ATLSS), and water quality models evaluated the consequences of various alternatives.

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34. *Id.*

35. JOHN COPELAND NAGLE & J.B. RUHL, *THE LAW OF BIODIVERSITY AND ECOSYSTEM MANAGEMENT* 334 (2002). Key books on adaptive management include: C.S. HOLLING, ED., *ADAPTIVE ENVIRONMENTAL ASSESSMENT AND MANAGEMENT* (1978); KAI N. LEE, *COMPASS AND GYROSCOPE: INTEGRATING SCIENCE AND POLITICS FOR THE ENVIRONMENT* (1993); CARL WALTERS, *ADAPTIVE MANAGEMENT OF RENEWABLE RESOURCES* (1986).

36. AM Strategy, *supra* note 23, at 1.

37. LODGE, *supra* note 10, at 249.

The ATLSS model, for example, evaluated effects on endangered species such as the Cape Sable seaside sparrow and the snail kite.<sup>38</sup>

Alternative D13R contained 49 operational and structural features, including above-ground reservoirs north of Lake Okeechobee, and in the Everglades Agricultural Area, a huge contribution of Aquifer Storage and Recovery wells around Lake Okeechobee, and Decentralization of Water Conservation Area 3-A, 3-B, and Everglades National Park.<sup>39</sup> This final component, Component QQ6, is of particular interest here. The Plan contemplated filling in the Miami Canal in most of WCA-3, degrading the L-67B levee and installing overflow structures along the length of L-67A, filling in 7.5 miles of the south end of the L-67 canal (along the L-67A levee), from the Tamiami Trail northward, removing the L-28 levees on the west side of WCA-3, removing the L-29 levee (that forms the south end of WCA-3A and 3-B) and the S-12 gates that currently regulate flow from WCA—3A into Everglades National Park, and elevating the Tamiami Trail on a new levee (to replace the L-29) but provide a series of bridges to allow sheet flow into Everglades National Park.<sup>40</sup> The effectiveness of the Decentralization effort depended heavily on the accuracy of the computer models.

WRDA 2000 required that the Corps establish a process to ensure that new information resulting from changed or unforeseen circumstances, new scientific or technical information, or information developed through AM be integrated into implementation of the Plan. The Senate Committee on Environment and Public Works described the expectation:

The Committee does not expect rigid adherence to the Plan as it was submitted to Congress. This result would be inconsistent with the adaptive management principles in the Plan. Restoration of the Everglades is the goal, not adherence to the modeling on which the April 1999 Plan was based. Instead the Committee expects that the agencies responsible for project implementation report formulation and Plan implementation will seek continuous improvement of the Plan based upon new information, improved modeling, new technology, and changed cir-

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38. *Id.* at 249-50.

39. *Id.* at 250-52.

40. *Id.*

cumstances.<sup>41</sup>

The Corps' Programmatic Regulations, promulgated in 2003, directed the Corps and the South Florida Water Management District to develop the CERP AM Program.<sup>42</sup> This program was to include a monitoring and assessment program to be developed by CERP's scientific advisory board Restoration, Coordination, and VERification (RECOVER), periodic technical assessments by RECOVER, periodic assessments of CERP performance, re-evaluation and updates to the Plan to be conducted by the Corps and the District, and a mechanism to modify the Plan through Comprehensive Plan Modification Reports.<sup>43</sup> Mimicking the Senate Report, the regulations defined AM for CERP as "the continuous process of seeking a better understanding of the natural system and human environment in the South Florida ecosystem, and seeking continuous refinement in and improvements to the Plan to respond to new information, new or updated modeling, information developed though the assessment principles contained in the plan; and future authorized changes to the Plan in order to ensure that the goals and purposes of the Plan are fulfilled."<sup>44</sup>

As applied to CERP, the goal of AM is to support improved decision-making and Plan performance over time. The integration of its principles into CERP is envisioned as beneficial to four groups: (1) Managers/Decision Makers, (2) Project Teams, (3) Scientists/Technical Experts, and (4) Stakeholders.<sup>45</sup> For example, Managers may use AM to address uncertainty and build flexibility into the Plan.<sup>46</sup> Project Teams may use AM to elevate system-wide problems faced by a project to a team specifically designed to address them, the System Planning and Operations Team (SPOT).<sup>47</sup> Scientists are to use AM as a forum to dialogue with managers on the interpretation of scientific data and its application to evaluate Plan performance.<sup>48</sup> Stakeholders may use AM as an additional opportunity for public participation and to express "changing societal values."<sup>49</sup>

The CERP AM Strategy contains four process diagrams, called "boxes," that illustrate its major components: (1) CERP

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41. S. REP. NO. 106-362, at 41 (2000).

42. Adaptive Management Program, 33 C.F.R. § 385.31 (2006).

43. *Id.*

44. 33 C.F.R. § 385.3 (2006).

45. AM Strategy, *supra* note 23, at 1.

46. *Id.*

47. *Id.*

48. *Id.*

49. *Id.*

Planning, (2) Performance Assessment by RECOVER, (3) Management/Science Integration, and (4) CERP Updates by Corps and District Managers.<sup>50</sup> AM principles are applied in each “box.” For example, in CERP Planning, which occurs at both the system-wide and project-level, planning activities should anticipate uncertainty and build performance-based versatility and robustness into the design of the Plan and each project, or detect and correct errors after project construction and make adjustments as they arise to ensure restoration goals are achieved.<sup>51</sup> In Performance Assessment, scientific and technical information generated from the implementation of the monitoring program is organized to provide a process for the scientific RECOVER team to assess CERP performance and system responses, and to produce system status reports describing and interpreting the responses.<sup>52</sup> Box 3 is a critical phase of the AM process in which scientists and managers collaborate in the development of options for addressing the challenges and opportunities presented by new knowledge about, or unexpected events within, the Everglades ecosystem.<sup>53</sup> Box 4, the CERP Update Process, involves the decision to alter the CERP by adjusting project plans or operations, or altering the sequencing of projects.<sup>54</sup>

Of particular note is the CERP AM Strategy’s treatment of public participation. The Strategy touts that “[t]wo fundamental components of AM are collaboration and conflict resolution”<sup>55</sup> and advocates “an approach that incorporates openness, transparency, and accountability.”<sup>56</sup> The document recognizes the need for “building collaborative working relationships through the use of incentives and trust building, and minimizing conflict with the inclusion of a dispute resolution process.”<sup>57</sup> Thus, especially in Boxes 3 and 4 of the AM framework, “managers, scientists, and stakeholders will be most involved in negotiating competing interests and considerations to determine the best path forward for improved CERP performance.”<sup>58</sup> Despite these high-sounding statements of principle supporting collaboration and partnership with the public, the AM Strategy appears to envision only a “review and comment” role and responsibility for stakeholders and the public in CERP’s proc-

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50. *Id.* at 8.

51. *Id.* at 3.

52. *Id.* at 4.

53. *Id.* at 5.

54. *Id.* at 6.

55. AM Strategy, *supra* note 23, at 2.

56. *Id.*

57. *Id.*

58. *Id.* at 2.

esses.<sup>59</sup> The Strategy simply states that “[s]takeholders and the public have an opportunity to provide input and review planning and decision documents in each of the boxes of the AM Framework.”<sup>60</sup> The Strategy contains no discussion of any particular dispute resolution process involving stakeholders or the public;<sup>61</sup> nor is there any discussion of the role of litigation or judicial review.<sup>62</sup>

### III. CASE STUDIES: PROJECTS ALONG THE TAMIAMI TRAIL

Restoration projects along the Tamiami Trail may provide insights critical to the overall success of the Everglades restoration effort. In this survey of case studies, we shall move from east to west, taking U.S. 41 out of Miami. As one moves west past FIU and the Florida Turnpike one approaches the Miccosukee Casino on the north side of the road past Krome Avenue and the eastern edge of Everglades National Park on the south.<sup>63</sup> This is the portion of Tamiami Trail associated with Captain James F. Jaudon and which today is the location of Mod Waters, Decomp, and C-111.

#### *A. Modified Water Deliveries to Everglades National Park and CSOP (“Mod Waters”)*

In 1970, Congress established a quota system of monthly water allocations, consistent with seasonal South Florida rainfall, to protect Everglades National Park under drought conditions.<sup>64</sup> The system required minimum deliveries to three key areas in the Park: Shark River Slough, Taylor Slough, and the C-111/Eastern

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59. See Roles and Responsibilities in the AM Process, Stakeholders and the Public, in AM Strategy, *supra* note 23, at 7-8.

60. *Id.* at 6.

61. This is somewhat surprising in light of the experience developed over the past decade regarding the need for dispute resolution. For example, see the discussion of the CSOP Advisory Team *infra* notes 135-40 and accompanying text.

62. CERP managers are understandably skittish about discussing litigation in their documents. For example, the Miccosukee Tribe demanded that the comment “Litigation may prove to be time consuming, costly, and uncertain, and it may divert resources from restoration efforts . . .” be deleted from a 2004 progress report on CERP. See Alfred R. Light, *Of Square Pegs, Round Holes, and Recalcitrants Lying in the Weeds: Superfund’s Legal Lessons for Everglades Restoration*, 12 MO. ENVTL. L. & POLY REV. 91, 116 (2004-2005). On the role of judicial review, see *id.* at 116-23.

63. See Miccosukee Resort and Gaming Website, <http://www.miccosukee.com/map.html> (last visited Dec. 21, 2006).

64. A good description of the background and chronology of the project may be found on the website of the Collaborative Adaptive Management Network. *Case Study #3, Evolution of Water Deliveries to Everglades National Park*, <http://www.adaptivemanagement.net/EvolutionofWaterDeliveries.pdf>.

Panhandle area.<sup>65</sup> The volumes were geared to reflect minimum flow characteristics of the 1940s and 1950s. However, in January and February 1983, El Nino required undesirable releases to the Park. This led to congressional authorization of an experimental program, in which the Corps, the District, and the Park explored ways to restore historic flow patterns to the Park. A Letter of Agreement signed in July 1985 provided for an ongoing testing program.<sup>66</sup> This occurred concurrently with a set of agreements between the District and agricultural interests farming an area between the C-111 Canal and the L-31W levee, known as the Frog Pond, in settlement of a lawsuit.<sup>67</sup> The settlement guaranteed lower L-31W levels to increase groundwater drainage during the wet season.<sup>68</sup>

On October 10, 1988, Interim United States Attorney Dexter Lehtinen filed a lawsuit on behalf of the United States to force Everglades restoration. The United States complained that water managed by the District had polluted the Everglades and “resulted in the destruction of lower forms of aquatic life essential to the preservation of the sensitive ecosystems in the [Everglades National] Park and [the Loxahatchee Wildlife] Refuge.”<sup>69</sup> Normally, in large-scale environmental cases, the United States is represented by attorneys from the Environment and Natural Resources Division of the Department of Justice in Washington, D.C. This was an unusual suit.<sup>70</sup> Reportedly, Lehtinen filed suit without going through approved channels.<sup>71</sup> Former Governor Lawton Chiles famously decided to “surrender” in 1991.<sup>72</sup> Administration of the consent decree continues even today. In 2005, Judge Moreno, ruling on a motion by the Miccosukee Tribe (whom Dexter Lehtinen now represents), found the state in violation of the consent decree.<sup>73</sup> The court ordered the special master to hold a hearing and

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65. *Id.* at 1.

66. *Id.*

67. *Id.*; Garcia v. United States, No. 01-801-CIV-MOORE/O’SULLIVAN, 2002 U.S. Dist. LEXIS 27704 (S.D. Fla. May 8, 2002).

68. *Id.*

69. United States v. S. Fla. Water Mgmt. Dist., 28 F.3d 1563, 1568 (11th Cir. 1994).

70. See generally Alfred R. Light, *The Myth of Everglades Settlement*, 11 ST. THOMAS L. REV. 55 (1998).

71. Lisa Gibbs, *Knee-Deep in the Endless Muddy*, MIAMI REVIEW, June 14, 1991, at 13A, 17A (“The newly appointed acting U.S. attorney had told nobody of his plans in advance, Lehtinen says, not even his own bosses in the Justice Department. State water management district officials found out about the suit from reporters’ phone calls. . . . Roger J. Marzulla, then assistant attorney general [for Environment and Natural Resources], summoned him for what one lawyer calls a ‘walk to the woodshed’ on Nov. 7. . .”).

72. *Chiles Admits Everglades Polluted*, ST. PETERSBURG TIMES, May 21, 1991 at 5B (“‘I’m here with my sword,’ the governor said after the pretrial hearing. ‘I want to give the sword to someone. I want to surrender.’”).

73. United States v. S. Fla. Water Mgmt. Dist., 373 F. Supp. 2d 1338 (S.D. Fla.

recommend remedies, emphasizing the need for the parties to propose “*specific acts* to be performed and *specific dates* by when those acts must be completed.”<sup>74</sup>

The Modified Water Deliveries Project (Mod Waters) emerged during the early stages of this litigation when Congress passed the Everglades National Park Protection and Expansion Act in 1989.<sup>75</sup> The basic idea of Mod Waters is that in order to rehydrate parched and overdrained parts of the original Shark River Slough in Everglades National Park, the L-67 levees would be breached to allow flows from the over-flooded Water Conservation Area 3-A to enter the water-deprived Water Conservation Area 3-B and then to continue through new passages under the Tamiami Trail into “Northeast Shark Slough,” south of the trail, a new area to be annexed to Everglades National Park under the Act.<sup>76</sup> Mod Waters primarily consists of three main components, all of which have proved controversial: flood mitigation for the 8 ½ Square Mile Area, raising a section of U.S. 41, and conveyance and seepage control features to pass and control water flows into the Park, which includes a Combined Structural and Operating Plan (CSOP).

The Act provided that “the Secretary of the Army, in consultation with the Secretary [of the Interior], is authorized and directed to construct modifications to the Central and Southern Florida (C&SF) Project to improve water deliveries into the park and shall, to the extent practicable, take steps to restore the natural hydrological conditions within the Park.”<sup>77</sup> To address potential problems with flooding of the residential 8 ½ Square Mile Area, the Act also specifically directed the Secretary of the Army “to construct a flood protection system for that portion of presently developed land within such area.”<sup>78</sup> Instead of authorizing a specific amount to be appropriated for each agency involved, unusually the Act simply authorized “such sums as may be necessary” to carry out Mod Waters.<sup>79</sup> This was unlike typical Corps projects in which the Corps submits specific plans, project designs, cost estimates, and schedules for managing work to the Congress in connection with a request for appropriations. It is also unlike some other federal programs in which the Corps enters into an interagency agreement to construct a project for which the other agency has

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2005).

74. 373 F. Supp. 2d at 1347 (emphasis added).

75. Pub. L. 101-229, 103 Stat. 1946 (1989).

76. LODGE, *supra* note 10, at 248.

77. 16 U.S.C. § 410r-8(a)(1) (2006).

78. 16 U.S.C. § 410r-8(c) (2006).

79. 16 U.S.C. § 410r-6(f)(1) (2006).

principal responsibility. For example, the Corps designed and built many Superfund remedial projects after the U.S. EPA specified a remedial action.<sup>80</sup>

Although the Corps of Engineers is responsible for constructing the modifications under the 1989 Act, the George H.W. Bush administration proposed and received appropriations for the project through the Department of the Interior, under which the National Park Service was the principal intended beneficiary of the project. Over the years, however, the Department of the Interior viewed its role as “consultative,” leaving with the Corps decision-making authority regarding implementation of the projects. The National Park Service, through its South Florida Natural Resources Center, took a lead role in working with the Corps on the modeling and analysis of various project designs and alternatives.<sup>81</sup> The Park Service also collaborated with the Corps on technical and scientific issues concerning the 8 ½ Square Mile Area, which is not on Park property.<sup>82</sup> The U.S. Fish & Wildlife Service, performing its responsibilities under the Fish and Wildlife Coordination Act and the Endangered Species Act, also participated in “consultations” with the Corps.<sup>83</sup>

### 1. *The 8 ½ Square Mile Area*

The saga of the 8 ½ Square Mile Area demonstrates the complex intergovernmental relationships regarding Mod Waters. The Army Corps of Engineers finalized its original design for the 8 ½ Square Mile Area component in 1992. The proposed project included a pump station, a flood mitigation canal, and a levee around the residential area.<sup>84</sup> The National Park Service’s South Florida Natural Resources Center at Everglades National Park responded with a report, completed in 1994, “Restoration of Northeast Shark Slough and Rocky Glades.”<sup>85</sup> The report summarized the hydrologic impacts of the C&SF project that resulted in an increase in

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80. See generally ALFRED R. LIGHT, CERCLA LAW & PROCEDURE § 3.2.7 (1991).

81. Memorandum from P. Lynn Scarlett, Deputy Secretary, Department of the Interior to Earl Devaney, Inspector General, Department of the Interior, Draft Audit Report, Modified Water Deliveries to Everglades National Park 5 (Feb. 6, 2006), reprinted in U.S. DEPARTMENT OF THE INTERIOR, OFFICE OF INSPECTOR GENERAL, REP. NO. C-IN-MOA-0006-2005, MODIFIED WATER DELIVERIES TO EVERGLADES NATIONAL PARK, AUDIT REPORT, app.3, at 30 (Mar. 2006) [hereinafter Scarlett Memo].

82. *Id.*

83. *Id.*

84. See U.S. Army Corps of Eng’rs, *Modified Water Deliveries to Everglades National Park: 8.5 Square Mile Area Flood Mitigation Project, Project Summary*, available at <http://www.saj.usace.army.mil/dp/mwdenp-c111/8-5SMA/docs/projSum.pdf>.

85. Scarlett Memo, *supra* note 81, at 9.

water levels in the western portions of the Shark River Slough while lowering water levels in the eastern portion, including the Rocky Glades, the 8 ½ Square Mile Area, and northern Taylor Slough. Later that same year, Congress amended the Everglades National Park and Expansion Act of 1989 to allow the Federal and State governments to partner financially to acquire additional lands in areas adjacent to the park, including the 8 ½ Square Mile Area, to assist in restoring the Northeast Shark River Slough and historic patterns of water flows from the Park to Florida Bay and to provide for a non-structural solution to the flood mitigation problems in the 8 ½ Square Mile Area.<sup>86</sup> The legislation, supported by the State of Florida, authorized that funds previously appropriated for modified water deliveries could be made available for this purpose.<sup>87</sup>

At the state level, Governor Lawton Chiles formed a committee to study the 8 ½ Square Mile component of Mod Waters. The committee determined that the 1992 project design would not resolve land use conflicts and recommended instead a design called a “flow-way” buffer, which would require the acquisition of the western third of the 8½ Square Mile Area.<sup>88</sup> In 1998, the South Florida Water Management District voted unanimously to support the full acquisition of the 8 ½ Square Mile Area and asked that the Department of the Interior provide funding assistance.<sup>89</sup>

Politics intervened. Jeb Bush was elected governor of Florida in 1998. He abolished Chiles’ Governor’s Commission for a Sustainable South Florida, and in short order appointed different persons to the Governing Board of the South Florida Water Management District.<sup>90</sup> The Governor replaced the District’s executive director.<sup>91</sup> In 1999, the “new” District reversed its 1998 position on

86. 16 U.S.C. § 410r-8 (2006).

87. 16 U.S.C. § 410r-8(k) (2006).

88. Scarlett Memo, *supra* note 81, at 9.

89. *Id.*; Cyril T. Zaneski, *E. Glades Buyout Ordered Wetland Residents Protest Decision*, MIAMI HERALD, Nov. 13, 1998, at 1A.

90. *See Governor’s Commission for the Everglades*, MIAMI HERALD, Nov. 30, 1999, at 3B (effectively substituting new Commission for the Gov. Chiles’s Governor’s Commission for a Sustainable South Florida); Neil Santaniello, *Water District Re-Evaluation Buyout Plan*, SOUTH FLORIDA SUN-SENTINEL, June 23, 1999, at 1B (“With a new water-district board seated since November’s buyout vote — including six member majority appointed by Gov. Jeb Bush — the 8 ½ Area residents now can hope for a change in course.”).

91. *See* Neil Santaniello, *New Water Manager Sails a Steady Course*, SOUTH FLORIDA SUN-SENTINEL, June 26, 1999, at 3B (“Finch also said he aims to eliminate negative outlooks by his 1,894-employee agency, which he described later as ‘shell-shocked’ by recent changes. Among the changes: The firing of Poole by Gov. Jeb Bush’s board appointees over objections of board holdovers chosen by Gov. Lawton Chiles and departures of top agency attorneys.”); Cyril T. Zaneski, *Buyout Lawsuit Bogs Down Everglades Restoration Plan*, MIAMI HERALD, April 6, 1999, at 1B (“The board’s first move was to fire former Executive Director Sam Poole. Among the reasons that Collins cited for Poole’s dismissal was his

the full acquisition of the 8 ½ Square Mile Area and instead asked the Corps to undertake a NEPA review of all alternatives for this component of Mod Waters.<sup>92</sup> The District asked that the Corps consider the alternative of acquiring lands for flood mitigation of the 8 ½ Square Mile Area.<sup>93</sup>

Responding to this inquiry in 2000 (just as Congress was approving CERP), the Corps finalized a revised project design, Alternative 6D.<sup>94</sup> This design was very similar to the 1995 recommendation of the Chiles Committee, before Bush's "reorganization."<sup>95</sup> The District and the Department of the Interior approved the design, and Congress reappropriated \$30 million.<sup>96</sup> This, of course, did not end the controversy, as opponents by then were turning to litigation.

On February 23, 2001, some residents who were unwilling to sell their land in the 8 ½ Square Mile Area filed a case against the Corps. They asserted that the Corps did not have the authority under the Mod Waters authorization to implement a plan that did not protect the entire 8 ½ Square Mile Area from flooding.<sup>97</sup> On July 5, 2002, a district judge adopted an earlier ruling by a federal magistrate that restricted the Corps from veering from its original mandate to protect the entire community from flooding, and prevented the Corps from acquiring land in the 8 ½ Square Mile Area. The case was appealed to the Eleventh Circuit. Litigation thus had halted implementation of Alternative 6D in 2002.<sup>98</sup>

Congress then intervened and resolved all legal issues associated with the litigation by including legislative language in the 2003 Consolidated Appropriations Act.<sup>99</sup> Harkening back to Le-

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handling of the 8 ½ Square Mile issue.”).

92. Scarlett Memo, *supra* note 81, at 39; see Cyril T. Zaneski, *Water Board to Halt Home Buyout*, MIAMI HERALD, Aug. 12, 1999, at 3B (“The water district’s new governing board, with six of nine members appointed by Gov. Jeb Bush, rescinded the full buyout decision of last November to settle a lawsuit by the Miccosukee Tribe.”); Neil Santiello, *Environmentalists Warn of Fight*, SOUTH FLORIDA SUN-SENTINEL, Aug. 12, 1999 (“But that vote, decided by a board appointed by Gov. Lawton Chiles, was rescinded after a six-member majority seated by Gov. Jeb Bush took control this year and decided the earlier vote may not be legally defensible.”).

93. *Id.*

94. See U.S. Army Corps of Eng’rs, *Impact of Implementation of Recommended Plan Alternative 6D for the Comprehensive Everglades Restoration Plan*, [http://www.usace.army.mil/civilworks/hot\\_topics/ht\\_2003/impact\\_of\\_imp.pdf](http://www.usace.army.mil/civilworks/hot_topics/ht_2003/impact_of_imp.pdf) (last visited Dec. 21, 2006).

95. Scarlett Memo, *supra* note 81, at 10.

96. *Id.*

97. See *Garcia v. United States*, No. 01-801-CIV-Moore, 2002 U.S. Dist. LEXIS 27705 (S.D. Fla. July 5, 2002); Pervase A. Sheikh, *Everglades Restoration: Modified Water Deliveries Project*, CRS Report for Congress RS21331, CRS-6 (Updated Aug. 23, 2005).

98. *Id.*

99. Sheikh, *supra* note 97, at CRS-6. The provision in the Consolidated Appropriations Resolution for FY2003 authorized the Corps to implement Alternative 6D as part of Mod Waters. Three conditions were specified: (1) the Corps may acquire residential property needed to carry out Alternative 6D if the owners were first offered comparable property

htinen's original Everglades suit, however, a provision in the FY2004 Interior Appropriations Act created another legal issue — prohibiting appropriations for Mod Waters if the Secretary of the Army, the Secretary of the Interior, the Administrator of the EPA, and the Attorney General indicate in a joint report (to be filed annually until December 31, 2006) that water entering the A.R.M. Loxahatchee National Wildlife Refuge and Everglades National Park does not meet state water quality standards, and if the House and Senate Committees on Appropriations respond in writing disapproving the further expenditure of funds.<sup>100</sup> Over this period of nine years, it is not surprising that land acquisition and construction costs increased substantially.<sup>101</sup> Further appropriations for both the Corps and the Department of the Interior made in 2006 finally permitted the implementation of Alternative 6D to go forward, with \$25 million funded through the Department of the Interior and \$35 million through the Corps.<sup>102</sup>

## 2. Tamiami Trail Component

A second component of the original Mod Waters was the raising of portions of U.S. 41, the Tamiami Trail, particularly the section where it crosses the L-31N canal.<sup>103</sup> The Corps' 1992 General Design Memorandum for Mod Waters, assumed that existing culverts under Tamiami Trail would be sufficient for increased flow under the road. Many challenged this assumption, including the National Park Service. The Corps subsequently prepared hydrological analyses that revealed that high water levels in the L-29 Canal would affect the road base of Tamiami Trail and overtop low areas.<sup>104</sup> This led to a 2003 General Reevaluation Report, ad-

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in the 8 ½ Square Mile Area that would be provided flood protection; (2) the Corps could acquire land from willing sellers in the flood-protected portion of the 8 ½ Square Mile Area to carry out the first condition; and (3) the Corps and the District may carry out these provisions with funds provided under the Everglades National Protection and Expansion Act of 1989 and funds provided by the Department of the Interior for land acquisition in restoring the Everglades. *Id.*

100. See Sheikh, *supra* note 97, at CRS-2; Pervase Sheikh and Barbara Johnson, *Phosphorus Mitigation in the Everglades*, CRS Report for Congress RL2131 (Updated Jan. 13, 2004).

101. *Id.*

102. A provision in the Interior Appropriations Act for FY2006 (Pub. L. 109-54) cites the provisions in the FY2004 Interior Appropriations Act discussed at note 99 *supra* and accompanying text; see Minutes from the Joint Meeting of South Florida Ecosystem Restoration Task Force and Water resources Advisory Commission, Dec. 7, 2005, at 4, *available at* [http://www.sfrestore.org/tf/minutes/2005\\_meetings/7-8dec05tfmtg/dec2005tfmtg.pdf](http://www.sfrestore.org/tf/minutes/2005_meetings/7-8dec05tfmtg/dec2005tfmtg.pdf).

103. See U.S. Army Corps of Eng'rs, Modified Water Deliveries to Everglades National Park and South Dade Canals (C-111) Projects, <http://www.saj.usace.army.mil/dp/mwdenpc111/index.htm> (last visited Dec. 21, 2006) [hereinafter USACOE, Modified Waters site].

104. See U.S. Army Corps of Eng'rs, Public Workshop on Sept. 15, 2005, Modified Water Deliveries to Everglades National Park - Tamiami Trail Modifications, slide 6, *available*

dressing only the Tamiami Trail. Subsequent analyses showed that the 1992 design would have drained the very areas of the Park that Mod Waters was supposed to restore.<sup>105</sup> The 2003 Report recommended a 3,000 foot bridge but did not recommend any further raising along a 10.7 mile length of road that was evaluated.<sup>106</sup> Concerns were raised, however, that the predicted water elevation would damage the road and reduce public safety.<sup>107</sup>

In August 2005, the Corps issued a Revised General Re-evaluation Report that reassessed alternatives, particularly in light of escalating costs. By this time, environmentalists were advocating a very expensive but environmentally preferable bridging of the entire 10.7 mile length of the Project corridor, while the Miccosukee Tribe opposed any bridge at all, preferring that the existing culverts be cleaned.<sup>108</sup> In January 2006, the Corps adopted a middle-of-the-road plan which included: a two-mile bridge on the west, a one-mile bridge on the east, raising the road about two feet in the remainder of the project area, stormwater treatment of water to improve quality, and access ramps.<sup>109</sup> While much less costly than the ten-mile bridge, the project high water design of 9.7 feet, Florida DOT road criteria standards, and the proposed acquisition of many properties along the highway presented considerable controversy for implementation of this design.<sup>110</sup>

### 3. Combined Structural and Operating Plan

The other structural and planning components of Mod Waters have been just as controversial as the 8 ½ Square Mile Area and the Tamiami Trail bridges. As is apparent from the discussion above regarding the controversy of the potential effects of raising the road, scientific disagreements over the effect of water levels and hydrology have plagued the Project over the past two decades.

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at <http://www.saj.usace.army.mil/dp/mwdenp-c111/tamiamiTrail/docs/tamiamiTrail/TTMwokshop.pdf> [hereinafter Tamiami Trail Modifications].

105. Scarlett Memo, *supra* note 81, at 5.

106. Tamiami Trail Modifications, *supra* note 104, at 7.

107. *Id.*

108. John Paul Woodley, Jr., Assistant Secretary of the Army, Record of Decision for Central and Southern Florida Project Modified Water Deliveries to Everglades National Park Tamiami Trail Modifications 3 (Jan. 25, 2006), available at <http://www.saj.usace.army.mil/dp/mwdenp-c111/tamiamiTrail/docs/tamiamiTrail/ttrod060125.pdf>. The Miccosukee Tribe supported the congressional condition that Mod Waters be completed before Decomp should be started. They also viewed advocacy by other interest groups for the "skyway" as inconsistent with this view. A "skyway" in their view would delay Mod Waters. More fundamentally, they expressed concern that "the Water Conservation Areas [in which the Miccosukee Reservation lies] are given second class status" to the Park. See, Maria Dolores Espino, Chair of CSOP Advisory Team, Handout, *Tribe General Concern about CSOP*.

109. *Id.* at 1.

110. Tamiami Trail Modifications, *supra* note 104, at 12.

The National Park Service's mandate is to preserve the Park in "primitive natural conditions."<sup>111</sup> In its view, this should be promoted by allowing water to move more freely into the Park as it did before U.S. 41 was built. But the Fish & Wildlife Service has been concerned that if water flows are not adequately controlled, it could compromise species habit for such endangered animals as the cape sable seaside sparrow. As of 2006, the two Interior Department agencies were unable to agree on optimal water depths. The Fish & Wildlife Service argues that higher water depths proposed by the National Park Service may damage tree islands, but the Park Service disagrees with this assessment.<sup>112</sup>

The remaining cape sable seaside sparrows reside in colonies within Everglades National Park and the Big Cypress Preserve.<sup>113</sup> This sparrow has sometimes been called the "Goldilocks bird" because of its requirement of very precise requirements — not too dry, not too wet.<sup>114</sup> In 1983, in response to high rainfall events, Congress authorized the Corps, in collaboration with the District and the Park, to experiment with deviations from a Minimum Flows and Levels (MFL) that had been developed for Everglades National Park in 1979.<sup>115</sup> The cape sable seaside sparrow was listed as an endangered species in 1967; after Hurricane Andrew in 1992, numbers dropped dramatically.<sup>116</sup> During the 1990s, the Corps experimented with a number of changes to the operating plan for the Central and South Florida Project to avoid jeopardizing the sparrow. The Fish & Wildlife Service prepared a Biological Opinion indicating that the Plan was jeopardizing the sparrow. In September 1999, the Natural Resources Defense Council filed suit against the Corps.<sup>117</sup> These activities led to an Interim Structural and Operational Plan (ISOP) in 1999.<sup>118</sup> NRDC remained

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111. 16 U.S.C. § 410c (2006).

112. U.S. DEPARTMENT OF THE INTERIOR, OFFICE OF THE INSPECTOR GENERAL, MODIFIED WATER DELIVERIES TO EVERGLADES NATIONAL PARK, AUDIT REPORT 8 (Mar. 2006) [hereinafter *OIG Report*].

113. Julie L. Lockwood, et al., *Life History of the Cape Sable Seaside Sparrow*, 109 WILSON BULL. 720 (1997), available at <http://elibrary.unm.edu/sora/Wilson/v109n04/p0720-p0731.pdf>; U.S. Fish & Wildlife Service, South Florida Multispecies Recovery Plan, Cape Sable Seaside Sparrow, available at <http://www.fws.gov/southeast/vbpdfs/species/birds/csss.pdf> (last visited Dec. 21, 2006).

114. Alfred R. Light, *The Myth of Everglades Settlement*, 11 ST. THOMAS L. REV. 55, 67 (1998).

115. *Case Study #3*, *supra* note 64, at 1.

116. U.S. Fish & Wildlife Service, Endangered and Threatened Species of the Southeastern United States (The Red Book), Cape Sable Seaside Sparrow (1995), available at <http://www.fws.gov/endangered/i/b/sab03.html>.

117. Nat. Res. Def. Council v. U.S. Army Corps of Eng'rs, No. 99-2899, 2001 U.S. Dist. LEXIS 21029 (S.D. Fla. 2001).

118. U.S. ARMY CORPS OF ENG'RS, INTERIM STRUCTURAL AND OPERATIONAL PLAN FOR HYDROLOGIC COMPLIANCE WITH THE CAPE SABLE SEASIDE SPARROW BIOLOGICAL OPINION

concerned, however, that the Corps would not follow the “Reasonable and Prudent Alternative” in the ISOP recommendations of the Fish & Wildlife Service. In 2001, however, a magistrate judge gave great weight to the hydrologic experience of the Corps and recommended that no preliminary injunction be issued.<sup>119</sup> After the Corps formally adopted the ISOP, the NRDC moved for voluntary dismissal of its case as moot in 2002. This did not end litigation however. The Miccosukee Tribe had intervened in the NRDC suit, and after it was dismissed, the Tribe filed its own complaint alleging that the Environmental Impact Statement (“EIS”) for the Interim Operational Plan (“IOP”) was inadequate, in part because of impacts on the Everglades snail kite, another endangered species.<sup>120</sup> The NRDC then intervened in the Miccosukee suit, seeking to maintain the benefits of IOP for the western population of sparrows while seeking changes to benefit the eastern population.<sup>121</sup> In 2002, the Fish & Wildlife Service issued a revised Biological Opinion which concluded that releases through the S-12 structures under Tamiami Trail were adversely affecting the sparrows and that changes that were instituted to benefit the sparrows were adversely affecting snail kites.<sup>122</sup> In 2005, the Miccosukee Tribe challenged this amended 2002 Biological Opinion because it did not have an EIS.<sup>123</sup>

Without clear decision-making authority, however, the two principal Interior Department agencies continue to disagree among themselves on important project details. For example, the Fish & Wildlife Service and the Park Service disagree with each other about the effect of water flows into the Park on species habitat and Park restoration and about optimal water depths for Project operations.<sup>124</sup> The Interior Department’s Inspector General concluded in March 2006 that “[c]onflicts surrounding this issue have contributed to the need for multiple re-designs of Project features that determine how water will flow into the Park.”<sup>125</sup>

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FOR THE YEAR 2000, (Dec. 8, 2006), available at <http://www.saj.usace.army.mil/h2o/lib/documents/hw-isop/csss2000m.pdf>.

119. Nat. Res. Def. Council v. U.S. Army Corps of Eng’rs, No. 99-2899, 2001 U.S. Dist. LEXIS 21029 (S.D. Fla. 2001).

120. Miccosukee Tribe v. United States, 420 F. Supp. 2d 1324 (S.D. Fla. 2006).

121. Richard Hamann, *Hot Topics in the Old Swamp: The Role of Public Interest Litigation in Everglades Restoration*, in ENVIRONMENTAL AND LAND USE LAW SECTION ENVIRONMENTAL AND LAND USE LAW: HOT TOPICS, PROJECTS, AND CASES 4.8, 4.14 (2006).

122. U.S. Fish & Wildlife Service, Final Amended Biological Opinion for the U.S. Army Corp of Eng’rs Interm Operational Plan (IOP) for Protection of the Cape Sable Seaside Sparrow (Mar. 28, 2002), available at [http://www.fws.gov/verobeach/species/birds/csss/iop-bo/csss\\_iop\\_bo\\_fin.pdf](http://www.fws.gov/verobeach/species/birds/csss/iop-bo/csss_iop_bo_fin.pdf).

123. Miccosukee Tribes v. United States, 430 F. Supp. 2d 1328 (S.D. Fla. 2006).

124. OIG Report, *supra* note 112, at 8.

125. *Id.*

In 2003, these interagency and stakeholder conflicts spurred the South Florida Ecosystem Restoration Task Force to create an Advisory Team tasked with developing a consensus so that restoration projects could go forward. The Combined Structural and Operation Plan (CSOP) is the combined operating schedule for Mod Waters and the closely related C-111 Project. The CSOP Advisory Team consisted of voting members representing stakeholder interests of residents, recreation, the environment, and agriculture; and non-voting members representing federal, state, local, and tribal entities.

The CSOP facilitation process became a critical path for the overall Everglades restoration effort for several reasons. First, partly as a result of the way the 1988 Everglades lawsuit envisioned restoration (*i.e.* the timely seasonal provision of adequate amounts and quality of water into the Park and the Refuge), “success” required adjustment of flows into these federal properties administered by agencies of the Department of the Interior. This divided the federal interest between the Interior on one side and the Corps, responsible along with the District for management of the water, on the other. The Corps considered its Mod Waters Project to be closely aligned with its project to improve the C-111 canal to the east, so much so that it linked the two projects both in funding and in decision-making.<sup>126</sup> Several of the “critical projects” conditionally authorized by the Water Resources Development Act of 1996 are directed to the restoration of flows to the Park and the Big Cypress National Preserve, such as the construction of 77 culverts along the Tamiami Trail at 30 different locations, the Southern Golden Gate Estates hydrologic restoration in Collier County, and the L-31E Flow Redistribution Project to reestablish freshwater flows into Biscayne Bay.<sup>127</sup> CERP’s components needing congressional approval of the design propose further modifications to the C-111 canal to restore “sheet flow,” *i.e.* the C-111 Spreader Canal, the Decompartmentalization of Water Conservation Areas 3A and 3B, the Picayune Strand (formerly Southern Golden Gate Estates), and related projects.<sup>128</sup> CSOP sets the interim conditions

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126. See USACOE, Modified Water site, *supra* note 103.

127. See U.S. Army Corps of Eng’rs, *Critical Projects*, <http://www.saj.usace.army.mil/projects/index.html> (last visited Dec. 21, 2006).

128. See Official site of CERP, *CERP Projects*, [http://www.evergladesplan.org/pm/projects/project\\_list.aspx](http://www.evergladesplan.org/pm/projects/project_list.aspx) (last visited Dec. 21, 2006) (listing projects that include C-111 Spreader Canal, Picayune Strand (formerly Southern Golden Glades Estates) Hydrologic Restoration, Water Conservation Area 3A Decompartmentalization & Sheet Flow Enhance - Part 1, Water Conservation Area 3A Decompartmentalization. & Sheet Flow Enhance - Part 2, Water Conservation Area 2B Flows to Everglades National Park (ENP), Restoration of Pineland & Tropical Hardwood Hammocks in C-111 Basin, Hydrological Restoration, and Everglades National Park Seepage Management).

for operation of the current structures while these longer term projects are to be designed and constructed over the next decade. Litigation or other “stakeholder” challenges over CSOP had the potential to stall most, or all, of these major components of the restoration.

The CSOP Advisory Team, however, took a while to evolve. In January 2001, at the suggestion of the Council of Environmental Quality (CEQ), the Corps contacted the U.S. Institute for Environmental Conflict Resolution in Phoenix, Arizona, to help facilitate problems associated with Mod Waters.<sup>129</sup> The four agencies involved (the Corps, Everglades National Park, South Florida Water Management District, and U.S. Fish & Wildlife Service) decided that they would consider a collaborative facilitative process for the Combined Structural and Operational Plan (CSOP) contingent on their resolving their differences over the Interim Operational Plan (IOP).<sup>130</sup> Before proceeding with such an innovative approach, however, they commissioned the Institute to conduct an assessment “to find out how stakeholders would react to an invitation to collaborate with them on CSOP.”<sup>131</sup> The Institute was also to “help guide the design of an appropriate multi-stakeholder EIS process.”<sup>132</sup> After conducting interviews with stakeholders, the Institute identified substantive issues needing resolution, and compiled a list of stakeholder suggestions for effective collaboration.<sup>133</sup> The Institute then offered a number multi-stakeholder CSOP Process Design Options.<sup>134</sup> The Corps ultimately decided on a version of the Institute’s Alternative #6, Non-FACA Advisory Body Established by the Task Force’s Working Group.<sup>135</sup> It appointed the Florida Conflict Resolution Consortium at Florida State University (FCRC), and its Director Bob Jones, to facilitate the group.<sup>136</sup> FCRC is a Consortium organized under Florida law for “alternative dispute resolution consensus building.”<sup>137</sup> FCRC

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129. U.S. INSTITUTE FOR ENVIRONMENTAL CONFLICT RESOLUTION, ASSESSMENT OF OPPORTUNITIES FOR MULTI-STAKEHOLDER COLLABORATION ON THE ENVIRONMENTAL IMPACT STATEMENT PROCESS FOR THE COMBINED STRUCTURAL AND OPERATIONAL PLAN FOR MODIFIED WATER DELIVERIES TO EVERGLADES NATIONAL PARK AND C-111 CANAL PROJECTS 12 (Nov. 12, 2002), [http://www.ecr.gov/pdf/everglades\\_final\\_report.pdf](http://www.ecr.gov/pdf/everglades_final_report.pdf).

130. *Id.*

131. *Id.*

132. *Id.* at 13.

133. *Id.* at 22-26.

134. *Id.* at 36-48.

135. *See id.* at 47; South Florida Ecosystem Restoration Task Force, Combined Structural and Operating Plan Advisory Team Charter (Dec. 1, 2003), [http://www.sfrestore.org/issueteams/csop\\_advisory\\_team/CSOP\\_CHARTER.pdf](http://www.sfrestore.org/issueteams/csop_advisory_team/CSOP_CHARTER.pdf) [hereinafter Charter].

136. *See* CSOP - The First Step in Restoring the Everglades, FCRC LEADERSHIP LETTERS 6 (Mar. 2005), [http://consensus.fsu.edu/LeADRship\\_Letters/LLMay06.pdf](http://consensus.fsu.edu/LeADRship_Letters/LLMay06.pdf). Chris Pederson with FCRC was also intimately involved in the facilitation effort.

137. Fla. Stat. § 1004.59 (2006).

facilitated 23 meetings of the CSOP Advisory Team between December 2003 and April 2006.<sup>138</sup> Through facilitation and with close cooperation and modeling support from the Corps and the District, the Advisory Team finally adopted a set of recommendations, mostly consensus recommendations.<sup>139</sup> In May 2006, it submitted the recommendations on a tentatively selected plan (TSP) to the Task Force and, through it, to the Corps.<sup>140</sup>

### *B. Decpartmentalization (“Decomp”) Project*

Decpartmentalization is “the heart of Everglades restoration.”<sup>141</sup> In the initial authorization, Part 1 of the Project was authorized to provide for immediate opportunities to enhance sheetflow within WCA-3, and between WCA-3 and Everglades National Park to its south. Conceptual design features in the Yellow Book included portions of the Miami Canal and increasing conveyance capacity of other canals to compensate for the loss of the Miami Canal, a principal source of drinking water for the City of Miami. It included modifications to the eastern portion of Tamiami Trail and the installation of bridges between the L-31N levee and the L-67 levees. Part 2 later envisioned further modifications of levees and canals to enhance sheetflow.<sup>142</sup> The hydrologic needs and ecological impacts associated with the Decpartmentalization Project are envisioned to influence systems as far away as Lake Okeechobee and Florida Bay.<sup>143</sup> The 2002 Project Management Plan for Decomp noted the linkage between its project design and Mod Waters. “The recommended plan for Modified Water Deliveries Project will partially determine the starting point for additional plan formulation for this project and will be considered the baseline for evaluating benefits of the Decomp Project (the future without project condition).”<sup>144</sup>

WRDA 2000 identified several features of this project for a “conditional authorization.”<sup>145</sup> Tamiami bridges, filling of the Mi-

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138. *See supra* note 136, at 6.

139. CSOP Advisory Team, Tentatively Selected Plan Consensus Recommendations (May 1, 2006), [http://www.sfrestore.org/issueteams/csop\\_advisory\\_team/documents/tf\\_recommendations\\_to\\_army\\_tsp.pdf](http://www.sfrestore.org/issueteams/csop_advisory_team/documents/tf_recommendations_to_army_tsp.pdf). (as submitted by South Florida Ecosystem Restoration Task Force to Hon. John Paul Woodley, Assistant Secretary of the Army, May 18, 2006).

140. *Id.*

141. CERP Project Management Plan, WCA-3A Decpartmentalization & Sheet Flow Enhancement Project - Part 1, 13 (April 2002), [http://www.evergladesplan.org/pm/pmp/pmp\\_docs/pmp\\_12\\_wca/decomp\\_main\\_apr\\_2002.pdf](http://www.evergladesplan.org/pm/pmp/pmp_docs/pmp_12_wca/decomp_main_apr_2002.pdf) [hereinafter *Decomp PMP*].

142. *Id.*

143. *Id.* at 14.

144. *Id.* at 24.

145. *See* Alfred R. Light, *Risk Communication to Enhance Sustainability*, 1 INT’L J. ENVTL, CULTURAL, ECON., & SOCIAL SUSTAINABILITY 95, 99 (2005/2006) (“But conditional

ami Canal, and North New River improvements were authorized, subject to the Corps' subsequent submission of a Project Implementation Report (PIR) to be approved by "the Committee on Transportation and Infrastructure of the House of Representatives and the Committee on Environment and Public Works of the Senate."<sup>146</sup> WRDA 2000 expressly forbade appropriations for the projects in the absence of the approval of these two committees.<sup>147</sup> Acknowledging the link between the projects, Congress also expressly conditioned delayed appropriations "until the completion of the project to improve water deliveries to Everglades National Park . . . ."<sup>148</sup>

Like Mod Waters, the Decomp "heart of Everglades restoration" comes at the geographic intersection of the three CERP goals: environmental restoration, water supply, and flood control. Considerable scientific controversy and uncertainty exists over hypotheses related to ecological function and on the most effective Decomp implementation strategy. Some hypothesize that strategies which foster point source conveyance of water, in deference to sheetflow, will be a more cost effective way to decompartmentalize with minimal risk to developed areas impinging along the borders of the Greater Everglades. Others see the remaining tree islands in the area as a vital resource, in deference to restoring slough habitats, and negatively impacted if historic hydroperiods return. Others see a need to keep canals open to recreational boating and fishing, in contrast to others that view open canals as sediment traps or breeding grounds for exotic fishes.<sup>149</sup> Because of this great variation in perspectives and hypotheses regarding the ecological effects of decompartmentalization approaches, the Decomp Project became the first major project under CERP to proceed under RECOVER's adaptive management strategy rather than the Corps' traditional project design approaches.<sup>150</sup> The Decompartmentali-

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authorization' provisions such as that contained in WRDA 2000 violates established Supreme Court precedent regarding the separation of powers between the Congress and the executive. In other words, the condition cannot be enforced (a committee cannot 'veto' the prior Congress's authorization of the project) under the "legislative veto" precedents of the Supreme Court. To invalidate the prior Congress's authorization of the projects, each entire House of the Congress must approve the invalidation, and the invalidation must be presented to the President as with any ordinary legislation.").

146. WRDA of 2000, § 601(d)(i).

147. *Id.* at § 601(b)(2)(D)(iii).

148. *Id.* at § 601(b)(2)(D)(iv).

149. See Fred H. Sklar et al., *CERP Adaptive Management Application to the Decompartmentalization (Decomp) Project*, in 2006 GREATER EVERGLADES ECOSYSTEM RESTORATION CONFERENCE, PROGRAM & ABSTRACTS 209 (June 5-9, 2006), <http://www.conference.ifas.ufl.edu/geer2006/abstracts.pdf>.

150. See John Ogden et al., Using Adaptive Management to Meet the Challenges of Decompartmentalization: Decomp Adaptive Management Plan (DAMP) slide 2 (April 6, 2006) [https://my.sfwmd.gov/pls/portal/docs/PAGE/PG\\_GRP\\_SFWMW\\_WRAC/PORTLET\\_W](https://my.sfwmd.gov/pls/portal/docs/PAGE/PG_GRP_SFWMW_WRAC/PORTLET_W)

zation Adaptive Management Plan (DAMP) was conceived as a means to find the best method for balancing the restoration, water supply, and flood control goals by combining data mining, historical analysis, physical models, and evaluation tools.<sup>151</sup> Decomp's scientific uncertainties requiring exploration include the ecological effects of levee modification, effects of partial versus complete backfilling of canals, water depth and hydroperiod tolerance of tree islands, quantification of the benefits of sheetflow, assessment of seepage, and the calibration of hydrological models.<sup>152</sup>

To address these uncertainties, WCA-3B was selected as the site of the physical model because its orientation, hydrology, and ecological history addressed the broadest range of questions with the greatest amount of scientific rigor. As the District described the project at the 2006 Greater Everglades Ecosystem Restoration Conference, "[t]he DAMP design will be a hybrid of a repeated measure evaluation of six 3000 ft gaps in the L-67C level in WCA-3 combined with a BACI evaluation of a 12,000 foot flowway."<sup>153</sup> John Ogden reported in April 2006 that "[t]he present design, which is called 'Prius v2' after the hybrid automobile, also attempts to incorporate 'stakeholder concerns' by 'restricting [the] backfilling of canals to the L-67C.'"<sup>154</sup> This means that the project was limited to continue accommodating the desires of recreational bass fishermen who use these canals to fish. Interestingly, bass fishing is an "advantage" of the "altered state" of this portion of the Everglades, which did not exist prior to twentieth century alterations to the ecology of the area. The project was also designed to allow commencement in the 2007 timeframe before the completion of CSOP features.<sup>155</sup> The project permits manipulation through hydrologic pulsing by the CSOP structures, in order to assess the cause while monitoring the effects of the project.<sup>156</sup> The project envisions five years of using the physical model (2007-2011) at a total cost of \$10.3 million in order to support a phased development and implementation of the project implementation report (PIR) for Decomp.<sup>157</sup>

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RAC\_REPORTSDOCS/TAB772049/40606\_OGDEN.PPT#2.

151. *Id.* at 3.

152. *Id.* at 4.

153. Sklar, *supra* note 149, at 209.

154. Ogden, *supra* note 150, at slide 9.

155. *Id.* at 12.

156. *Id.* at 14.

157. *Id.* at 19.

*C. C-111 and C-111 Spreader Canal Projects*

The C-111 and C-111 Spreader Canal projects are located in the extreme southeastern portion of Florida, adjacent to Everglades National Park on its east. C-111 is part of the C&SF flood control system for agricultural lands in South Miami-Dade and provides for the discharge of floodwaters into Taylor Slough in Everglades National Park. It serves a basin of approximately 100 square miles to the west and south of Homestead. Because of the extreme permeability of the Biscayne Aquifer in this area, “the project canals have a direct impact on water levels in adjacent areas.”<sup>158</sup> Thus, the success of other projects such as Decomp depends, in part, on seepage management and the routing, volume, and timing of water supply in the C-111 basin.<sup>159</sup>

Although C-111 has served its flood control purpose admirably, it has presented a number of environmental concerns, including large-scale releases of freshwater to Manatee Bay when storm conditions necessitate flow through the S-197 structure; shortened hydroperiods in the marshes adjacent to C-111 because of overdrainage induced by the canal; prolonged hydroperiods in marshes impounded by levees on the north side of the canal; disruption and redirection of the natural sheet flow over the marsh; and declining fish catches and productivity in northeastern Florida Bay and Barnes Sound that may be associated with the altered freshwater deliveries.<sup>160</sup> The Mod Waters Project thus also contains some modifications to the C-111 canal designed to help the effectiveness of, and experiment with, various water delivery methods for the overall Mod Waters Project.<sup>161</sup>

CERP contains a proposal to reroute flows from the C-111 called the C-111 Spreader Canal Project, one of the ten initial CERP projects conditionally authorized under WRDA 2000.<sup>162</sup> The Corps approved a Project Management Plan (PMP) for this Project in April 2002.<sup>163</sup> But the Project Implementation Report (PIR), which must be approved by two congressional committees, is not expected until September 2007.<sup>164</sup> As envisioned in the PMP, the overall goal of the project is the ecological restoration of the South-

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158. Decomp PMP, *supra* note 141, at 31.

159. *Id.*

160. Brown and Caldwell, Draft Basis of Design Report for the C-111 Spreader Canal Project ES-1 (May 8, 2006), [https://my.sfwmd.gov/portal/page?\\_pageid=54,2146098&\\_dad=portal&\\_schema=PORTAL](https://my.sfwmd.gov/portal/page?_pageid=54,2146098&_dad=portal&_schema=PORTAL) [hereinafter C-111 BODR].

161. USACOE, Modified Waters Site, *supra* note 103.

162. WRDA of 2000 § 601(c).

163. Official Website of CERP, C-111 Spreader Canal Project Summary, [http://www.evergladesplan.org/pm/pmp/pmp\\_docs/pmp\\_29\\_c111/pmp\\_29\\_summary.pdf](http://www.evergladesplan.org/pm/pmp/pmp_docs/pmp_29_c111/pmp_29_summary.pdf).

164. C-111 BODR, *supra* note 160, at ES-1.

ern Glades and Model Lands in extreme southeast Florida, including downstream estuaries, by improving the timing, distribution, quantity, and quality of water deliveries.

In late 2004, the District selected the C-111 Spreader Canal as one of the projects to be expedited with state funding under the Acceler8 program.<sup>165</sup> Working with the Project Delivery Team at the Corps, the District's project managers and its contractor, Brown and Caldwell, decided to divide the C-111 Spreader Canal Project into two phases: Phase 1, to be built under the Acceler8 program, and Phase 2, to be built by the Corps with CERP funding after the PIR was submitted to Congress and funds were received. By folding only Phase 1 into the state program, the District limited its proposed costs to about \$41 million.

The District's Phase 1, approved during the summer of 2006, includes construction of a pump station, construction of a conveyance canal from the C-111 canal to U.S. Highway 1, construction of a spreader canal from U.S. 1 to the L-31E canal, construction of culverts under Card Sound Road, coordination with the Florida Department of Transportation for construction of a bridge where the canal crosses U.S. 1 and installation of culverts under U.S. 1 south of the canal crossing, and enhancement of Ludlum Slough to a wide, shallow flow-way to improve water quality. This would leave for the Corp Phase 2 Project possible construction of a Stormwater Treatment Area and Reservoir in the Frog Pond area, construction of a spreader canal from C-111 canal to U.S. 1, and filling in or plugging of the southern reach of the C-111 canal below the spreader canal to the S-197 structure, and removal of the S-18C and S-197 structures. The District's contractor recommended a particular design of the spreader canal (Alternative 5) because it left the smallest footprint of the alternatives considered, simplified permitting activities by limiting impacts to Florida Power & Light's mitigation wetlands east of U.S. 1, and allowed flexibility for future extension of the canal further to the east. Brown and Caldwell stated that "[p]erhaps most important[] . . . is the fact that Design Alternative 5 is most consistent with the PDT's current planning for a Phase 1 Project."<sup>166</sup> The June 2006 Basis of Design Report contemplated commencement of construction for the Project by November 2007.<sup>167</sup>

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165. *Id.*

166. *Id.* at ES-5.

167. *Id.* at ES-7.

*D. Picayune Strand and "Western" Tamiami Trail Culverts*

Everglades Restoration tales of the Tamiami Trail do not end with Mod Waters, Decomp and the C-111 Projects in the eastern portion of the Everglades affecting Everglades National Park. Consider also the projects along the southwestern portion of the Trail built by Bernard Collier, where there are other public lands of interest in addition to Everglades National Park. As one drives west along U.S. 41, the road curves north from Everglades National Park and cuts into the Big Cypress National Preserve. Past Big Cypress, the Florida Panther National Wildlife Refuge lies north of the highway and Faxahatchee Strand State Preserve lies to the south. Along the Trail, west of Everglades National Park, lies Ten Thousand Islands National Wildlife Refuge, Collier Seminole State Park, and Rookery Bay National Estuarine Research Reserve. In the middle of all these public lands lies the Picayune Strand State Forest, and the newly acquired parcel, known as "Picayune Strand" or, formerly, "Southern Golden Gate Estates."

The Southern Golden Gate Estates (Picayune Strand), 85 square miles in western Collier County, was drained in the early 1960s with the intention of extensive residential development.<sup>168</sup> Here, the Gulf America Corporation built 48 miles of canals and 290 miles of shell-rock roads.<sup>169</sup> These 85 square miles fall in the middle of, and are the "missing piece of the puzzle" for, a huge contiguous span of public lands in the western Everglades.<sup>170</sup> Before the planned residential development failed, roads and four large canals had been constructed. This overdrained the area resulting in a reduction of aquifer recharge (the water table dropped several feet), increased freshwater load discharges to estuaries to the south damaging oyster beds and mangrove forests, invasion of upland vegetation such as cabbage palms, loss of ecological connectivity and associated habitat, and increased frequency of forest

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168. See U.S. ARMY CORPS OF ENG'RS, CERP, PICAYUNE STRAND RESTORATION, FINAL INTEGRATED PROJECT IMPLEMENTATION REPORT AND ENVIRONMENTAL IMPACT STATEMENT 1-1 (Sept. 2004), [http://www.evergladesplan.org/pm/projects/docs\\_30\\_sgge\\_pir\\_final.aspx](http://www.evergladesplan.org/pm/projects/docs_30_sgge_pir_final.aspx) [hereinafter PICAYUNE STRAND PIR].

169. Janet Starnes, *Overview of South Florida Water Management District CERP Projects Under Construction in Southwest Florida*, in 2006 GREATER EVERGLADES ECOSYSTEM RESTORATION CONFERENCE, *supra* note 149, at 217.

170. See PICAYUNE STRAND PIR, *supra* note 168, at Fig. 1-1 (Regional Connectivity Puzzle Map); S. Fla. Water Mgmt. Dist., Water Resources Advisory Committee, Picayune Strand Restoration Project Pump Stations Preliminary Design, slide 4 (Mar. 16, 2006), <http://www.evergladesnow.org> (follow "Projects" hyperlink; then follow "Picayune Strand (SGGE)" hyperlink; then follow "Picayune Strand Restoration: WRAC Issues Workshop Presentation"). Curiously, the Corps refers to the non-public area to the northwest of the Project as "urban development" while the State portrays the same area as "rural development." *Id.*

fires.<sup>171</sup> Runoff that once flowed in a broad, shallow sheet to the coastal estuary was funneled into the Faka Union Canal system.<sup>172</sup>

Florida had almost completed its purchase of the private lands which comprised the Southern Golden Gate Estate in late 2004 when the Governor announced the state's Acceler8 program.<sup>173</sup> In describing how Acceler8 would operate, state officials, in early 2005, looked to the state's project to fill the northern seven miles of the Prairie Canal, the eastern most of four canals in the Southern Golden Gate Estates as a guiding precedent. At that time, the Corps had already finalized a PIR for the full project.<sup>174</sup> For the Prairie Canal, federal officials literally faxed approvals of the project to the District on the date the project was to break ground.<sup>175</sup> The "Prairie Canal" project had been part of each of the alternatives the Corps had developed for the Picayune Strand PIR, so that an early "breakout" of the construction of this portion of the project with state funds became plausible.<sup>176</sup>

The Corps' Chief of Engineers did not approve the Picayune Strand PIR until September 15, 2005, almost a year after the final

171. See PARSONS FOR S. FLA. WATER MGMT. DIST., PICAYUNE STRAND RESTORATION PROJECT, PRELIMINARY DESIGN REPORT-PUMP STATIONS, ES-1 (Mar. 2006), <http://www.evergladesnow.org> (follow "Projects" hyperlink; then follow "Picayune Strand (SGGE)" hyperlink; then follow "Final Preliminary Design Report - Project Pump Stations" hyperlink).

172. Starnes, *supra* note 169.

173. See Press Release, Florida Department of Environmental Protection, *Governor Bush Accelerates Restoration of America's Everglades* (Oct. 14, 2004), [http://www.dep.state.fl.us/secretary/news/2004/oct/1014\\_01.htm](http://www.dep.state.fl.us/secretary/news/2004/oct/1014_01.htm); Jill Barton, *Everglades holdout accepts offer*, HOUSTON CHRONICLE, May 1, 2005, at A15; Jill Barton, *Holdout Will Sell Home in Swamp in Way of Everglades Restoration*, S. FLA. SUN-SENTINEL, Apr. 14, 2005, at 5B; Nicholas Spangler, *When \$4 Million feels like a Rip-off*, MIAMI HERALD, Feb. 3, 2006, at A1, (The most difficult purchase for the state was the 160 acre parcel of Jesse James Hardy, who received \$4.18 million for land he'd paid \$60,000 for in 1976); Eric Staats, *Miccosukees forced to give up land to Glades Restoration*, NAPLES NEWS, May 27, 2005, available at <http://www.uiso.org/content/view/310/52/> (The state completed its acquisition of the project lands, which started in 1983, in 2005 with its purchase of a Miccosukee parcel); Only a few newspaper reporters mentioned Hardy's unpermitted limestone mining operation. See Kelley Benham, *Standing his Ground*, ST. PETE. TIMES, Mar. 1, 2005, at 1E ("He supports his family and pays his lawyers with a sizable limestone mining operation. A couple of hundred trucks run on and off his land every day, hauling \$18 profit each.").

174. See Official Website of CERP, Picayune Strand (Southern Golden Gate Estates) Hydrologic Restoration, [http://www.evergladesplan.org/pm/projects/proj\\_30\\_sgge.cfm](http://www.evergladesplan.org/pm/projects/proj_30_sgge.cfm) (last visited Dec. 21, 2006) [hereinafter CERP Project]; S. Fla. Water Mgmt. Dist, Acceler8, Picayune Strand (Southern Golden Gate Estates) Restoration, <http://www.evergladesnow.org> (follow "Projects" hyperlink; then follow "Picayune Strand (SGGE)" hyperlink) (last visited Dec. 21, 2006).

175. See Press Release, Florida Department of Environmental Protection, *First Project to Restore America's Everglades Bringing Results* (May 19, 2004), [http://www.dep.state.fl.us/secretary/news/2004/may/0519\\_sfwmd.htm](http://www.dep.state.fl.us/secretary/news/2004/may/0519_sfwmd.htm); Press Release, Florida Department of Environmental Protection, *Governor Bush Moving the Earth to Restore Everglades* (Oct. 16, 2003), <http://www.dep.state.fl.us/secretary/news/2003/oct/1016.htm>

176. Barnett Interview, Feb. 7, 2005.

PIR for the project had been prepared.<sup>177</sup> The Chief's letter acknowledged the plugging of the Prairie Canal and installation of culverts under U.S. 41 as items for which the District might receive "credit" under CERP.<sup>178</sup> The Acceler8 Project for Picayune Strand raced ahead. By May 2006, the state was already proceeding with demolition in the Southern Golden Glades Estates area, was well on the way to final designs for road removals, and was preparing a Basis of Design Report for Canals, Roads, and Levee Modifications, part of Phase 2 of the Project.<sup>179</sup> Phase 2 may actually begin as early as August 2006 with the removal of 227 miles of roads. Construction of the three pump stations in Phase 1 should begin in December 2006, and the spreader canals will follow shortly.<sup>180</sup> Thus, even though the PIR for the Project was completed before Florida had even announced its Acceler8 Program in October 2004, the District seemed likely to build the *entire* Project. In other words, federal funds appropriated for Picayune Strand in 2006 based on the November 2004 PIR seemed likely to be shifted to other everglades restoration projects.<sup>181</sup>

Like Mod Waters to the east, the effectiveness of the Picayune Strand Project in restoring the estuarine systems to its south depends on a sound, scientific understanding of ecological effects of changes in the hydrology and a re-engineering of water flows under U.S. 41. "The Western Tamiami Trails Culverts, Phase 1, Project is adding 16 culverts between CR 92 and SR 29."<sup>182</sup> These additional culverts are supposed to "restore the overland flow from north to south and facilitate the movement of sheetflow changes that result from the Picayune Strand Project."<sup>183</sup> The Tamiami Trail Culverts are one of the "critical projects" which Congress authorized in 1996, which envisions the eventual construction of 77 culverts and 30 different locations along the western portion of U.S. 41.<sup>184</sup>

There is considerable scientific uncertainty about how to

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177. Letter from Carl A. Strock, Lt. General, U.S. Army, Chief of Engineers, to Secretary of the Army, (Sept. 15, 2005), [http://www.evergladesplan.org/pm/projects/project\\_docs/pdp\\_30\\_sgge/091505\\_docs\\_30\\_chief\\_final\\_rpt.pdf](http://www.evergladesplan.org/pm/projects/project_docs/pdp_30_sgge/091505_docs_30_chief_final_rpt.pdf).

178. *Id.*, at 4 (*citing* WRDA of 2000 § 601(e)(5)(B)).

179. See Tommy Strowd, Acceler8 Update South Florida Ecosystem Restoration Task Force Meeting (May 17-18, 2006), [http://www.sfrestore.org/tf/minutes/2006\\_meetings/may\\_17,18/Acceler8\\_Update\\_for\\_Task\\_Force\\_Meeting.pdf](http://www.sfrestore.org/tf/minutes/2006_meetings/may_17,18/Acceler8_Update_for_Task_Force_Meeting.pdf).

180. Starnes, *supra* note 169, at 217.

181. This is accomplished through the exercise of the Corps' authority to count towards the state's 50% cost-share of CERP project expenses land value and "in-kind" credit. See WRDA of 2000 § 601(e)(5).

182. Starnes, *supra* note 169, at 217.

183. *Id.*

184. U.S. Army Corps of Eng'n's, Tamiami Trail Culverts, <http://www.saj.usace.army.mil/projects/proj2.htm> (last visited Dec. 21, 2006).

ensure that these changes in the hydrology will improve the situation in the Ten Thousand Islands National Wildlife Refuge. The Refuge has been the subject of considerable scientific study, including quantification of water flows into the refuge, investigation into the dynamics of the marsh-mangrove interface relative to hydrological conditions, and assessing and predicting the impact of hydrologic change to manatee distribution.<sup>185</sup> Considerable uncertainty also exists regarding the current hydrological situation on other public lands in the western Everglades, such as the Florida Panther Wildlife Refuge established in 1989. Since much of the watershed north of the Refuge has been converted to agricultural or residential development, there have been associated hydrological alterations in the undeveloped portions of the landscape as well.<sup>186</sup>

There is also uncertainty about the culverts. The Miccosukee Tribe often expresses the position that bridge construction along portions of Tamiami Trail with existing culverts may be unnecessary if the existing culverts are adequately cleaned out and repaired.<sup>187</sup> To address these uncertainties, the District, the Corps, and the Everglades National Park is cooperating in an effort, funded by the District, called “S-12 Flow-way Maintenance,” to study the effect of cleaning out culverts along the Tamiami Trail. The District selected the S-12D structure along the Old Tamiami Trail for its initial effort “because there are less operational constraints” for the project which consists only of maintenance and vegetation management, not any design or operational modifications.<sup>188</sup> If successful, the program may be expanded to the S-12 culverts in the area. The reason there are “less operational constraints” on the District’s experiment with S-12 is that the District, rather than the Department of the Interior, has control of the land on both sides of U.S. 41 at S-12. As explained at a meeting of the South Florida Ecosystem Restoration Task Force in May 2006, the complex and process-oriented regulations regarding the dredging

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185. Terry J. Doyle, *The Ten Thousand Islands National Wildlife Refuge - Where We've Been, What's Important, and Where We're Going*, in 2006 GREATER EVERGLADES ECOSYSTEM RESTORATION CONFERENCE, *supra* note 149, at 59; Catherine A Langtimm, et al., *Effects of Hydrological Restoration on Manatees: A Research Program to Integrate Data, Models and Long-Term Monitoring Across the Ten Thousand Islands and Everglades*, *id.*, at 126.

186. Michael Duever, *Hydrological Setting of Florida Panther and Ten Thousand Islands National Wildlife Refuges*, in 2006 GREATER EVERGLADES ECOSYSTEM CONFERENCE, *supra* note 149, at 63.

187. See Tamiami Trail Modifications *supra* note 104 and accompanying text (Miccosukee views rejected in Corps letter deciding to construct Tamiami bridges).

188. Susan Sylvester et al., S-12D Flow-way Maintenance, Task Force Meeting (May 18, 2006), [http://www.sfrestore.org/tf/minutes/2006\\_meetings/may17,18/PDF\\_File\\_2006-18May-S12D-TaskF\\_LeRoy.pdf](http://www.sfrestore.org/tf/minutes/2006_meetings/may17,18/PDF_File_2006-18May-S12D-TaskF_LeRoy.pdf).

and disposal activities on Park property made an expeditious experiment on federal property less feasible.<sup>189</sup>

#### IV. REFLECTIONS ON THE CASE STUDIES

Adaptive Management participants learn to treat “management” as a series of experiments to be consciously observed, evaluated and acted upon.<sup>190</sup> The Everglades Restoration Projects which we have surveyed along Tamiami Trail can be viewed as experiments in AM to be evaluated for lessons learned. Put another way, we should reflect on these ongoing projects to see if there are useful generalizations for other ecosystem restoration projects in the Everglades or elsewhere.

The first reflection comes easily to public administrators and is embodied in Rufus Miles’s old adage, “[w]here you stand depends on where you sit.”<sup>191</sup> The perspectives of government agencies and stakeholders in the Tamiami Trail projects reflect the particular interests and missions. For example, the Everglades National Park Act mandates for the National Park Service

said area or areas shall be permanently reserved as a wilderness, and no development of the project or plan for the entertainment of visitors shall be undertaken which will interfere with the preservation intact of the unique flora and fauna and the essential primitive natural conditions now prevailing in this area.<sup>192</sup>

The Corps, however, has been required to deliver water to Everglades National Park according to a schedule and now must balance the values of environmental restoration, water supply, and flood control in its decisions.<sup>193</sup> Mod Waters shows the divergence of the interests of these two federal agencies, perhaps even indicat-

189. Author’s personal observation at the meeting of the South Florida Ecosystem Restoration Task Force, in Hollywood, Florida (May 16-17, 2006). Minutes of the meeting are available online, [http://www.sfrestore.org/tf/minutes/2006\\_meetings/may17,18/May2006tf\\_minutes.pdf](http://www.sfrestore.org/tf/minutes/2006_meetings/may17,18/May2006tf_minutes.pdf).

190. See Adaptive Management, Wikipedia, The Free Encyclopedia, [http://en.wikipedia.org/wiki/Adaptive\\_management](http://en.wikipedia.org/wiki/Adaptive_management) (last visited Dec. 21, 2006) (“Adaptive management . . . is an iterative process of optimal decision-making in the face of uncertainty, with an aim to reducing that uncertainty over time via system monitoring. In this way, decision-making simultaneously maximizes one or more resource objectives and, either passively or actively, accrues information needed to improve future management.”).

191. Rufus Miles, *The Origin and Meaning of Miles’ Law*, 38 PUB. ADMIN. REV. 399, 399-402 (1978).

192. 16 U.S.C. § 410c (2006).

193. WRDA of 2000 § 601(b).

ing institutional biases about scientific issues such as the ecological impact of water levels.<sup>194</sup> While the Department of the Interior now has its Everglades Policy Coordinator to develop a uniform perspective among the Park Service and the Fish & Wildlife Service, no similar dispute resolution mechanism or ombudsmen exists among the other federal agencies involved in the Everglades restoration effort, (e.g. the Corps and EPA). Ironically, only when litigation ensues does the conservatives' darling of the "unitary executive" provide such a mechanism in the form of the Department of Justice's mandate to assert a common position on behalf of "the United States Government."<sup>195</sup>

This contrasts with the strong role of Florida's Governor in Everglades Restoration at the state level.<sup>196</sup> Over the past year, the Secretary of Florida's Department of Environmental Protection and the Executive Director of the South Florida Water Management District have frequently appeared jointly on happy occasions, such as the various groundbreaking for the Acceler8 Projects, and on less happy ones, such as denying Miami-Dade's request for a Consumptive Use Permit contemplating additional water supply from the Everglades.<sup>197</sup> Thus, public servants in the Everglades Restoration effort seem better able to use state institutions as opposed to federal institutions to implement AM projects (e.g. to experiment with culvert maintenance on District land rather than Park land or to quickly contract to commence construction of the C-111 Spreader Canal).<sup>198</sup>

A second reflection concerns the role of public participation. Despite the salute to collaborative and dispute resolution processes in the AM Strategy, the use of such processes is rarely transparent in the Everglades, if these processes are being used at all.<sup>199</sup> Put another way, the AM Strategy's emphasis on "open, inclusive, and integrative" processes is a goal poorly reflected in the case stud-

194. See *supra* notes 80-82, 110-111 and accompanying text.

195. E.g., Robert C. Yale, *Is There An Environmental Lawyer in the House?* FED. LAW., June 2006, at 35, 37 ("However, the Unitary Executive doctrine precludes federal agencies from litigating disputes in the judicial branch.") Christopher Yoo et al., *The Unitary Executive in the Modern Era, 1945-2004*, 90 IOWA L. REV. 601 (2005).

196. See *supra* notes 89-91 and accompanying text.

197. See *The End of South Florida's Free Ride on Everglades water*, MIAMI HERALD, Jan. 29, 2006, at L4; Alan Farago, *Answered Prayer in Florida? Unexpected, Unprecedented Action from Bush*, ORLANDO SENTINEL, Feb. 9, 2006, at A21; Tere Figueras Negrete & Curtis Morgan, *Water Supply puts Crisis on Tap for Dade*, MIAMI HERALD, Jan. 27, 2006, at B1, available at 2006 WLNR 1486315; Press Release, South Florida Water Management District, *Florida Breaks Ground on Fourth Everglades Restoration Project in Less Than Six Months* (June 20, 2006), [http://www.dep.state.fl.us/secretary/news/2006/06/0620\\_02.htm](http://www.dep.state.fl.us/secretary/news/2006/06/0620_02.htm).

198. See *supra* notes 186-188 and accompanying text.

199. See *supra* notes 55-62 and accompanying text.

ies.<sup>200</sup> Recreational bass fisherman influenced the geographic span of the physical model for the Decomp Project.<sup>201</sup> Residents of the 8 ½ Square Mile Area were dissatisfied with the process and sued the Corps over the matter.<sup>202</sup> Airboat operators have had extensive discussions with respect to efforts to raise or bridge-over portions of the Tamiami Trail, a part of the Mod Waters Project.<sup>203</sup> But agency interactions with stakeholders is not transparent to anyone other than the stakeholders and the agencies involved. The obvious textbook example is settlement discussions related to a lawsuit, where both the internal agency discussions about strategy and the negotiation sessions between the parties are confidential. But this observation also applies outside the litigation context. Although the CSOP advisory group was structured to allow for “public comment” at the Advisory Team meetings, there is little indication that the general public or the press showed up to comment.<sup>204</sup> Similarly, stakeholder meetings in the Acceler8 process do not involve any general notice to the public and are thus, by design, outside the general public’s purview. How these stakeholder discussions have influenced the policy process, outside of the relatively formal CSOP Advisory process, is largely unknown. It is a plausible assumption, however, that fairly small groups with intense interests, such as recreational users of the Everglades and environmentalists, have had considerable impact.<sup>205</sup>

This leaves the public and the transparent portions of the stakeholder participation process as a less important feature of CERP’s AM Strategy than would appear on the surface. Efforts with CERP to allow public observation guaranteed by the Programmatic Regulations of the Public Delivery Team meetings responsible for planning CERP Projects, have been abandoned for lack of feasibility.<sup>206</sup> The general public participation process usu-

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200. A leading book on more collaborative approaches to adaptive management, referred to as adaptive co-management, is *NAVIGATING SOCIO-ECOLOGICAL SYSTEMS: BUILDING RESILIENCE FOR COMPLEXITY AND CHANGE* (Fikret Berkes et al. eds., 2003).

201. See *supra* note 154 and accompanying text.

202. See *supra* notes 97-98 and accompanying text.

203. The 1989 Act prohibited airboat use in the Everglades National Park other than airboat tour operators that were operating on January 1, 1989 (i.e. Coopertown Airboat Tours, Gator Park Airboat Tours, and Everglades Safari Park). See 16 U.S.C. § 410r-7(c) (2006).

204. See Charter, *supra* note 135; see generally *Miccosukee Tribe v. Southern Everglades Restoration Alliance*, 304 F.3d 1076 (11th Cir. 2002) (Southern Everglades Restoration Alliance is an “advisory committee” subject to Federal Advisory Committee Act).

205. See *supra* notes 153-157 and accompanying text.

206. See Minutes of South Florida Ecosystem Restoration Working Group 4-5 (Jan. 19-20, 2006), [http://www.sfrestore.org/wg/wgminutes/2006meetings/19,20jan2006/final\\_jan2006\\_wgminutes.pdf](http://www.sfrestore.org/wg/wgminutes/2006meetings/19,20jan2006/final_jan2006_wgminutes.pdf) (“Patrick Hayes said . . . it was unacceptable to go from meeting every other month to no meetings for almost a year and a half was unacceptable.”); CERP Meetings with Public Access, [http://www.evergladesplan.org/pm/public\\_meetings/meetings.aspx](http://www.evergladesplan.org/pm/public_meetings/meetings.aspx);

ally consists of “notice and comment” on various technical and decision-making documents which are already close to final before general public comment is solicited.<sup>207</sup> Even this salute to public participation may be abandoned in the urgency of the moment, as it was with the Prairie Canal portion of the Picayune Strand Project.<sup>208</sup>

A third reflection concerns the connection between the AM Process and “policy decisions by CERP sponsoring agencies.”<sup>209</sup> The AM Strategy would vest the scientific interface of these “policy decisions” in a newly-created entity called the System Planning and Operations Team (SPOT) who are then charged with “Box 3: Management/Science Integration.”<sup>210</sup> To the extent that SPOT is intended to provide a forum for system-wide intergovernmental coordination, it seems to duplicate the role presently being performed by the South Florida Ecosystem Restoration Task Force, at least in conjunction with its Working Group.<sup>211</sup> The AM Strategy vaguely envisions only “comments and input during options development and options analysis” from stakeholders and the public.<sup>212</sup> Thus, direct influence of “policy decisions” would appear outside the AM process altogether, through politics or litigation. This certainly seems true in the case studies. Resolution of the 8 ½ Square Mile Area controversy came about through specific congressional legislation.<sup>213</sup> The process of how this occurred in Congress is not evident from a review of the administrative record. The process through which Decomp Project managers decided to “work around” the interests of the bass fisherman rather than to oppose them is similarly outside the public purview.<sup>214</sup> As were the negotiations leading to the buyout of Hardy, the limestone mining holdout in the Picayune Strand Project.<sup>215</sup> A more candid description of the AM Process would make a more explicit reference to the mechanisms of final “policy” decision-makers, *e.g.* congressional commit-

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Light, *supra* note 18. *Cf.* 33 C.F.R. § 385.18(b) (2006) (guaranteeing advance notice of project delivery team meeting open to the public with opportunity for public comment). The PDTs were structured so as to avoid application of the Federal Advisory Committee Act and Florida Sunshine Act requirements. CERP Guidance Memorandum 011.02, Federal Advisory Committee Act Requirements for CERP Teams (April 28, 2003), [http://www.cerpzone.org/documents/cgm/cgm\\_011.02.pdf](http://www.cerpzone.org/documents/cgm/cgm_011.02.pdf); CERP Guidance Memorandum 034.00, Florida Sunshine Act Requirements (Dec. 18, 2003), [http://www.cerpzone.org/documents/cgm/cgm\\_034.00.pdf](http://www.cerpzone.org/documents/cgm/cgm_034.00.pdf).

207. *Id.*

208. *See supra* notes 173-175 and accompanying text.

209. AM Strategy, *supra* note 23.

210. *Id.*, at 5.

211. *See* Water Resources Development Act of 1996, Pub. L. 104-303, § 528(f) (1996).

212. AM Strategy, *supra* note 23, at 7.

213. *See supra* note 99 and accompanying text.

214. *See supra* notes 153-154 and accompanying text.

215. *See supra* note 173 and accompanying text.

tees, the Governor, or the District's Governing Board. Isolation of the overtly litigious or political dimensions of the process is misleading.

Systematic exploration in the AM Strategy of these critical "outside" decision-making processes could be illuminating. Constitutional lawyers viewing the congressional compromises "conditionally authorizing" projects (subject to the approval of a subsequent Congress' committees) or tying authorizations to executive branch agencies of water quality certifications would find serious separation of powers issues, perhaps even clear violations.<sup>216</sup> The process through which the Governor selected the "eight" Acceler8 Projects, *e.g.* Picayune Strand, C-111 Spreader Canal, for accelerated construction using \$1.8 billion of bonds backed by ad valorem taxes is unknown.<sup>217</sup> The natural scientists running CERP's AM process could use the scholarship of political scientists on these questions.<sup>218</sup>

A fourth reflection concerns ambiguity in the concept of "robustness" in the AM Strategy. A "robust" project under the AM Strategy is one "that can be adapted to uncertain or changing future conditions."<sup>219</sup> This conflates two different phenomena to which a manager must adapt: (1) changes in the assumptions and reduction of the uncertainty about the ecosystem resulting from the "learning by doing" AM approach and (2) changes in the environment external to the Everglades Restoration AM process, or assumptions about those changes, beyond overt AM experimentation. For example, there may be adaptations in the C-111 Spreader Canal Project because of new learning about the extent of agricultural contamination, hydrological connections, or vegetative responses to increased water levels.<sup>220</sup> There could also be ad-

216. *See supra* note 145 and accompanying text.

217. *E.g.* Minutes of South Florida Ecosystem Restoration Working Group Meeting 3 (Oct. 28, 2004), [http://www.sfrestore.org/wg/wgminutes/2004meetings/28,29oct04/final\\_wg\\_minutes.pdf](http://www.sfrestore.org/wg/wgminutes/2004meetings/28,29oct04/final_wg_minutes.pdf) (Terry Rice complaining on behalf of Miccosukee Tribe that the District went "behind closed doors to come up with a new plan" for accelerating financing).

218. Political scientists have long described the actual policymaking process often used in the presence of complexity and uncertainty as "disjointed incrementalism." *E.g.*, D. BRAYBROOKE AND CHARLES E. LINDBLOM, *A STRATEGY OF DECISION* (1963); JAMES W. FESLER & DONALD F. KETTL, *THE POLITICS OF THE ADMINISTRATIVE PROCESS* (1991); CHARLES E. LINDBLOM, *THE INTELLIGENCE OF DEMOCRACY* (1965); JEFFREY L. PRESSMAN & AARON B. WILDAVSKY, *IMPLEMENTATION* (1973); AARON B. WILDAVSKY, *THE POLITICS OF THE BUDGETARY PROCESS* (1964); John Forester, *Bounded Rationality and the Politics of Muddling Through*, 44 *PUB. ADMIN. REV.* 23 (1984); James W. Fredrickson & Anthony L. Iaquinto, *Inertia and Creeping Rationality in Strategic Decision Processes*, 32 *ACAD. OF MGMT. J.* 516 (1989); Charles E. Lindblom, *The Science of Muddling Through*, 19 *PUB. ADMIN. REV.* 79 (1959); Charles E. Lindblom, *Still Muddling, Not Yet Through*, 39 *PUB. ADMIN. REV.* 517 (1979).

219. AM Strategy, *supra* note 23, at 1.

220. The death of birds at Lake Apopka has sensitized the District to the need to as-

aptations because of changing land use from agricultural to urban or increased traffic on U.S. 1 and Card Sound Road or for sea-level rise resulting from global warming.<sup>221</sup> Robust experimental designs within CERP are possible for the first, but only quasi-experimental designs or modeling is possible for the second type of change.<sup>222</sup>

“Robustness” in these case studies along the Tamiami Trail largely translates into a form of incrementalism.<sup>223</sup> Initial tentative steps collect information which then feeds into subsequent steps. The Programmatic Regulation’s model of a single feasibility study leading to a single selection of an alternative in the PIR is not what actually occurs.<sup>224</sup> Instead, projects are “phased” or divided into parts with separate PIRs, so that later phases can take advantage of learning in the earlier phases, and respond to limitations in available funds in any particular year.<sup>225</sup> The separate PIRs may trigger supplemental EISs or even new NEPA environmental assessments.<sup>226</sup> This is the inevitable consequence of mar-

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sess potential effects of agricultural chemicals on lands being converted to reservoirs. See South Florida Water Management District, Pre-Acquisition Environmental Assessment Process, Identification of Residual Agrochemicals Resulting from Current or Historical Agricultural Activities, Corrective Actions and Ecological Risk Assessment (April 20-21 2006), <http://www.sfrestore.org/wg/wgminutes/2006meetings/20,21apr2006/ResidualAgrochemicals.pdf>. See also Steve Patterson, *Lake Apopka: An Environmental Tragedy*, FLORIDA TIMES-UNION, Feb. 27, 1999, [http://www.jacksonville.com/tu-online/stories/022799/met\\_2a1apopk.html](http://www.jacksonville.com/tu-online/stories/022799/met_2a1apopk.html) (describing Lake Apopka bird kill).

221. *E.g.*, Natural Resources Defense Council, *How Global Warming Will Affect Floridians*, <http://www.nrdc.org/globalWarming/flaeffects/effect6.asp> (last visited Dec. 21, 2006); Dan Vergano, *Sea change coming for the Everglades*, USA TODAY, May 30, 2006, available at [http://www.geo.utexas.edu/climate/NEWS/May31\\_2006.htm](http://www.geo.utexas.edu/climate/NEWS/May31_2006.htm); Mongabay.Com, *Invasive species may increase with global warming* (Oct. 13, 2005), <http://news.mongabay.com/2005/1013-invasive.html>.

222. See generally DONALD T. CAMPBELL & JULIAN C. STANLEY, EXPERIMENTAL AND QUASI-EXPERIMENTAL DESIGNS FOR RESEARCH (1963).

223. See *supra* note 219 and accompanying text.

224. The PIR process is set forth at 33 C.F.R. § 385.26 (2006).

225. For example, there was a supplemental environmental impact statements for the Indian River Lagoon- South Project, and the Water Preserve Areas Feasibility Study. IRL-South Final Project Implementation Report (PIR) (Mar. 2004), [http://www.evergladesplan.org/pm/studies/irl\\_south\\_pir.cfm](http://www.evergladesplan.org/pm/studies/irl_south_pir.cfm); Draft Feasibility Report and Supplemental Environmental Impact Statement (SEIS): Water Preserve Areas Feasibility Study (Oct. 2001), [http://www.evergladesplan.org/pm/studies/wpa\\_report.cfm](http://www.evergladesplan.org/pm/studies/wpa_report.cfm). The Everglades Agricultural Area (EAA) Storage Reservoir is being phased. See Everglades Agricultural Area (EAA) Storage Reservoir (Phase-1), [http://www.evergladesplan.org/wrda2000/ini\\_proj/eaas\\_storage\\_res.aspx](http://www.evergladesplan.org/wrda2000/ini_proj/eaas_storage_res.aspx) (last visited Dec. 21, 2006). Similarly, the environmental assessment for Picayune Strand was divided into phases; see Picayune Strand (Southern Golden Gate Estates) Hydrologic Restoration: Integrated Project Implementation Report (PIR)/ Environmental Impact Statement (Nov. 2004), [http://www.evergladesplan.org/pm/projects/docs\\_30\\_sgge\\_pir\\_final.cfm](http://www.evergladesplan.org/pm/projects/docs_30_sgge_pir_final.cfm).

226. The subject of post-decision supplemental environmental impact statements is not expressly addressed in NEPA but is at times needed to satisfy the Act’s purpose. See *Marsh v. Oregon Nat. Res. Council*, 490 U.S. 360, 370-71 (1989); see also *Wisconsin v. Weinberger*, 745 F.2d 412 (7th Cir. 1984) (court will determine whether or not the new information presents a seriously different picture of the likely environmental consequences of

rying a “notice and comment” legal regime under WRDA 2000 and NEPA with the AM concept.<sup>227</sup> Even if adaptations cannot be “continuous” as AM ideally envisions, incremental staging of projects has been a reality.<sup>228</sup> Thus, Mod Waters and Decomp encompass experimental designs prior to the later stages of construction.<sup>229</sup> Picayune Strand will build upon learning associated with the filling of the Prairie Canal.<sup>230</sup> Maintenance of the S-12 culverts will build upon the learning associated with the S-12D clean-out experience.<sup>231</sup>

As a fifth reflection, we might ask a larger question related to these observations. As Professor Ruhl at Florida State University recently queried, “Regulation by Adaptive Management - Is It Possible?”<sup>232</sup> “In short,” he explains, “in order for adaptive management to flourish in administrative agencies, legislatures must empower them to do it, interest groups must let them do it, and the courts must resist the temptation to second-guess when they do in fact do it.”<sup>233</sup> The basic problem is that the conventional administrative law system is geared to “command and control,” where activity is regulated using permits that target emissions or discharges for limitation. During the permit period, changes in the terms are not anticipated — *i.e.* no adaptation based on learning by doing is allowed. Greg Knecht, a Florida DEP official responsible for permitting CERP projects explains,

Traditionally, permits for the construction and operation of water resources projects are issued based upon the anticipated environmental impacts of construction and subsequent operation. Much of the understanding about project effects is garnered from interpreting results of predicting modeling. Yet, often these permits specify conditions that will govern

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the proposed action not adequately envisioned by the original EIS); *Sierra Club v. Froehlke*, 816 F.2d 205 (5th Cir. 1987) (information produced and used by the Corps that does not seriously change the environmental picture, but that nevertheless affects, or could affect, the decisionmaking process, is subject to the procedural requirements of NEPA).

227. WRDA of 2000, § 601(h)(4)(A)(iii)(III) (requiring PIRs to “comply” with NEPA); Preamble to the Programmatic Regulations, 68 Fed. Reg. 64200, 64216-17 (Nov. 12, 2003) (describing compliance with NEPA under CERP); *cf.* *Seattle Audubon Soc. v. Lyons*, 871 F. Supp. 1291, 1311 (W.D. Wash. 1994) (“Given the current condition of the forests, there is no way the agencies could comply with the environmental laws without planning on an ecosystem basis.”).

228. *See supra* notes 35-43 and accompanying text.

229. *See supra* notes 63-157 and accompanying text.

230. *See supra* notes 172-79 and accompanying text.

231. *See supra* notes 187-189 and accompanying text.

232. J.B. Ruhl, *Regulation by Adaptive Management - Is It Possible?* 7 MINN. J. L., SCI., & TECH. 21 (2005).

233. *Id.* at 31.

a project for years. An AM approach to the permitting process would recognize uncertainty and would allow permits to be issued with the understanding that as knowledge increases about the specific construction and operation of a water resources project, the permit would be flexible enough to address these changes.<sup>234</sup>

Both CERP and Florida law require that CERP projects be in compliance with regulatory requirements. The Programmatic Regulations require the Corps in a PIR to “comply with all applicable Federal, State, and tribal laws.”<sup>235</sup> The State of Florida, in turn, has linked the participation in a CERP project by the non-federal sponsor (the District) to specific findings regarding a PIR. Florida Statutes, sec. 373.1501 requires the District to convene a “preapplication conference with all state and federal agencies with applicable regulatory jurisdiction.”<sup>236</sup> The District must “[d]etermine with reasonable certainty that all project components are consistent with applicable laws and regulations, and can be permitted and operated as proposed.”<sup>237</sup> The District determination in this regard is subject to the approval of the Florida Department of Environmental Protection (DEP) “[b]efore any project component is submitted to Congress for authorization or receives an appropriation of state funds.”<sup>238</sup> State law also requires the District to prepare its own project implementation report “[p]rior to executing a project cooperation agreement with the Corps for the construction of a project component.”<sup>239</sup> Significantly, judicial challenges are postponed until DEP acts to approve the project during the first phase since CERPRA declares that actions by the District under step one do not constitute “final agency action.”<sup>240</sup>

CERPRA permitting, like the federal NEPA process, follows a traditional administrative law structure, which exhibits a considerable tension with the “learning by doing” and continuous feedback which the CERP AM Strategy contemplates. AM contemplates that a complicated “compliance” metric, where simple comparison of discharges against an effluent limitation are not,

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234. Greg Knecht & Tom St. Clair, *Comprehensive Everglades Restoration Plan (CERP) Regulatory Permitting Adaptive Management Application*, in 2006 GREATER EVERGLADES ECOSYSTEM RESTORATION CONFERENCE, *supra* note 149, at 121.

235. 33 C.F.R. § 385.26(a)(3)(iii) (2006).

236. Fla. Stat. § 373.1501(5)(c) (2006).

237. *Id.*

238. Fla. Stat. § 373.026(8)(b) (2006).

239. Fla. Stat. § 373.470(3)(c) (2006).

240. Fla. Stat. § 373.1501(8).

and should not be, considered sufficient.<sup>241</sup> From an administrative law point of view, the analogous model is probably the consent order or consent decree, in which an administrator or judge assesses whether a regulated party is performing adequately enough in order to bring itself into ultimate compliance after violations have been found, have been conceded, or are assumed.<sup>242</sup> Administration of such an administrative or judicial “settlement,” however, anticipates the existence of a neutral administrator or judge who may resolve conflicts on an equitable basis if and when the parties are unable to agree. Despite the continuing jurisdiction of the federal court arising out of the 1988 lawsuit on limited water quality issues, there is no equivalent court or “special master” for the overall effort to restore the Everglades.<sup>243</sup> Judicial review is diffused.<sup>244</sup>

Finally, however, let us end with an observation about the person who began the Tamiami Trail, Barron Gift Collier. After purchasing 1.3 million acres in what later became Collier and Hendry counties, the streetcar advertising magnate envisioned the Trail connecting his vast holdings from Miami to Tampa.<sup>245</sup> Even today, his family’s company develops parcels of this land, *e.g.* breaking ground February 17, 2006, on the new town of Ave Maria, Florida, near Naples,<sup>246</sup> exploits oil fields,<sup>247</sup> and continues vegetable farming, packing and marketing, citrus production, and cattle ranching.<sup>248</sup> Much of the Big Cypress National Reserve,

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241. The AM search is for an alternative to such prescriptive regulation, *e.g.* market-based programs, information-based programs, negotiated project-specific licensing, ecosystem-scaled land management programs, multi-party collaborative planning efforts, or government-private quasi-partnerships. See Ruhl, *supra* note 232 at 25-26. “In short, the decentralized nature of the second generation instruments of regulation allows agency policies and decisions to be implemented more adaptively, which, it is reasonable to believe, will facilitate a more responsive, flexible continuum of reactions to the future’s amorphous regulatory challenges.” *Id.* at 27.

242. Prior to enactment of CERCLA, during the Carter Administration, cleanup of hazardous waste sites proceeded mainly through a series of injunction suits under authorities such as RCRA § 7003, which contemplated judicial supervision of a mandatory injunction or any consent decree arising out of the suit. These very general authorities granted the courts wide latitude in tailoring the injunctive relief to the precise circumstances on the ground. See generally Susan Verdichio, *Environmental Restoration Orders*, 12 B.C. ENVTL. AFF. L. REV. 171 (1985).

243. See *supra* notes 69-74 and accompanying text.

244. See generally Alfred R. Light, *The Waiter at the Party: A Parable of Ecosystem Management in the Everglades*, 36 ENVTL. L. REP. (forthcoming Oct. 2006); Light, *supra* note 62, at 116-23, 128.

245. See *supra* note 7 and accompanying text; Barron Collier Partnership, History, <http://barroncollier.com/History/HistoryFrameSet.htm> (last visited Dec. 21, 2006).

246. See Ave Maria, Florida, <http://www.avemaria.com> (last visited Dec. 21, 2006).

247. See Barron Collier Partnership, Minerals, <http://barroncollier.com/Minerals/MineralFrmSet1.htm> (last visited Dec. 21, 2006).

248. See Barron Collier Partnership, Agriculture, <http://barroncollier.com/Agriculture/AgFrameSet.htm> (last visited Dec. 21, 2006).

Florida Panther Wildlife National Refuge, and Ten Thousand Islands National Wildlife Refuge belonged to Collier, and his family's retention of oil and mineral rights on these lands sparks controversy today.<sup>249</sup> Everglades Restoration is, in part, the reassembly and reconnection of conservation lands along the western portion of the Tamiami Trail which Collier once ruled.<sup>250</sup> Ecosystem rehabilitation seems more plausible as one moves west out of the political morass of the 8 ½ Square Mile Area and Decom Projects in Miami-Dade, the portion of the Trail Jaudon built, and into the Big Cypress Basin where Collier used to reign. Barron Gift Collier continues to shape the Everglades along his portion of the Tamiami Trail.

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249. See National Park Service, Big Cypress Preserve Acquisition of Collier Resources Mineral Rights (May 29, 2002), <http://www.nps.gov/bicy/qnaoil.pdf>; Press Release, Public Employees for Environmental Responsibility, *The Immaculate Scandal: Big Cypress Oil Scammers Go Scot-Free* (June 23, 2005), [http://www.peer.org/news/news\\_id.php?row\\_id=541](http://www.peer.org/news/news_id.php?row_id=541).

250. Existing and proposed conservation lands in the Big Cypress Basin - Estero Bay Region spanning Collier, Lee, Hendry, Miami-Dade, and Monroe Counties spans 2,800 square miles and includes Big Cypress National Preserve, Big Cypress Seminole Indian Reservation, Collier Seminole State Park, Corkscrew Regional Ecosystem Watershed (CREW), Corkscrew Swamp Sanctuary, Estero Bay Aquatic Preserve, Everglades National Park, Fakahatchee Strand Preserve, Florida Panther National Wildlife Refuge, Koreshan State Park, Lake County Park Miccosukee Indian Reservation, Okaloacoochee Slough, Picayune Strand State Forest, Rookery Bay National Estuarine Research Reserve, Six-Mile Cypress, and Ten Thousand Islands National Wildlife Refuge. See Big Cypress Basin - Estero Bay Regional Research Database Project, <http://ocean.floridamarine.org/bcboverview.htm> (last visited Dec. 21, 2006).