STATE OF FLORIDA
DIVISION OF ADMINISTRATIVE HEARINGS

COLLIER CATTLE CORPORATION, and TROPICAL RANCH PROPERTIES, INC.,	)	
Petitioners,	)	
and	)	
WALTER R. SHAW, SR.,	)	
Intervenor,	)	
vs.	)	Case No. 97-1682
SOUTH FLORIDA WATER MANAGEMENT DISTRICT and DEPARTMENT OF ENVIRONMENTAL PROTECTION,	)	
Respondents.	)	

RECOMMENDED ORDER

Robert E. Meale, Administrative Law Judge of the Division of Administrative Hearings, conducted the final hearing in Naples, Florida, on August 12, 13, 28, and 29, October 1, 2, 8, and 9, November 13, 14, 17, 18, and 19, 1997, and January 6, 7, and 8, 1998.

APPEARANCES

For Petitioners: James W. McDonald, Jr.
McDonald & Associates
Community Plaza, Suite 306
15600 Southwest 288th Street
Homestead, Florida 33030

A. Glenn Simpson
Qualified Representative
5961 22d Avenue Southwest
Naples, Florida 34116

For Respondent South Florida Water Management District:

Marcy I. LaHart
Associate Attorney
South Florida Water Management District
3301 Gun Club Road
West Palm Beach, Florida 33416-4680

For Respondent Department of Environmental Protection:

Francine M. Ffolkes
Assistant General Counsel
Department of Environmental Protection
Mail Station 35
3900 Commonwealth Boulevard
Tallahassee, Florida 32399-3000

For Intervenor Walter R. Shaw, Sr.:

Walter R. Shaw, Sr., pro se
1400 Northwest 62nd Avenue
Sunrise, Florida 33313-6138

For Intervenor Clifford L. Fort:

Cliffort L. Fort
8410 Northwest 16th Street
Pembroke Pines, Florida 33024

STATEMENT OF THE ISSUE

The issue is whether Respondent South Florida Water Management District is entitled to an environmental resource permit from Respondent Department of Environmental Protection to construct a weir in Collier County on the Merritt Canal about 3600 feet south of Interstate 75 for the purpose of extending the hydroperiod on the Florida Panther Federal Wildlife Refuge.

PRELIMINARY STATEMENT

Respondent South Florida Water Management District applied to Respondent Department of Environmental Protection

for an environmental resource permit to construct a weir in the Merritt Canal to be operated by the water management district. On January 29, 1997, Respondent Department of Environmental Protection issued a Notice of Intent to Issue with several general and specific conditions. During the hearing, the department attached new monitoring conditions to the draft permit.

Petitioners timely challenged the intended agency action and demanded a formal hearing. The administrative law judge granted the petitions to intervene of both Intervenors.

The court reporter filed the final portion of the transcript on February 2, 1998.

The administrative law judge specifically finds that, based on his presentation of Petitioners' case, Mr. Simpson is a qualified representative for the purpose of representing other parties in administrative hearings before the Division of Administrative Hearings. The administrative law judge denies Mr. Shaw's post-hearing request for summary relief.

FINDINGS OF FACT

I. Proposed Permit

1. On April 17, 1996, Respondent South Florida Water Management District (District) filed with Respondent Department of Environmental Protection (DEP) an application for the construction of a water-control structure in the

Merritt Canal. The stated purpose of the structure, which is a weir, is to extend the hydroperiod of the Lucky Lake Strand.

2. The application states that the District is the owner of a drainage easement covering the land proposed as the site of the weir. According to the application, Collier County, in which the Merritt Canal lies, originally held the drainage easement. The District later adopted the Merritt Canal as a "Works of the District," which transferred operational responsibility for the canal from the County to the District. (A sub-unit of the District, the Big Cypress Basin Board has jurisdiction for District projects of the type involved in this case. References to the District shall include the Big Cypress Basin Board.)

3. The application requests a permit to construct an adjustable sheet-pile weir within the 80-foot Merritt Canal right-of-way. The application accurately describes the Merritt Canal as a Class III waterbody that is not an Outstanding Florida Water.

4. By Notice of Intent to Issue Environmental Resource Permit dated January 29, 1997 (NOI), DEP proposed to issue an environmental resource permit (ERP) to the District for the construction of the Lucky Lake Strand Water Control Structure. The structure would be an adjustable weir with operating levels of 7.0 feet National Geodetic Vertical Datum (NGVD) in the wet season and 9.5 feet NGVD in the dry season.

5. As stated in the NOI, the Merritt Canal is 12 miles long and one of four main north-south canals within a larger system of 183 miles of canals--all Class III waters--constructed in the 1960s by Gulf American Land Corporation to drain wetlands for development of the Southern Golden Gate Estates area. These four north-south canals drain water south through the Faka Union Canal and into Faka Union Bay, which is part of the 10,000 Islands/Cape Romano Aquatic Preserve. The preserve contains Class II Outstanding Florida Waters.

6. The NOI notes that the U.S. Fish and Wildlife Service (FWS) and District entered into an agreement in September 1994 to construct two weirs in the Merritt Canal "to partially restore historic hydroperiods into two major wetland features within the federally owned lands of the USFWS Florida Panther National Wildlife Refuge, Lucky Lake Strand and Stumpy Strand (Class III Outstanding Florida Waters)." As stated in the NOI, these federally owned wetlands constitute over 3000 acres of cypress and mixed swamps, wet prairies, marshes, and ponds.

7. The NOI relates that FWS staff proposed the project to counteract "subtle vegetational changes and accelerated pond draw-downs [that] were taking place in the strands as a result of shortened hydroperiods caused by a three-year drought, I-75 widening activities, and subsequent canal modifications."

8. The NOI correctly states that water in the wet season historically flowed southerly through Stumpy Strand, Lucky Lake Strand, and Picayune Strand, before entering the larger Fakahatchee Strand. Lucky Lake Strand narrows to 1000 feet at its south end, which is at Interstate 75 (I-75).

9. The NOI accurately asserts that the construction of the Merritt Canal and the I-75 borrow canals combined to draw down the upstream wetlands, thus reducing their hydroperiods. The effect of the Merritt Canal is reportedly significant because of its confluence with the southern tip of Lucky Lake Strand.

10. The NOI discloses that the original agreement between the District and FWS called for the construction of two weirs south of I-75, one at the headwaters of the Merritt Canal and another about 1800 feet downstream in the Merritt Canal. However, the proposed permit eliminates one weir, whose function was performed by plugs in the north I-75 borrow canal, and relocates the remaining proposed weir about 3600 feet south of I-75, rather than immediately south of I-75, reportedly because of difficulties in accessing the proposed weir at I-75.

11. The NOI states that the Merritt Canal is within the 80-foot drainage easement originally acquired by Collier County. The uplands adjacent to the weir are reportedly owned by DEP.

12. The NOI describes the proposed weir as a sheet pile weir with adjustable partitions. As proposed, during the wet season, the District would start to open the gates at 7 feet NGVD and start to close them at 6.5 feet NGVD. During the dry season, the District would start to open the gates at 9.8 feet NGVD and start to close them at 9.3 feet NGVD. Also, the proposed permit would anticipate that the District would dredge the canal to a trapezoidal cross-section having a bottom elevation of -1.5 feet NGVD and a width of about 49 feet at the weir and transitioning to 20-foot bottom widths upstream and downstream of the weir.

13. According to the NOI, the purpose of the proposed weir is

> to reduce over-drainage of the upstream wetlands in Lucky Lake and Stumpy Strands by extending the hydroperiod further into the dry season. No increase in water levels during the wet season is expected. Although the historic extended hydroperiod is not expected to be achieved, the weir structure is expected to improve current conditions to the upstream wetlands. Holding back water in these wetlands [is] also expected to improve water quality downstream by removal of excess nutrient, sediments, and chemicals. Wildlife values are expected to be enhanced in preferred waterfowl and wading bird habitat, including areas for the endangered wood stork and threatened bald eagle. Forage areas are also expected to be improved for white-tailed deer and other wildlife species which are essential prey for the endangered Florida panther. Aquifer recharge is also expected as the ground water reserves will be raised by raising the canal water levels, while maintaining

> the existing level of flood protection for adjacent private landowners.

14. The NOI states that FWS will monitor post-construction environmental conditions and will recommend to the District adjustments to the weir elevations. The NOI reports that the District will be the "main operator" of the weir to adjust elevations to maintain flood control for adjacent lands. The NOI adds:

> The project was designed so as not to decrease the peak discharge capacity in the canal or increase flood stages in the Upper Merritt Canal watershed. Hydraulic modeling by the District indicates that there will be no additional surface water flooding to private property as a result of the project, and the current level of service will be maintained.

15. Based on this analysis, the NOI concludes that the District has provided reasonable assurance that the proposed activity will comply with Part IV, Chapter 373, Florida Statutes, and the underlying rules, including Chapter 62-330 and Rules 40E-4.301 and 40E-4.302, Florida Administrative Code. The NOI states that the District has demonstrated that the activity is clearly in the public interest, pursuant to Section 373.414(1)(a), Florida Statutes.

16. The proposed permit conforms to the NOI's description. Specific Condition 13 sets the fixed crest of the proposed weir at 4.5 feet NGVD and the width of the weir at 48 feet.

17. Although the proposed permit is nowhere explicitly conditioned on a successful wetland enhancement project, Specific Condition 12 states that "the" wetland enhancement project shall be considered successful if, after five years, Lucky Lake Strand and Stumpy Strand display wetland-appropriate vegetation and the "viability of adjacent upland sites [is] not negatively impacted by increased ground water or surface water levels resulting from the authorized project."

18. Specific Condition 17 requires the District to document the operation of the gates and notify DEP, within three days, whenever any of the permitted elevations are exceeded. Annually, the District must supply DEP detailed data and analysis of the operational history of the weir, including "reasons for going to nonstandard operation and a narrative description of the effectiveness of initiating the nonstandard operation to include areas not flooded (or flooded, if applicable) and other associated impacts."

19. During the final hearing, the District proposed, and DEP approved, a modification of Specific Condition 18. As modified, Specific Condition 18 requires the District to "monitor the effects of the operation" of the weir, pursuant to the revised monitoring plan incorporated by reference into this condition.

20. The revised monitoring plan, which is dated

November 12, 1997, alters the original monitoring plan by adding two sites for the installation of water-table wells. One of the new sites (Site A) is 1200 feet north of the weir, and the other new site (Site B) is 1200 feet north and 2000 feet west of the weir. These are the only water-table monitoring devices.

21. Five other sites are surface-water monitoring sites. Three of the these sites are in the Merritt Canal: one immediately upstream of the weir, one immediately downstream of the weir, and one farther upstream at I-75. The other two surface-water monitoring sites are farther upstream. One is in Lucky Lake about 1.75 miles north of the weir, and the other is about three miles northeast of Lucky Lake.

22. Three other sites are rainfall-monitoring sites. Two rainfall-monitoring sites are north of the weir. The site just north of I-75 is at the Ford Motor Company test track, which is immediately west of Lucky Lake and Stumpy Strands, and the site more directly north of the Merritt Canal is about ten miles north of I-75.

23. Specific Condition 18 states the frequency with which someone (presumably a District employee or contractor) is to collect the data from these 10 monitoring sites, but contains no performance criteria. The monitoring plan thus commits the District to collecting data, but not to analyzing

the data, nor, more importantly, taking specified actions when certain performance parameters are exceeded.

24. Neither the revised monitoring plan nor the application in any way commits the District to using the data collected from the revised monitoring plan to develop a set of criteria, based on rainfall amounts, groundwater levels, and surface water levels, to fine-tune the operation of the gates so as not to exacerbate present flooding. Nothing in the revised monitoring plan or the application suggests that the District will use the data collected from the revised monitoring plan to identify more clearly the relationships between storm events and water levels to understand better the relationship between flooding, on the one hand, and the existence of the proposed weir and the operation of its gates.

II. Faka Union Canal Watershed and Southern Golden Gate Estates

25. What is now known as the Faka Union Canal Watershed historically covered about 234 square miles. It ran from an area about four miles north of what is now known as Immokalee Road south in a widening expanse that approached 12 miles at what is now U.S. Route 41. It then ran south until it emptied into the Gulf of Mexico at Faka Union Bay in what is now the Cape Romano Ten Thousand Islands State Aquatic Preserve east of Marco Island.

26. Land alterations due to road and canal construction and urban and agricultural development eventually reduced the

Faka Union Canal Watershed to about 189 square miles. Most noticeably, these changes narrowed the drainage area at U. S. Route 41 from almost 12 miles to little more than the width of the Faka Union Canal.

27. The Faka Union Canal Watershed is characterized by low relief and poorly defined drainage patterns. At the north boundary of the watershed, which now ends at Immokalee Road, the elevation reaches 24 feet NGVD. Twenty-eight miles to the south, at the outlet of the basin, the elevation is two feet NGVD. The water flows generally in a southwest direction.

28. Historically, water ran slowly through the watershed in sheetflow several miles wide and a few inches to a few feet deep. Drainage concentrated in slightly lower sloughs and strands, which generally dried out in the dry season. Historically, the watershed featured flat, swampy lands containing cypress trees, islands of pine forests, and wet and dry prairies. Prior to development, much of the watershed remained inundated by several feet of water during the five-month wet season (roughly from mid-May through mid-October). In this undisturbed state, the prominent features of the watershed were the storage of runoff in depressional areas, attenuated peak flows, and a longer hydroperiod into the dry season.

29. In the early 1960s, Gulf American Land Corporation subdivided a 173 square-mile area in Collier County into many

thousands of lots as small as 1.25 acres. The development was Golden Gate Estates. The portion of Golden Gate Estates south of I-75 is known as Southern Golden Gate Estates. Golden Gate Estates is west of the Merritt Canal.

30. Gulf American's purpose in dredging the 183-mile canal system was to allow it to market as land, available for continuous occupation, subdivided lots superimposed over an area that was land during the dry months and water during the wet months. To achieve this objective, Gulf American Land Corporation constructed one group of canals that drains to the west and another group of canals drains to the south into the Faka Union Canal. Gulf American dredged the canals draining to the south, which form the Faka Union Canal System, from 1968 through 1971.

31. Four north-south canals spaced two miles apart drain Southern Golden Gate Estates and the portion of the Faka Union Canal Watershed north of I-75. From west to east, the canals are the Miller Canal, Faka Union Canal, Merritt Canal, and Prairie Canal. Only the two westerly canals run north of I-75. The Miller Canal extends almost seven miles north of I-75, and the Faka Union Canal extends about 14 miles north of I-75. The Merritt Canal starts in the immediate vicinity of I-75, and the Prairie Canal starts about two miles south of I-75.

32. The average excavated depth of the four canals is about ten feet from the top of the bank to the bottom of the channel. Given the relatively close proximity of the water table to the surface in this area, excavation to these depths thus established a direct hydraulic connection with the surficial aquifer. The canals are large, ranging from 45 to over 200 feet wide.

33. Although unable to convey without flooding the water from even a ten-year storm event, which is the level of service standard set by Collier County for Southern Golden Gate Estates, the Faka Union Canal system has nonetheless severely impacted the water resources of Collier County. According to the Hydrologic Restoration of Southern Golden Gate Estates, prepared in February 1996 by the Big Cypress Basin Board (Southern Golden Gate Estates Restoration Plan):

> . . . Construction of the canals has led to both increased volumes and rates of runoff from the watershed which has had lasting effects on the area's water supply, vegetation, wildlife, and coastal estuaries.
>
> The canals intercept large volumes of surface and subsurface flow and quickly divert them to the Faka Union Bay and the Ten Thousand Island Estuary of the Gulf of Mexico resulting in less surface water available for storage. Since groundwater recharge is achieved primarily through infiltration from surface detention storage, reduced groundwater recharge threatens both groundwater supply for the region and the natural barrier to salt water intrusion. Continued overdrainage has caused an eventual lowering of the

> groundwater table. This has caused vegetation to change from wetland dominant to transitional and upland systems with invasive exotic species. The extreme dry conditions caused by overdrainage have resulted in more frequent and more intense wildfires with a greater destructive impact on vegetation.
>
> The increased runoff rate has had severe effects on the receiving estuaries. Historically, the estuaries would receive broad, slow moving sheets of water that were capable of carrying essential nutrients but not high sediment loads. This has been replaced with point loads of freshwater at the Faka Union Canal outlet that push salinity levels down and result in freshwater discharge shocks throughout the Ten Thousand Island Estuary. The increased runoff rate drains the area quickly and does not allow the hydroperiods necessary to sustain wetland vegetation. . . .

Southern Golden Gate Estates Restoration Plan, pages 8-9.

34. The major roadway affecting the Faka Union Canal Watershed is State Road 84, which was a two-lane road constructed in 1966. In 1990, construction was completed transforming State Road 84 into four-lane I-75. These road projects have hastened drainage of the lands to the north of I-75 and east of the Faka Union Canal.

35. The land north of the Merritt Canal is largely undeveloped. If one were to extend the Merritt Canal due north of I-75, it would run through the middle of Lucky Lake Strand and much of Stumpy Strand, which is immediately to the north of Lucky Lake Strand. Agricultural land owned by

Collier Enterprises is just north of the Ford Motor Company test track and immediately west of Lucky Lake Strand. Agricultural land owned by Baron Collier Company is immediately north of Stumpy Strand.

36. This imaginary extension of Merritt Canal would mark the west boundary of the Florida Panther National Wildlife Refuge, which was established in June 1989. The Florida Panther National Wildlife Refuge constitutes 26,000 relatively undisturbed acres immediately north of I-75. Intervenor Clifford Fort owns property south of the refuge on the south side of I-75.

37. The Florida Panther National Wildlife Refuge features mostly wetlands, oak hammocks, pine flatwoods, and prairies. The refuge receives runoff from stormwater and possibly agricultural pumping of the water table from the adjacent farmland. In addition to draining into the headwaters of the Merritt Canal near the southwest corner of the refuge, the refuge also drains into the northerly borrow canal running along the north side of I-75. In the vicinity of the Merritt Canal, the four borrow canals running along the north and south sides of I-75, on both sides of the Merritt Canal, drain in the direction of the Merritt Canal.

38. Listed species using the Florida Panther National Wildlife Refuge include the Florida panther, Florida black bear, wood stork, roseate spoonbill, limpkin, and Eastern

Indigo snake. In October 1995, an inordinate amount of rain fell in the area. Attracted by the increased water depths, which more closely approximated historic conditions, 75 wood storks nested in the Lucky Lake Strand; in drier years, wood storks do not nest in the strand.

39. Lucky Lake Strand occupies the southwest corner of the Florida Panther National Wildlife Refuge. Lucky Lake and two other ponds are present in this area. When full, Lucky Lake and one of the ponds are about 50 meters wide, and the third pond is about half of this width. During the dry season, a person can throw a stone across any of the ponds.

40. Historically, Lucky Lake and Stumpy strands passed surface water into the Picayune Strand, which is west of the Merritt Canal and south of I-75, from which the water ran into the Fakahatchee Strand. Lucky Lake Strand presently narrows to about 1000 feet at I-75.

41. The hydrologic connection between the outlet of Lucky Lake Strand and the headwaters of the Merritt Canal has contributed significantly to the overdrainage of these two strands, which occupy a significant area within the federal refuge. The FWS wildlife biologist stationed at the Florida Panther National Wildlife Refuge reported in a habitat assessment report prepared in August 1996 that four ponds in the strand dried out by December so that they could not sustain fish or provide feeding habitat for birds.

III. Permitting Criteria

A. Public Health, Safety, or Welfare or Others' Property

42. One of the main disputes between the parties is the affect of the proposed weir on flooding. This case is largely about flooding or, more generally, the amount of water to be stored for a specified period of time. Petitioners and Intervenors fear that the District's effort will cause flooding to areas south of I-75 and east and west of the Merritt Canal.

43. Occupying property within a vast area whose natural drainage patterns have been greatly disrupted, Petitioners and Intervenors justifiably fear the ravages of flood and fire. Although this area was undoubtedly subject to these hazards prior to man's alteration of the natural landscape, large-scale alterations to natural drainage in Southwest Florida have artificially heightened the risk presented by these natural hazards.

44. Destructive flooding follows the inhabitation of areas historically devoted to the storage of considerable volumes of water; the flooding is exacerbated where, as here, natural drainage features have been replaced by artificial facilities that are inadequate for both the natural flows and the new, artificial flows generated by development. Although inadequate for the natural and artificial flows generated by even design storm events, the artificial drainage facilities

nevertheless change historic drainage rates, accelerating the rate and volume of natural drainage and shortening the hydroperiod. In this manner, the artificial drainage facilities contribute to the desiccation of previously saturated soils and foster conditions suitable for dangerous fires.

45. Initially, Petitioners and Intervenors contend that the District seeks approval of the proposed weir as an indirect means of implementing the Southern Golden Gate Estates Rehydration Plan. Little evidence supports this concern.

46. The Southern Golden Gate Estates Rehydration Plan outlines several alternatives for the proposed rehydration of Southern Golden Gate Estates. The preferred alternative does not call for a weir at the proposed location. The purpose of the proposed weir is to rehydrate an area north of the Southern Golden Gate Estates. As discussed below, the role of the proposed weir in rehydrating Southern Golden Gate Estates appears insubstantial to the point of nonexistent.

47. Focusing on the location of the proposed weir over half of a mile downstream from the southernmost part of the area intended to be rehydrated, Petitioners and Intervenors dispute the stated purpose of the project, focusing on the District's earlier relocation of the proposed weir from

positions just north and then just south of I-75 to its present position a half-mile farther to the south.

48. The District did nothing to allay this concern of Petitioners and Intervenors when its employees could not provide a reasonably detailed explanation of the process by which someone moved the proposed site to the south. From the District's evidence, one would infer that the decision to relocate the proposed weir to the south spontaneously emerged, without human sponsor, in the course of bureaucratic decisionmaking.

49. The District asserted that the northerly sites were impractical due to access problems. However, the District made little, if any, real effort to see if the Department of Transportation would allow access to these more northerly sites--one of which the District might be able to access without the consent of the Department of Transportation.

50. The record does not reveal why the District relocated the proposed weir to its present location, considerably south of its initial two locations at I-75. Again, though, the evidence does not support the contention of Petitioners and Intervenors that the relocation decision was part of a private plan among District employees to incorporate the proposed weir as part of a more ambitious project to rehydrate Southern Golden Gate Estates.

51. Nor does the evidence establish, as Petitioners and Intervenors contend, that the relocation decision was driven by the concerns of three influential landholders to the north of I-75--Collier Enterprises, Barron Collier Company, and Ford Motor Company. These three landholders approved the proposed weir in its present location over a half-mile to the south of its original locations and may have expressed concern that the original locations at I-75 would unreasonably raise the risk of flooding their land and business and agricultural activities to the north of I-75.

52. If the District's real reason for relocating the proposed weir was due to objections from these landowners to the north of I-75, this reason would not itself help Petitioners and Intervenors. If the District acceded to the demands of these landowners to the north, it does not necessarily follow that the District lacked confidence in its flood calculations. A relocation decision under these circumstances would have as likely reflected political, as scientific, concerns.

53. Additionally, if the District moved the proposed weir at the insistence or suggestion of the landowners to the north, any flooding concerns voiced by these landowners raise different issues from the flooding concerns raised by Petitioners and Intervenors. Owners of land immediately to the north and west of the federal refuge are more directly

within the area of the intended effects than are Petitioners and Intervenors.

54. More substantially, Petitioners and Intervenors claim that the proposed activity is so negligently designed or will be so negligently operated as to result in heightened and more frequent flooding of areas to the west and east of the proposed weir.

55. The District's record in operating weirs in Collier County is not flawless. In recent years, the District constructed and maintained a weir with unlawfully high gates and did not correct the noncompliant water-control structure for several months after first learning of the violation. However, this appears to have been an isolated violation.

56. The division of responsibility between the District and Collier County for the maintenance of drainage canals is based on whether the canal is a primary or secondary drainage facility. The District has assumed responsibility for all of the primary drainage facilities in Collier County. Surprisingly, though, the record reveals no master map or index of the primary drainage facilities and at least the larger nonprimary drainage facilities.

57. However, Petitioners and Intervenors failed to show that any confusion concerning maintenance responsibilities that may exist between the District and Collier County would appreciably raise the probabilities that the District would

operate the proposed weir in such a way as to exacerbate present flooding concerns. The District and Collier County agree that the District has jurisdiction over the Merritt Canal. Petitioners and Intervenors have also failed to show that any confusion concerning secondary-drainage contributions that may exist between the District and Collier County would have a substantial impact on the successful operation of the proposed weir.

58. The most significant claim raised by Petitioners and Intervenors asserts that the District failed to provide reasonable assurance that the proposed weir would not exacerbate flooding. Although the weir gates would be closed only during the dry season, the proposed activity requires analysis of the risk of heightened water elevations upstream of the proposed weir. In theory, flooding could result from the effects of the weir even when the gates are open, as well as the possibility of an extreme storm event during the dry season.

59. Expert witnesses on both sides clashed over whether the design of the proposed weir was sufficient not to exacerbate existing levels, rates, and frequencies of flooding of adjacent uplands. The crucial feature over which the experts disagreed was the spoil banks running along the canal.

60. When the Merritt Canal was constructed, the spoil was dumped along the banks. In the ensuing years, vegetation

colonized and stabilized the spoil banks, which now function as levees.

61. The expert witness called by Petitioners and Intervenors disregarded the spoil banks in his calculations. His lack of confidence in the opposing expert witness's use of top-of-bank elevations was partly justified for the reasons stated below. Although a minor point, part of the argument of Petitioners and Intervenors' expert witness proved too much by asserting that levees cannot maintain water levels higher inside the levee than the existing ground elevation outside the levee.

62. On the other hand, in showing that the proposed weir would not exacerbate flooding, the District's expert witness relied, not entirely justifiably, on the top-of-bank elevations. The District took only spot elevations of the spoil bank and then assumed that these elevations prevailed along the entire 3600 feet of canal upstream of the weir. The District did not inspect the upstream banks for unpermitted culverts, of which at least one was discovered during the lengthy hearing in this case.

63. There is a possibility of material differences in elevations along the spoil banks. These spoil banks were not constructed to a specified elevation; they were an excavation byproduct that was haphazardly deposited beside the excavated canal. Additionally, the record suggests that this general

area has been the site of unpermitted works, such as the installation of a culvert and creation of unpermitted canal plugs.

64. In the months over which the hearing took place, Petitioners and Intervenors alertly found a culvert breaching the spoil bank upstream of the proposed weir. At least one of their representatives demonstrated superior familiarity with the spoil bank over the familiarity demonstrated by the District's representatives. It is a fair inference that, if the spoil bank was substantially missing at any point upstream of the proposed weir, Petitioners and Intervenors would have brought such evidence to the hearing. The absence of such evidence, coupled with the reasonable inferences that may be drawn from the concededly more cursory investigation of the site by the District, precludes a finding that the spoil bank is substantially missing at any material point so as to warrant the use of ground elevations, as used by the expert witness called by Petitioners and Intervenors. At best, from the perspective of Petitioners and Intervenors, the record supports the finding that the spoil banks may not be as continuously as high as the District posits, but they are not nearly as low (i.e., nonexistent) at any point as Petitioners and Intervenors contend.

65. The two experts also disagreed over two subordinate inputs used in running the flood calculations. The expert

called by Petitioners and Intervenors claimed that initial tailwaters (i.e., water elevations downstream of the weir) in excess of 8.53 feet were appropriate. Although the canal has experienced historically higher tailwaters than 8.53 feet, the expert did not explain adequately why such higher tailwaters should be used in running the model, especially since flood calculations are not used to predict flooding conditions in all storms, such as a 1000-year storm. Absent a showing that tailwater in excess of 8.53 feet would be present at the relevant time preceding or during the design storm event, the expert called by Petitioners and Intervenors failed to show why the District's tailwater input was unreasonable.

66. On the other hand, the District's expert claimed that the model required an adjustment to the friction factor or Manning's N coefficient. This adjustment, which decreased the friction factor by an order of magnitude, approximated a bottom that was many times smoother than the actual bottom of the Merritt Canal. The District's expert did not explain adequately why the lower friction factor should be used in running the model, and he frankly did not demonstrate the same familiarity with this friction factor as did the expert called by Petitioners and Intervenors. The most likely inference is that the District's expert erred in making this adjustment.

67. There was another controversy between the parties regarding a subordinate input for the flooding calculations.

Petitioners and Intervenors raised the possibility that agricultural discharges from the Collier properties adjacent to the federal refuge, which the District ignored in its calculations, might further undermine any assurances as to flooding. This could have been useful information if developed in the record, but the record permits no basis to quantify the value of this additional discharge or ascertain its timing relative to wet and dry seasons and storm events, if in fact this agricultural discharge takes place at all. Also, offsetting any such discharge would be two factors: the District ran its calculations assuming a runoff rate 25 percent greater than that appropriately used by the Florida Department of Transportation for modeling the design storm event, and the District ignored the plugs in the I-75 borrow canals, which attenuate the runoff into the Merritt Canal.

68. Although Petitioners and Intervenors incorrectly inputted ground elevation in place of the top-of-bank elevation--when the best elevation is somewhere in between these two values--their expert's calculations are useful for illustrating a scenario that, for this reason, exceeds the worst-case scenario. Again, this is an illustration of a scenario that predicts greater flooding than reasonably should be predicted because, in actuality, the restraining elevation is higher than ground elevation.

69. Using the 8.53-feet initial value for tailwater, Petitioners' Exhibit 27 illustrates the different water elevations resulting from running the model with and without the excessive reduction of the friction factor. Petitioners Exhibit 27 illustrates the effect of the design storm on upstream water elevations with the gates open. Petitioners Exhibit 27 ignores the spoil banks and instead uses prevailing ground elevations.

70. At the site of the proposed weir, the canal bottom is at about -1.5 feet NGVD. The proposed weir would add fixed barriers up to an elevation of 5.0 feet NGVD; the adjustable gates would, when closed, extend the barrier from 5.0 feet NGVD to 9.5 feet NGVD. Approximate existing ground elevation averages about 10 feet NGVD downstream of I-75, with one dip to below 9 feet NGVD about 600 feet downstream of I-75. For about 6000 feet upstream of I-75, where there is no spoil bank whatsoever, the average ground elevation, outside of the slough, is about 13 feet. The slough bottom in this area gently slopes from about 9 feet NGVD to 10 feet NGVD.

71. Ignoring the spoil bank, Petitioners Exhibit 27 predicts flooding in two major areas in the design storm event, even with the gates open. One of these is about 300 feet long, starting about 400 feet downstream of I-75. The other is at least 300 feet long, starting near the northern extreme of the modeled area and running off the modeled area.

The District did not survey in detail the spoil bank along the 300 feet downstream of I-75. There is no spoil bank upstream of I-75 because there is no dredged canal.

72. The water elevation about 400 feet downstream of I-75 would be almost one foot greater than the ground elevation. The water elevation about 6000 feet upstream of I-75 will be as much as half of a foot greater than the ground elevation. At the more downstream point, the actual water elevation would exceed the District's projection by nearly three-quarter of one foot. At the more upstream point, the actual water elevation would exceed the District's projection by over 1.5 feet.

73. Although the record could have been better developed on this important point, there is reasonable assurance that the existing spoil-bank elevations are sufficient to contain these flood elevations predicted by the expert called by Petitioners and Intervenors.

74. Petitioners and Intervenors claimed that the District could achieve its stated purpose of extending the hydroperiod in the Florida Panther National Wildlife Refuge without increasing the risk or extent of flooding of adjacent uplands. Petitioners and Intervenors suggested that the District repair an existing plug in the Merritt Canal just south of I-75. (This "plug" is actually the original ground surface, which evidently was undisturbed during the

construction of I-75. Given the excavation of canals on both sides of what is now a narrow strip of earth, the land resembles a plug, and this recommended order refers to it as a plug, although this term is descriptive only of the feature's present appearance, not its method of creation.)

75. There are actually six plugs--again, in the broad sense of the word--in the vicinity of the junction of the Merritt Canal and I-75. Two plugs interrupt the flow into the Merritt Canal of the borrow canals to the north of I-75. Two plugs likewise interrupt the flow into the Merritt Canal of the borrow canals to the south of I-75. The last two plugs are in the Merritt Canal, a few feet north and south of I-75.

76. Repairing the plug immediately south of I-75 would raise the water elevation by about 1.3 feet under the I-75 bridge. By about 2000 feet upstream of I-75, there is no significant difference between the water elevation using the model of Petitioners and Intervenors' expert for the proposed weir 3600 feet downstream of I-75 and the water elevation for the proposed plug repair just south of I-75. Repairing the plugs would have reduced the water elevation downstream of I-75 by less than one half of a foot.

77. Petitioners, Intervenors, and their expert have proposed a promising alternative to the proposed weir. The alternative appears to serve the stated purpose of the proposed activity at least as well as the proposed weir would,

if not somewhat better due to its closer proximity to the targeted federal refuge, and the alternative project would cost much less to construct, maintain, and operate. The restorative nature of the work would probably relieve the District of the necessity of obtaining a permit. Perhaps the prospect of such work might motivate other state and federal agencies to grant the District access to the area at I-75 to build the weir at one of its first two locations.

78. However, the issue is whether the District has provided reasonable assurance for the activity that it has proposed. As to flooding, the District has provided reasonable assurance that the proposed activity will not exacerbate flooding during the design storm events or even more severe storm events.

79. Even assuming an absence of reasonable assurance as to flooding, the first criterion requires consideration of whether the proposed activity would adversely affect the public health, safety, and welfare or the property of others. Extending the hydroperiod of the federal refuge protects the property of others by reducing the period of time that the turf is dried out. This provides a wide range of environmental protection, including protection against the risk of fire caused by excessive drainage, for the federal refuge and other property in the area.

80. Retarding the artificially high rate of drainage will improve water quality in at least two respects. The proposed weir will retard and reduce the nutrients conveyed down the canal and into the estuary into which it eventually empties. The proposed weir will also tend to restore somewhat the rate and timing of historic freshwater inputs on which the viability of the estuary and its inhabitants depends. Concerns about public health, safety, and welfare, as well as the property of others, cannot be severed from these broadscale environmental benefits to be derived from the proposed activity. Public health concerns are tied to these considerations.

81. Thus, even if the District had failed to provide reasonable assurance as to flooding alone, the District has provided reasonable assurance that, on balance, the proposed weir will not adversely affect the matters set forth in the first criterion.

B. Conservation of Fish and Wildlife, Including Endangered or Threatened Species, or Their Habitats

82. The proposed weir will serve the conservation of a wide range of flora and fauna, as well as their wetlands habitat, within the targeted federal refuge. These species include listed species. The evidence does not support a finding that extending the hydroperiod of the federal refuge would in any way disturb the Florida panther.

C. Navigation, Flow of Water, or Harmful Erosion

or Shoaling

83. The proposed weir will have not adversely affect navigation or the flow of water within the canal, and it will not cause erosion or shoaling.

D. Fishing or Recreational Values or Marine Productivity in the Vicinity of the Activity

84. The proposed weir will not adversely affect fishing or recreational values or marine productivity in the vicinity of the proposed weir. To the contrary, the proposed weir will enhance these values in the immediate vicinity of the proposed weir and downstream at the estuary at the mouth of the Merritt Canal.

E. Temporary or Permanent Nature

85. The proposed weir will be of a permanent nature.

F. Significant Historic and Archaeological Resources

86. The record provides no basis for a finding that the proposed weir jeopardizes significant historic and archaeological resources.

G. Current Condition and Relative Value of Functions of Areas Affected by the Proposed Activity

87. The federal refuge is functioning well environmentally, despite the adverse impact of dramatic disruptions of the natural drainage regime. The value of these functions is high. Likewise, the receiving estuarine waters are functioning well, despite the adverse impact of dramatic disruptions of the natural drainage regime.

Extending the hydroperiod of the federal refuge will partially offset these historic disruptions. Thus, the proposed weir will assist in the functioning of natural systems that are now functioning well, but could use some help.

H. Public Interest

88. The proposed weir is not in an Outstanding Florida Water. Thus, the question is whether the proposed activity is not contrary to the public interest. The District has provided reasonable assurances as to the preceding seven criteria sufficient to demonstrate that, on balance, the proposed activity is not contrary to the public interest.

I. Cumulative Impacts

89. There is no evidence that the proposed weir will cause any adverse cumulative impacts upon wetlands or surface waters.

J. Other Criteria

90. The District has proved that the proposed weir would not violate any water quality standards. To the contrary, any effect from the proposed activity would be to improve water quality, especially downstream at the estuary. The restoration of conditions more typical of historic drainage would allow more nutrients to be captured upstream and would tend to restore the historic timing and volume of freshwater inputs into the estuary.

91. For the reasons set forth above, the District has also provided reasonable assurance that the proposed activity meets the 11 criteria contained in Rule 40E-4.301, which largely duplicate the seven criteria discussed above, and the relevant provisions of the Basis of Review. It is true that the monitoring provisions are largely illusory because they provide no quantifiable parameter beyond which the District must take specified action. In other words, at best, the monitoring provisions assure that the District will collect post-operational flooding data, but they do not promise that the District will take any action if certain levels of flooding take place. However, the monitoring provisions are of little importance given the factual findings concerning flooding, as discussed above, and the legal requirements of the Basis of Review, as discussed below.

CONCLUSIONS OF LAW

92. The Division of Administrative Hearings has jurisdiction over the subject matter. Section 120.57(1), Florida Statutes. (All references to Sections are to Florida Statutes, except for references to Sections of the District's Basis of Review (BOR). All references to Rules are to the Florida Administrative Code.)

93. Section 373.413(1) provides that the District or DEP may require permits and impose "reasonable conditions" that are "necessary to assure" that the construction or alteration

of any stormwater management system or dam, among other activities, "will comply with the provisions of this part and applicable rules . . . and will not be harmful to the water resources of the district."

94. Section 373.414(1) adds that the District or DEP shall require an applicant to provide "reasonable assurance" that the proposed activity will not violate state water quality standards and is not "contrary to the public interest." If the proposed activity "significantly degrades or is within an Outstanding Florida Water," the applicant must provide "reasonable assurance" that the proposed activity will be "clearly in the public interest."

95. Pursuant to Section 373.414(1)(a), the public-interest determination requires the issuing agency to "consider and balance" seven criteria:

> 1. Whether the activity will adversely affect the public health, safety, or welfare or the property of others;
> 2. Whether the activity will adversely affect the conservation of fish and wildlife, including endangered or threatened species, or their habitats;
> 3. Whether the activity will adversely affect navigation or the flow of water or cause harmful erosion or shoaling;
> 4. Whether the activity will adversely affect the fishing or recreational values or marine productivity in the vicinity of the activity;
> 5. Whether the activity will be of temporary or permanent nature;
> 6. Whether the activity will adversely affect or will enhance significant historical and archaeological resources under the provisions of s. 267.061; and

> 7. The current condition and relative value of functions being performed by areas affected by the proposed activity.

96. Section 373.414(1)(b) adds that, if an applicant is unable to meet these seven criteria, then the District or DEP shall consider mitigation measures. Section 373.414(8) requires that the District or DEP "consider the cumulative impacts upon surface water and wetlands" when deciding whether to issue a permit. Rule 40E-4.302 restates the seven criteria stated in Section 373.414(1)(a) and otherwise tracks the statutory requirements.

97. Rule 40E-4.301 identifies eleven criteria that largely, if not entirely, overlap the seven criteria identified in Section 373.414(1)(a) and Rule 40E-4.302. The application and purpose of Rule 40E-4.301 are unclear. For instance, in applying Rule 40E-4.301, it is unclear whether the factfinder should balance the eleven criteria; unlike Rule 40E-4.302 and Section 373.414(1)(a), Rule 40E-4.301 does not expressly so provide. More importantly, if the two sets of criteria are not wholly duplicative, the District's rules fail to explain what happens when a proposed activity meets the seven criteria identified in the statute and Rule 40E-4.302, but fails to meet the eleven criteria identified in Rule 40E-4.301.

98. Rule 40E-4.302(3) incorporates the District's Basis of Review in the determination whether an applicant has

provided the reasonable assurances required by Rules 40E-4.301 and 40E-4.302.

99. In this case, the District is the applicant, not the permitting agency; DEP is the permitting agency. In Rules 62-330.100(1) and 62-330.200(4), DEP adopts various rules of the water management districts for the issuance of ERPs, including the relevant rules already discussed. In Rule 62-330.200(4)(b), DEP adopted the District's Basis of Review (BOR), except for Sections 1.0 through 3.1.2.9, 4.4, and 4.5, and revised Section 4.2.2.

100. BOR Section 4.0 states that the District's permitting goal is "no net loss in wetland and other surface water functions." (Although a DEP rule converts all references to the "District" to "DEP," this recommended order retains the actual language of the BOR.) BOR Section 4.0 provides that the District requires permits so it can "conserve the beneficial functions of . . . wetlands or other surface waters."

101. BOR Subsection 4.2.1 states, in part:

> The degree of impact to wetland and other surface water functions caused by a proposed system, whether the impact to these functions can be mitigated and the practicability of design modifications for the site, as well as alignment alternatives for a proposed linear system, which could eliminate or reduce impacts to these functions, are all factors in determining whether an application will be approved by the District. Design modifications to reduce or eliminate

> adverse impacts must be explored, as described in subsection 4.2.1.1. Any adverse impacts remaining after practicable design modifications have been implemented may be offset by mitigation as described in subsections 4.3-4.3.8. . . . To receive District approval, a system cannot cause a net adverse impact on wetland functions and other surface water functions which is not offset by mitigation.

102. The preceding section outlines a two-step process of minimization and mitigation. However, according to BOR Subsection 4.2.1.1, the District will not require project modifications to achieve minimization unless the proposed activity fails to meet the requirements of Subsections 4.2.2 through 4.2.3.7.

103. Subsection 4.2.2 requires that an applicant provide reasonable assurance that a proposed activity will not impact the values of wetlands and other surface water functions so as to impact adversely the abundance, diversity, or habitat of fish, wildlife, and listed species.

104. Subsection 4.2.2.4 requires that an applicant provide reasonable assurance that the regulated activity will not change the hydroperiod or a wetland or other surface water, so as to affect adversely wetland functions or other surface water functions.

105. Subsection 4.2.2.4(b) addresses proposed activities that may increase the "depth, duration, or frequency of inundation through changing the rate or method of discharge or

water to wetlands or other surface waters or by impounding water in wetlands or other surface waters." Applicants for permits for such activities must provide reasonable assurance that the activities will not "adversely affect the functioning of the specific wetland or other surface water subject to the increased discharge or water level."

106. Subsection 4.2.2.4(c) requires that an applicant proposing an activity that "could have the effect of altering water levels in wetlands or surface waters" " shall be required . . . to monitor the wetland or other surface waters to demonstrate that such alterations has not resulted in adverse impacts . . . or calibrate the system to prevent adverse impacts." This subsection states: "Monitoring parameters, methods, schedules, and reporting requirements shall be specified in permit conditions."

107. Subsection 4.2.3 addresses the seven statutory criteria detailing the public-interest test.

108. Subsection 4.2.3.1 states that, in balancing the seven criteria, the District must determine whether the proposed activity will cause, among other things, flooding and environmental impacts to the property of others, although not with respect to property values or taxes.
Subsection 4.2.3.1(c) adds, as to flooding: "There is at least a neutral factor in the public interest balance with respect to the potential for causing or alleviating flooding problems

if the applicant meets the water quantity criteria in section six of this Basis of Review."

109. BOR Section 6 addresses water quantity criteria. Subsection 6.2 provides that the offsite discharge rate may not cause "adverse impacts to existing offsite properties" and is limited to "historic discharge rates," previously permitted rates, or rates specified in District criteria stated in an appendix for various canals. Subsection 6.3 identifies the design storm as the three-day, 25-year storm.

110. Historically, the land in question was inundated during the wet season, so Section 6 is satisfied. Thus, by operation of the BOR, the presumption is that the proposed activity is no worse than neutral as to flooding. In fact, though, the District has provided reasonable assurance as to flooding. Because the proposed activity satisfies the requirements of BOR Subsections 4.2.2 through 4.2.3.7, the District is not required to consider alternative alignments to this proposed linear system.

111. The proposed activity satisfies the other factors mentioned by the BOR. As found above, the monitoring provisions of the proposed permit, although largely illusory, nonetheless satisfy the BOR requirements concerning monitoring, as these requirements themselves do not require the imposition of enforceable performance standards in the monitoring provisions.

112. Based on the findings set forth above, the District has provided reasonable assurance that, on balance, the proposed activity meets the seven criteria identified in the statute and Rule 40E-4.302.

113. Based on the findings set forth above, the District has provided reasonable assurance that the proposed activity meets the eleven criteria identified in Rule 40E-4.301.

RECOMMENDATION

It is

RECOMMENDED that the Department of Environmental Protection enter a final order granting the permit for the construction of the proposed weir about 3600 feet south of I-75 in the Merritt Canal.

DONE AND ENTERED this 25th day of June, 1998, in Tallahassee, Leon County, Florida.

ROBERT E. MEALE
Administrative Law Judge
Division of Administrative Hearings
The DeSoto Building
1230 Apalachee Parkway
Tallahassee, Florida 32399-3060
(850) 488-9675 SUNCOM 278-9675
Fax Filing (850) 921-6847

Filed with the Clerk of the
Division of Administrative Hearings
this 25th day of June, 1998.

COPIES FURNISHED:

James W. McDonald, Jr., Esquire
McDonald & Associates
Community Plaza, Suite 306
15600 Southwest 288th Street
Homestead, Florida 33030

A. Glenn Simpson
Qualified Representative
5961 22nd Avenue Southwest
Naples, Florida 34116

Marcy I. LaHart
Associate Attorney
South Florida Water Management District
3301 Gun Club Road
West Palm Beach, Florida 33416-4680

Francine M. Ffolkes
Assistant General Counsel
Department of Environmental Protection
Mail Station 35
3900 Commonwealth Boulevard
Tallahassee, Florida 32399-3000

Walter R. Shaw, Sr., pro se
1400 Northwest 62nd Avenue
Sunrise, Florida 33313-6138

Cliffort L. Fort
8410 Northwest 16th Street
Pembroke Pines, Florida 33024

Kathy Carter, Agency Clerk
Department of Environmental Protection
Mail Station 35
3900 Commonwealth Boulevard
Tallahassee, Florida 32399-3000

F. Perry Odom, General Counsel
Department of Environmental Protection
Mail Station 35
3900 Commonwealth Boulevard
Tallahassee, Florida 32399-3000

NOTICE OF RIGHT TO SUBMIT EXCEPTIONS

All parties have the right to submit written exceptions within 15 days from the date of this recommended order. Any exceptions to this recommended order must be filed with the agency that will issue the final order in this case.