

Naples, Florida September 12, 1983

LET IT BE KNOWN, that the Pelican Bay Improvement District met on this date in Regular Session at 4:30 P.M. in The Club at Pelican Bay, 707 Gulf Park Drive, Naples, Florida with the following members present:

PRESIDENT: Salvatore C. Scuderi
SECRETARY: Douglas G. Brown

TREASURER: Sylvia A. Moll

W. Harmon Turner
Miles Scofield

ALSO PRESENT: Mr. Gary Moyer, District Manager; Mr. James Ward, Assistant District Manager; Messrs. Ross Obley, Dave Caldwell, Charles Penn and Louis Hoegsted, Westinghouse Communities of Naples, Inc.; Messrs. Fred Biery and Jerry Eckert, Post, Buckley, Schuh & Jernigan; Mr. George Varnadoe, Young, van Assenderp, Varnadoe and Benton and Jean Swindle, Administrative Aide.

AGENDA

1. Roll Call
2. Presentation of the Master Plan Update prepared by Post, Buckley, Schuh and Jernigan
3. Supervisors Requests and Audience Participation
4. Adjournment

ROLL CALL

President Scuderi called the meeting to order at 4:30 P.M. and asked the record show all members present.

PRESENTATION OF THE MASTER PLAN UPDATE PREPARED BY POST, BUCKLEY,
SCHUH & JERNIGAN

Prior to any presentation by either Mr. Fred Biery or Mr. Gary Moyer on the Master Plan Update, President Scuderi stated all members of the Board had done "their homework", in that, they had read and understood the report prepared by Post, Buckley, Schuh and Jernigan which was given to each member at the meeting of August 29, 1983 and were familiar with the original Master Plan of the District. He was of the opinion that the meeting could best be served by having the Board members asked particular questions with Mr. Biery or Mr. Moyer answering each individual. His two questions were - "What is the total cost to the District if all the engineers' recommendations were undertaken?" and "Where is the money coming from for such recommendations?".

Mr. Fred Biery answered President Scuderi's first question by stating the total cost to the District as of the present date is \$17,870,100. Such monies coming from two sources - One: \$11,355,000 from four bond issues and Two: \$6,515,100 from developer advances. When Mr. Scofield asked how the developer advances are to be repaid, Mr. Biery answered the basis of the District's connection fee schedule is predicated on the repayment of these monies (\$6,515,000). Continuing, he stated the figure of \$17,870,100 is the total cost of the District's Master Plan and includes all the modifications which were originally contemplated in the original plan but excluded because the District was unable to finance all areas of construction under the first bond issue. Mr. Biery did say there had been a change in the timing of construction due to demands on the system.

There was discussion on the following Conclusions and Recommendations for each area of the District's system as shown below:

Wellfield:

If the current consumption rates continue, Pelican Bay when completed, will be using an average of 9.004 MGD of raw water, with a maximum peak of 17.728 MGD. PBID's existing Consumptive Use Permit from the South Florida Water Management District is limited to a peak flow rate of 3.0 MGD. The original wellfield withdrawal tests indicated that a safe withdrawal of up to 5.0 MGD was possible and this amount, in combination with on-site storage, was expected to handle the ultimate water demands of the Improvement District. That does not now appear to be the case. Fire flows or peak hour potable water demands can be satisfied with on-site storage tanks. However, present forecast of long term demands indicates that additional water supply capacity will be necessary.

Based on current trends, it can be generally concluded that the existing supply system will adequately satisfy demands through at least the end of 1984. The scheduling of expanded supply facilities relates primarily to the need for additional irrigation water. Irrigation water currently averages 0.40 MGD, with a 0.77 MGD peak. If substantial expansions to the irrigation distribution system do not occur within the next 2 years, it does not appear

that the wellfield capacity would be exceeded during this period. However, due to the proposed construction of two luxury hotels (scheduled for completion by November 1985), planning efforts should commence, so that sufficient quantities of water will be available to satisfy the significant increase in demand at these locations.

The combined amount of water for golf course irrigation and potable demands will not substantially impact wellwater withdrawal in the short term. Withdrawals will remain relatively constant (0.5 MGD to 0.8 MGD) until such time as the volume of wastewater effluent, plus R.O. reject water, exceeds the volume that can be placed on the golf course.

It is recommended, from a prudent planning standpoint, that PBID begin efforts immediately to identify new and/or additional raw water supply sources. The most feasible and implementable alternatives should be known by no later than the fall of 1984. Assuming six months to a year are needed to design, finance and construct additional facilities, the expanded supply system should be available by the fall of 1985.

Items to be considered and possible alternatives that merit further study would include, but not be limited to the following:

- A. Perform an in depth analysis of customer demands to justify and/or explain their validity. Put into effect all possible water conservation efforts that are in keeping with the District's objectives to provide a safe, adequate and dependable water supply.

- B. Re-evaluate on a preliminary basis, additional water supply source availability. The preliminary review will consider and document the relative cost, water quality, timing and management/political aspects of each alternate source to satisfy potable, irrigation or golf course demand. Sources to be considered include:
 - o Watertable Aquifer/On-Site Lakes - Golf Course (G.C.) and/or Irrigation (Irr.) only.
 - o Coastal Ridge Aquifer/On-Site - G.C., Pot., or Irr.
 - o City of Naples Coastal Ridge Wellfield - G.C., Pot. or Irr.
 - o New Wellfield along Immokalee Road or at some other location - G.C., Pot. or Irr.
 - o Floridan Aquifer/On-Site - Potable Only.
 - o City of Naples - Potable Only
 - o Collier County - Potable Only.

- C. Perform hydrogeological testing and/or studies to quantify the recharge of on-site groundwater systems as a result of importing water from off-site. The amount that can be reasonably justified as excess recharge can then be the basis for a request to water authorities for recycling/re-use.

After the above studies and testing is completed, efforts should begin to secure permits and approvals for the additional needed water supplies.

September 17, 1983

Raw Water Transmission Line:

The raw water transmission line was scheduled to be expanded in phases, as demand warranted, by constructing a parallel pipeline. As discussed above, because of the demand from the proposed hotels, expansion may be necessary within the next two years.

A recommendation as to the timing of an expansion to the transmission line will be given in conjunction with the final solution for new water supply sources. With a capacity of 1.65 MGD, the system could handle potable demands for 3 to 5 years and possibly longer. However, if necessary, incremental increases to both the wellfield and the transmission line capacities could be accomplished by selectively constructing portions of the parallel pipeline. Selective expansion of pipeline segments would reduce the hydraulic loss between the wellfield and the plant, thereby allowing more water to be pumped. As an example, construction of a parallel 16-inch main for at least half of the pipeline distance would allow an approximate 0.75 MGD increase in the capacity of the supply system. Obviously additional wells and some booster pump station modifications would also be necessary.

Pelican Bay Improvement District

September 12, 1983

Reverse Osmosis Water Treatment Plant:

Recent flow projections indicate that in the first quarter of 1984, potable water demand should reach 0.225 MGD. Recent flow demands from the R.O. plant have already exceeded 0.200 MGD. It is possible that sustained peak flows over 0.200 MGD could result in water shortages during the next tourist season. It would then appear that a plant expansion is in order.

The latest cost estimates indicate that a plant expansion of .25 MGD can be accomplished at a cost of approximately \$140,000. Retrofitting of the existing plant, which is also designed for .25 MGD, can be achieved for approximately \$110,000.

It is our recommendation that the expansion side of the plant, which currently contains the necessary piping, racks, pumps and chemical feed system to accommodate a .25 MGD expansion, but does not include the vessels and membranes, should be expanded within the next six months. Expansion of this side will also allow the use of blend water amounting to 100,000 to 150,000 gpd, depending on which finished water parameter is the limiting factor (e.g. hardness or TDS). The expanded plant system (500,000 gpd) plus blend water, would then yield an overall plant capacity of between 600,000 and 650,000 gpd. Current projections indicate that sometime during the year 1986, the plant would have to be expanded

again. At that time, it may be sufficient to buy some time by retrofitting the existing R.O. plant with state-of-the-art membranes. This would again allow an additional 100,000 to 150,000 gallons of blending capability. This additional blending may allow sufficient capacity to carry PBID into the year 1987, depending on how closely construction follows current projections.

Ground Storage:

The ground storage of potable and irrigation water is adequate at the present time. Addition of a new 1.0 MG potable storage tank can be delayed until the next bond issue. Consideration is now being given to replacement of the existing natural draft aerators with degasifiers and air scrubbers. This new installation will eliminate the frequent objectionable odors from the wellwater system. The cost of the new degasification/scrubber system is estimated at \$170,000.

Potable Water Distribution System:

The proposed potable water distribution system consists of looped watermains in Pelican Bay Boulevard, Green Tree Drive and proposed Road "A". The watermains in Pelican Bay Boulevard and Green Tree Drive are 12-inch diameter, while the main in proposed Road "A" is 8-inch diameter.

A long "dead-end" watermain is also proposed within Pelican Beach Drive. This watermain is 12-inch diameter between Pelican Bay Boulevard and the proposed bridge in the Northwest Fill Area. South of the bridge this watermain is reduced to 10-inch diameter.

To increase system pressure during the maximum hour of the maximum day, an additional loop from the treatment plant is required. This loop is made by a proposed 16-inch watermain which runs along the Service road and connects the discharge of the high service pumps with an existing 12-inch watermain in Gulf Park Drive.

The "WATER MASTER PLAN" included with this report shows the major potable watermains proposed in Pelican Bay. Potable watermains within individual development tracts are not shown, since their size and location will depend on the configuration of the final site plan for these areas. These internal watermains have very limited service areas requiring relatively small volumes of water which are always less than the available supply.

Irrigation Water Distribution System:

The proposed irrigation water distribution system consists of looped watermains in Pelican Bay Boulevard, Green Tree Drive and proposed Road "A". The watermains in Green Tree Drive, proposed Road "A", and Pelican Bay Boulevard east of Pelican Beach Drive are all 12-inch diameter. The watermain in Pelican Bay Boulevard from the water treatment plant to the intersection of Pelican Beach

September 12, 1983

Drive is proposed to be 16-inch diameter. Since the existing portion of this watermain is 12-inch diameter pipe, a parallel 12-inch watermain is proposed for this length. These parallel 12-inch diameter watermains are hydraulically equivalent to one 16-inch pipe.

A long "dead-end" watermain is also proposed within Pelican Beach Drive. This watermain is 16-inch diameter its entire length from the intersection of Pelican Bay Boulevard to the southern end of the northwest fill area.

To provide minimum residual pressure in the distribution system in the vicinity of a fire, an additional loop from the utility site is required. This loop is made by a proposed 16-inch watermain which runs along the Service Road and connects the discharge of the high service pumps with an existing 12-inch watermain in Gulf Park Drive. A parallel 12-inch watermain is proposed in Gulf Park Drive from the Service Road eastward to the intersection of Ridgewood Drive. This length of parallel watermain is hydraulically equivalent to one 16-inch pipe and is required to provide adequate future fire protection within Pelican Bay.

The "WATER MASTER PLAN" included with this report shows the major irrigation watermains proposed in Pelican Bay. Irrigation watermains within individual development tracts are not shown, since their size and location will depend on the configuration of the final site plan for these areas. These internal watermains have very limited service areas requiring relatively small volumes of water which are always less than the available supply.

During the discussion regarding the sources of additional water supply for the District and the excessive use of irrigation water, both the Board members and representatives of the Developer voiced the opinion that a conservation education for the District's consumers would be in order with the result of less irrigation water being "wasted". The philosophy of the District, heretofore, has been to supply water as it has been demanded.

At this time, Mr. Turner moved, seconded by Mr. Brown and carried unanimously, that the Engineers' Master Plan Update report be accepted as presented and the District's engineers be authorized to proceed with the recommendations as stated in the said report.

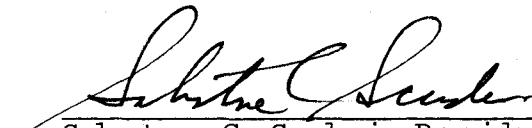
AUTHORIZATION TO BID GREENTREE DRIVE WATER-SEWER FACILITIES - APPROVED

Following Mr. Caldwell's presentation of the request, Mr. Turner moved, seconded by Mr. Brown and carried unanimously, that the construction of the water/sewer facilities on Greentree Drive be put out for bid.

NEXT BOARD MEETING TO BE OCTOBER 10, 1983

ADJOURNMENT

There being no further business to come before the Board, Mr. Turner moved, seconded by Mr. Brown and carried unanimously, that the meeting be adjourned - Time: 5:50 P.M.



Salvatore C. Scuderi, President
PELICAN BAY IMPROVEMENT DISTRICT