SFWMD

BASIS OF REVIEW FOR WATER USE PERMIT APPLICATIONS WITHIN THE SOUTH FLORIDA WATER MANAGEMENT DISTRICT

JANUARY 1985

SOUTH FLORIDA WATER MANAGEMENT DISTRICT

BASIS OF REVIEW FOR WATER USE PERMIT APPLICATIONS WITHIN

THE

SOUTH FLORIDA WATER MANAGEMENT DISTRICT

Resource Control Department
South Florida Water Management District
Post Office Box "V"
West Palm Beach, Florida 33402

January 1985

This public document was promulgated at an annual cost of $278.00 or $.55 per copy to provide information on District regulatory requirements for potential permit applicants.

Table of Contents

3.1.2 Compatibility

3.1.2.1 Land Use
3.1.2.2 Water Supply
3.1.2.3 Surface Water Management
3.1.2.4 State, Regional, and Federal Agencies
3.1.2.5 State Water Policy

3.2 Technical

3.2.1 Supply

3.2.1.1 Potentially Permittable Water

3.2.1.1.1 Basin Yield
3.2.1.1.2 Allocated Water
3.2.1.1.3 Existing Legal Uses of Water
3.2.1.1.4 Existing Land Use

3.2.1.1.4.1 Disposal of Industrial Wastewater

3.2.1.1.5 Environmental Impact

3.2.1.1.5.1 Direct Relationship to Water Resources
3.2.1.1.5.2 Indirect Relationship to Water Resources
3.2.1.1.5.3 Other Environmental Features Evaluated on a Case by Case Basis
3.2.1.1.5.4 Preferred Habitats
3.2.1.1.5.5 Natural vs. Proposed

3.2.1.1.6 Public Health and Water Quality
3.2.1.1.7 Saline Water Intrusion

3.2.1.1.7.1 Use of Fresh Water
3.2.1.1.7.2 Saline Water Movement
3.2.1.1.7.3 Use of Saline Water

3.2.1.1.8 Minimum Stages, Levels, and Flows
3.2.1.1.9 Competing Uses

3.2.2 Demand

3.2.2.1 Public Water Supply

3.2.2.1.1 Reasonable Need for Requested Allocation
3.2.2.1.2 Projected Population
3.2.2.1.3 Per Capita Daily Water Use
3.2.2.1.4 Other Uses
3.2.2.1.5 Maximum Day Withdrawal

3.2.2.2 Industrial

3.2.2.2.1 Reasonable Need
3.2.2.2.2 Maximum Daily Withdrawal

3.2.2.3 Mining (dewatering)

3.2.2.3.1 Reasonable Need
3.2.2.3.2 Maximum Day Withdrawal

3.2.2.4 Irrigation and Related Water Uses

3.2.2.4.1 Reasonable Need for Irrigation
3.2.2.4.2 Supplemental Crop Requirement
3.2.2.4.3 System Efficiency
3.2.2.4.4 Allocation Quantities
3.2.2.4.5 Citrus Irrigation
3.2.2.4.6 Pasture Irrigation
3.2.2.4.7 Livestock
3.2.2.4.8 Freeze Protection
3.2.2.4.9 Restricted Allocation Areas

3.2.2.4.9.1 Allocation of Floridan Aquifer Water in the Eastern Okeechobee-Northwestern St. Lucie Basin
3.2.2.4.9.2 Pumps on Floridan Wells
3.2.2.4.9.3 New Uses from District Canals C-23, C-24, and C-25: Changing Pump Sizes on District Canals C-23, C-24, and C-25
3.2.2.4.9.4 New Uses from District Canals L-1, L-2, and L-3
3.2.2.4.9.5 New Uses from Lake Istokpoga-Indian Prairie Area

3.3 Conservation

3.3.1 Irrigation
3.3.2 Public Water Supply
3.3.3 Mining (dewatering)
3.3.4 Industrial

4.0 Application Support Hydrogeologic Data

5.0 Staff Recommendation

5.1 General

5.1.1 Amount and Source
5.1.2 Duration of Permit

5.1.2.1 Public Water Supply and Industrial
5.1.2.2 Mining (dewatering)

5.1.2.3 Irrigation

5.1.3 Type of Use
5.1.4 Monitoring

5.1.4.1 Pumpage
5.1.4.2 Water Quality

5.1.4.2.1 Saline Water Intrusion Monitoring
5.1.4.2.2 Other Pollution Monitoring

5.1.4.3 Rainfall
5.1.4.4 Groundwater Level Monitoring

5.1.5 Use of the Lower Hawthorn in Lee County

5.2 Limiting Conditions

5.2.1 Standard Conditions
5.2.2 Special Conditions

5.2.2.1 Groundwater
5.2.2.2 Public Water Supply
5.2.2.3 Industrial
5.2.2.4 Mining (dewatering)
5.2.2.5 Irrigation
5.2.2.6 Golf Course Irrigation

5.2.3 Monitoring/Data Collection Conditions

5.2.3.1 Potentiometric Head or Water Level
5.2.3.2 Rainfall
5.2.3.3 Water Quality

5.2.3.3.1 Saline Water Intrusion
5.2.3.3.2 Pollution/Contamination

5.2.4 Service Area Regulated by Public Service Commission
5.2.5 Artesian Floridan Wells
5.2.6 Desalination of Saline Water
5.2.7 Additional Conditions for Applications of Special Concern

5.2.7.1 Conditions on Applications of Special Concern

6.0 Renewals and Modifications

6.1 Requirements

7.0 Water Shortage or Water Shortage Emergency

Basis of Review for Water Use Permit Applications within the South Florida Water Management District

1.0 Introduction

1.1 Objectives - Under Part II of Chapter 373, Florida Statutes, and Rules Chapter 40E-2, and 40E-20, Florida Administrative Code, the District is responsible for the permitting of the use of water within its jurisdictional boundaries. The objective of this document is to identify the procedures and information used by District Staff in permit application review. The objective of the review is to insure that the applicant shows that the use is a reasonable-beneficial use and that such use will not interfere with any presently existing legal use of water and is consistent with the public interest.

1.2 Application Review Process - The District has established two types of water use permits: individual (40E-2) and general (40E-20). The primary differences between a general and individual permit is that in the general permit process 1) the authorization to commence water use is given after a positive review and evaluation by Staff, and 2) the review period is generally short in comparison with the individual permit process. The general permit process has been established to create a quicker review process for small uses which have little potential for causing adverse impacts, not to allow lower standards to be met. When in doubt as to the specific process applicable, applicants for a water use permit should refer to District rules (40E) or consult with District Staff.

1.2.1 Application Form - All applicants for individual permits should complete Application Form, 0050. The type of use, system complexity, location of proposed withdrawal and source (including specific aquifer), and volume of water withdrawn determine the detail and extent of additional information required for permit review. In general, applications should be supported with more extensive and detailed information as indicated by the information checklist when the application is for the following:

1) large public water supply uses,
2) large irrigation uses,
3) groundwater withdrawals in areas of high demand and limited groundwater availability,
4) large withdrawals in close proximity to environmentally sensitive areas, or
5) withdrawals close to coastal areas, areas with poor water quality, potential sources of pollution.

Engineered systems are required by state law to have plans and calculations signed and sealed by a Florida Professional Engineer. Applicants are encouraged to meet with Staff prior to application submittal (pre-application meeting) to discuss additional information requirements. In some cases professional assistance may be necessary in application preparation. Application for the use of surface water may require a surface water management or right-of-way occupancy permit. Applications for mining dewatering use must address both withdrawal and disposal of water. If the disposal involves permanent on-site storm drainage facilities, a separate surface water management permit will be required. An application involving a proposed project will require a concurrent surface water management permit.

The application form has been prepared to supply only the most basic information. Since review time is dependent on informational sufficiency it is to the Applicant's benefit to submit all information to allow review to proceed without delays. In addition to the application form, the applicant must provide responses to the appropriate checklists (Part B-II).

1.2.1.1 Phased Projects - Projects that are to be developed in phases should submit a master plan for water use. Water use should be projected for all phases within the time frame that the District will consider projected water use. The primary interest of the District is to insure that impacts of projected water use are evaluated fully and that the full demands of a project are compared with water availability. However, water cannot be reserved beyond the time of permit expiration.

1.2.2 Checklists - Each application must be accompanied by the responses to the appropriate checklist referenced under Part B-II. Public water supplies should use the public water supply checklist. Livestock, nursery, recreational area, soil flooding, agricultural, freeze protection, golf course, and landscaping irrigation water uses should use the irrigation water use checklist. Mining (dewatering) water uses should use the mining (dewatering) checklist. Power production, commercial and industrial process, cooling and air conditioning, navigation, water-based recreation, aquacultural, diversion and impoundment into non-District facilities and other uses not mentioned above should use the industrial water use checklist.

1.2.3 General Permit Notice - Applicants for general permit authorization must complete the Notice of Intent to Use Water Form 0155, providing the supplemental information requested therein. Comments above concerning informational sufficiency are also applicable to general permits.

1.3 Criteria Flexibility - The criteria contained herein are flexible with the primary goal being to meet District water resource objectives. Performance criteria are used where possible. Depending on the magnitude of impacts, other methods will be considered by Staff, or presented to the District's Governing Board for its consideration.

1.4 Simultaneous Reviews - In addition to purely technical aspects, legal and institutional factors will be considered. Because of legal time constraints for processing permits, the Applicant is advised to contact interested agencies, organizations, and affected citizens prior to submitting a formal application to the District. Summaries of meetings and copies of responses from appropriate parties should be included with the application. It may be in the Applicant's best interest to seek simultaneous reviews from all agencies with jurisdiction in related matters. This provision is not intended to preclude the submission of an application to this District prior to receiving other necessary approvals. The application should contain a status report on other approvals being sought, with an indication that the water use is consistent with those approvals. Issuance of a water use permit by the District does not relieve the Applicant of the responsibility of obtaining all necessary federal, state, local, or special district permits or authorizations for related activities.

For those projects which are proposed and involve a surface water management system, the water use application will not be considered complete until the surface water management application is complete.

1.5 **Existing but Unpermitted Use** - An existing but unpermitted use of water will be evaluated as a proposed use. Facilities which are already constructed will not weigh in favor of a recommendation for a water use allocation.

1.6 **Well Construction Permit** - Beginning January 1, 1985, all public water supply wells and all other wells six inches or larger in diameter must be permitted by the District prior to construction, repair, or abandonment and must be constructed, repaired, or abandoned by a licensed well contractor as outlined in Chapter 40E-3, Water Wells. All other water wells must comply with the standards in 40E-3 or 40E-30.

2.0 Explanation of Terms

2.1 **Annual Allocation** - The permitted quantity of water for use on a yearly basis as approved by the Governing Board of the District.

2.2 **Area of Influence** - The area of land surrounding a well or wellfield which may be impacted by the wellfield or, as a consequence of regional groundwater gradients, a land area which may impact the wellfield because groundwater flow under the land area is towards the wellfield. The area of influence of a wellfield may be determined on a case-by-case basis by defining the drawdown induced by proposed withdrawals as the boundaries of the area of influence.

2.3 **Cone of Depression** - The conical shape taken by the potentiometric surface showing the variation of drawdown with distance due to pumping from a well or wellfield within its area of influence.

2.4 **Conservation** - The act of reducing water usage through voluntary or mandatory altering of water use practices and/or installation of low water use systems, fixtures, and devices.

2.5 **Current Pumpage** - The quantity of water an applicant has pumped during the most recent 12 month period preceding the date of application.

2.6 **Freshwater** - An aqueous solution with a chloride concentration equal to or less than 250 milligrams per liter (mg/l).

2.7 **Historical Maximum Day Withdrawal** - The maximum quantity of water that was pumped on any one day during the current pumpage period.

2.8 **Permitted Maximum Day Withdrawal** - The maximum quantity of water which can be withdrawn on a daily basis as approved by the Governing Board.

2.9 **Presently Existing Legal Use** - A use that is : 1) under District permit, or 2) in existence for those uses which are exempt from permit requirements at the time the application is filed.

2.10 **Potentially Permittable Yield** - The amount of water that can be withdrawn from a wellfield on an annual basis without creating adverse impacts,

including but not limited to impacts on the wellfield itself, adjacent uses, the environment, water bodies, land use, and water quality.

2.11 Saline Water - An aqueous solution with a chloride concentration greater than 250 mg/l and less than that of seawater.

2.12 Saline Water Interface - The saline water interface is that hypothetical surface of chloride concentration between freshwater and seawater where the chloride concentration is 250 mg/l at each point on the surface.

2.13 Seawater - An aqueous solution with a chloride concentration equal to or greater than 19,000 mg/l.

2.14 Service Territory or Service Area - The geographical region in which a water supplier has the ability and the legal right to distribute water for use.

2.15 Step Drawdown Test - A procedure for determining the efficiency of a pumping well by measuring the steady-state drawdown within the well at various constant discharge rates.

2.16 System Efficiency (Irrigation) - The ratio of the volume of water utilized by a crop to the volume of water applied.

2.17 Use Class - The use classes are described under 40E-21.651. These include but are not limited to agricultural, aquacultural, commerical and industrial processes, cooling and air conditioning, dewatering, diversion and impoundment into non-District facilities, freeze protection, golfcourse, landscape, livestock, navigation, nursery, other outside uses, power production, recreation areas, soil flooding, water-based recreations, and water utility use.

3.0 Criteria

3.1 Administrative

3.1.1 Control Over Activities - Applicants must have legal control over the activities or situations for which they desire a permit. This includes service areas for public water supply, lands which they wish to irrigate, and lands on which pumps or wells will be located.

3.1.1.1 Public Water Supply Service Area - If an Applicant refuses to serve a new demand located within either the existing or proposed service area, the permitted allocation may be subject to modification.

3.1.1.1.1 Public Service Commission (PSC) Territory - Applicants regulated by the Public Service Commission must submit as part of the application a copy of the PSC certification describing the service area. If the Applicant proposes a new service area in addition to an existing certified area then a permit condition requiring that PSC certification for the expansion be obtained within two years of permit issuance will be added to the permit.

3.1.1.1.2 Dade County Service Area - Applicants within Dade County must submit documentation that their service area is franchised by the Miami Dade Water and Sewer Board.

3.1.1.1.3 **Local Government Franchise** - If the Applicant is regulated by local government, the service area must be that which has been franchised by the local government unless the Applicant submits documentation that local government will allow the utility to operate outside the franchised area. The Applicant must submit a copy of a local government franchise with the application, if applicable.

3.1.1.1.4 **Unregulated Service Territory** - Applicants not regulated by either the PSC or local government must confine their service area to that which can reasonably be served within a projected ten year time frame, except for Broward and Lee county applicants, who must confine their service area to that which can reasonably be served within a projected five year time frame. Municipal Applicants must justify service areas outside their municipal boundaries by attaching those agreements or contracts that authorize service to these areas.

3.1.1.1.5 **Conflicting Service Territories** - Conflicting service area claims between Applicants, or between Applicant and an unregulated water service area, must be resolved by the involved parties. Unresolved disputes will prompt the Staff to recommend an allocation based only on the non-disputed portions of the projected service area.

3.1.2 **Compatibility** - Water use application must be consistent with the requirements and approvals of other governmental agencies that exercise jurisdiction over related matters, including comprehensive plans, zoning, public health, and natural resources.

3.1.2.1 **Land Use** - Before an application will be considered for the issuance of a water use permit the proposed land use must be compatible with all of the following: existing zoning, local government comprehensive plan and wellfield protection ordinance. Making application to local government for rezoning of the land will not suffice. Any necessary rezoning must be officially obtained prior to the application for a water use permit.

If the proposed project is a Development of Regional Impact (DRI) a copy of the final approved Development Order must be provided as part of the application. Detailed hydrologic data that has been required in the DRI process may be utilized as a submittal in the water use permit application subject to review by the District.

3.1.2.2 **Water Supply** - The proposed water use should not be inconsistent with positions taken by the District on the water supply element of the local government comprehensive plan, short term and long term county water supply plans, District water supply plans and other regional or subregional water resource plans.

3.1.2.3 **Surface Water Management** - The impact of withdrawals on an existing or conceptually permitted surface water management system must be evaluated and submitted as part of the application. When surface water management is related to water use through considerations of aquifer recharge, overdrainage, and/or saline water intrusion, the Applicant must provide a map of control elevations and evaluate the impact of the surface water management system on water availability.

3.1.2.4 State, Regional, and Federal Agencies - The Applicant must provide information on approvals from agencies such as DER, EPA, and Regional Planning Councils that have control over related activities.

3.1.2.5 State Water Policy - In addition to District rules, application must be consistent with State Water Policy Chapter 17-40 Florida Administrative Code (F.A.C.).

3.2 Technical - All applications are reviewed for compatibility of both supply and demand plus the ability of each application to meet District rules and policies.

3.2.1 Supply - District permits are required for the usage of all fresh and saline water sources. Sources are described as surface and groundwater, which can be further identified with the name of the aquifer and/or water body. Seawater and treated wastewater effluent are not subject to water use permit action.

3.2.1.1 Potentially Permittable Water- Potentially permittable water is that which is possibly available for use at a specific site. Potentially permittable water will be determined by evaluation of the following factors.

3.2.1.1.1 Basin Yield - Basin yield is the amount of water that can be withdrawn from a specific source in a basin without causing water level or potentiometric head declines that would not be in the public interest. Determination of basin yield involves delineation of a water budget, including: rainfall, evaporation, evapotranspiration, groundwater and surface water inflows and outflows, and changes in stored water. If water shortages have historically occurred in the Applicant's area, Staff will evaluate on a case-by-case basis the reasonableness of additional allocations. In all cases, water shortage refers to a lack of water availability, not a lack of withdrawal facilities. When appropriate studies have not been conducted, basin yield may be calculated by establishing a conservative groundwater recharge factor for the basin. This method of estimation is particularly true of island or peninsular areas where rainfall recharge is the primary or only source of water.

3.2.1.1.2 Allocated Water - When considering a new allocation, Staff will consider the amount of water already allocated and exempt uses. If a new use requests an allocation in an area where there is not enough water to satisfy allocated water, exempt uses and proposed demands, Staff will determine an allocation that, in the evaluation of Staff, when added to existing allocations and exempt uses, will not exceed the basin yield.

3.2.1.1.3 Existing Legal Uses of Water - The proposed use of water must not cause an unmitigated adverse impact on a legal use of water existing at the time of permit application. An adverse impact is defined as a decrease of ten percent or more in the withdrawal capability of any presently existing legal use. The percentage reduction in withdrawal capability is calculated in the following way: % Reduction = (1 - (withdrawal capability after impact divided by the withdrawal capability prior impact)) multiplied by 100.

In all cases, it is the Applicant's responsibility to evaluate and mitigate adverse impacts on presently existing legal uses. Mitigation may include pumpage reduction, replacement of the impacted individual's equipment to enable greater withdrawals, payment of cash for damages, drilling a new well farther away from the damaging well, etc.

3.2.1.1.4 Existing Land Use - The use of water must not adversely impact off-site land use existing at the time of permit application. The owner of a wellfield, well, or mining pit may accept adverse impacts on his own land use, as long as the public interest is not detrimentally affected. Adverse impacts include, but are not limited to: land subsidence or collapse as a consequence of water table or potentiometric head drawdown; significant lowering of lake levels, wetland water levels or drainage of ponds and other water bodies; appreciable damage or destruction of landscape and other vegetation. It is the Applicant's responsibility to evaluate and mitigate adverse impacts on off-site existing land use.

3.2.1.1.4.1 Disposal of Industrial Wastewater - Depending upon the nature of the industrial wastes generated, surface water and/or groundwater quality monitoring programs will be required as a condition of a District industrial water use permit. Although not normally associated with industrial water use, discharge quantity and quality may be subject to storm water regulations, with District surface water management rules applicable.

3.2.1.1.5 Environmental Impact - The following categories of environmental features will be used by the Staff in evaluating impacts:

3.2.1.1.5.1 Direct Relationship to Water Resources - Environmental features directly related to the water resources of the District, such as:

1) Wetland habitat except those previously affected by drainage, land clearing, earthwork, or those which have been invaded by exotic species and are in a state of environmental decay, and
2) Natural water bodies.

3.2.1.1.5.2 Indirect Relationship to Water Resources - Environmental features which may be indirectly related to the water resources of the District, such as:

1) Intermittent ponds, and
2) Significant habitat diversity support systems, usually consisting of highly productive mixed upland and wetland systems with appropriate buffer areas.

3.2.1.1.5.3 Other Environmental Features Evaluated on a Case-by-Case Basis

3.2.1.1.5.4 Preferred Habitats - Preferred habitat for rare, endangered, or threatened species of plants or animals will be identified.

3.2.1.1.5.5 Natural vs. Proposed - The actual impact resulting from changes to the natural site will be predicted by considering the existing natural system as altered by the proposed project.

3.2.1.1.6 Public Health and Water Quality - The Applicant for a public water supply permit must request that other governmental agencies responsible for public health evaluate the application for impacts on public health. If a response is made by those agencies then the response must be submitted as part of the application. Agencies responsible for public health include the following: Department of Environmental Regulation; Health Departments for Dade, Broward, Palm Beach, Polk, and Lee Counties; Dade County Department of Environmental Resources Management; and Lee County Environmental Protection Services.

3.2.1.1.7 Saline Water Intrusion

3.2.1.1.7.1 Use of Fresh Water - The use of fresh water must not:

1) cause significant inland movement of saline surface water;
2) cause significant inland movement of the saline water interface within an aquifer system; or
3) otherwise reduce the amount of potable water because of inland movement of the saline water interface, upconing of saline water that may be beneath the freshwater, or vertical leakage of connate saline water.

3.2.1.1.7.2 Saline Water Movement - Significant movement is defined in the following way:

1) saline water encroachment that adversely affects the Applicant, or other existing legal uses, or is otherwise detrimental to the public interest or the public health, safety and general welfare.

Assessment of the potential for saline water intrusion will be made on a case-by-case basis, as will the reduction of storage capability of the aquifer. The Applicant must submit proof that the use of fresh water will not cause the problems outlined in 3.2.1.1.7.1 (1), (2), and (3) above.

Staff will not recommend an increase in allocation under the following circumstances:

1) the hydraulic gradient between the wellfield and saline water is such that a hydraulic head (mound of fresh water) less than one foot National Geodetic Vertical Datum (NGVD) exists between the wellfield and saline water during the months of November through April,
2) monitoring wells within 800 feet of a production well reflect chloride concentration increases at the base of the aquifer, indicating long term advancement of the saline front toward the wellfield,
3) other evidence shows saline water intrusion will be a serious threat to the wellfield if pumpage is increased.

The Staff may recommend implementation of a "Saline Water Intrusion Monitoring (SWIM) Program" as a special condition to permits issued to applicants who are located near saline water. The criteria used to determine if a SWIM Program will be recommended are listed under Section 5.1.4.2.

3.2.1.1.7.3 **Use of Saline Water** - This section includes the use of saline water as a source of supply including but not limited to its use for irrigation and public water supply through the use of desalination treatment. The use of saline water may cause saline water intrusion, but not to the extent of adversely affecting other existing legal uses of water, the applicant, or the public health safety and general welfare. Evaluation of proposed withdrawals will be accomplished on a case-by-case basis. The Applicant must provide proof that 1) the use of saline water will not prevent the Applicant from providing potable water as defined by DER in the case of public water supplies, 2) the proposed use of water will not have an unmitigated adverse impact on existing-legal uses, and 3) the use is in the public interest.

3.2.1.1.8 **Minimum Stages, Levels, and Flows** - Some withdrawals will be subject to limitations because of minimum surface or groundwater levels defined in District rules, operation schedules, management plans, and by prior District permits. The geographic coverage of such levels is variable and changes as new permits are issued and old ones cancelled. Pre-application meetings with District Staff are encouraged if questions about these criteria arise.

3.2.1.1.9 **Competing Uses** - Applications are declared to be competing when Staff evaluation indicates that the proposed water use by two or more Applicants will, in the estimation of Staff, exceed either the basin yield or the amount of water which exists at a particular location and is capable of being used.

In the case of competing applications, Staff will recommend that the Board approve or modify the application that best serves the public interest. In the event that both Applicants serve the public interest equally, Staff will recommend that the Board give preference to a renewal application over a new application.

If competing public water supply Applicants are all renewals or all new applications and each Applicant serves the public interest equally, Staff will calculate an equitable allocation for each applicant in the following manner:

1) per capita consumption will be set equal to the smallest value of either of the following: a) the District-wide average, or b) the least value of all Applicants in competition,
2) projected water use based on population growth for all Applicants will be reduced on a percentage basis until the sum total of all withdrawals is equal to the sum total of water, which in the estimation of Staff, can be allocated.

3.2.2 **Demand** - The highest allocation that Staff can recommend is based on reasonable need. If all criteria are satisfied, Staff will recommend as the permitted allocation the quantity of water constituting a reasonable-beneficial use of water (F.A.C. 17-40). The District computes,

projects, and confirms demands as described below (Sections 3.2.2.1.1, 3.2.2.2.1, 3.2.2.3.1, and 3.2.2.4.1).

Should an Applicant believe that his situation requires special consideration he should so advise the Staff. Examples of unusual situations include:

1) industrial use of public water supply that invalidates traditional per capita demands,
2) circulation systems for fish and other marine organisms, recreation, hydroponics, etc., and
3) air conditioning systems.

3.2.2.1 Public Water Supply

3.2.2.1.1 Reasonable Need for Requested Allocation - The Applicant must demonstrate a reasonable need for the requested allocation. For public water supply systems, reasonable need is calculated by multiplying the ten year projected permanent population (five years for Broward and Lee counties) for an authorized service area by the calculated or estimated per capita daily water use. Projected population shall be determined using the methods and data sources specified in subsection 3.2.2.1.2; authorized service areas shall be determined using the information in subsection 3.1.1.1; and per capita daily water use shall be calculated or estimated as prescribed in subsection 3.2.2.1.3. Other methods of determining reasonable need may be used as approved by Staff.

If the Applicant's requested allocation exceeds the reasonable need as calculated pursuant to this section, the Staff will recommend a projected need based on its analysis of population projections for the service area and historical or design per capita use of water.

3.2.2.1.2 Projected Population - Ten years of permanent population growth (five years in Broward and Lee Counties) should be projected for the service area by using the local comprehensive land use plan and its amendments. In the absence of suitable information in the comprehensive plan, one of the following sources of growth projections should be used: 1) University of Florida, Bureau of Economic and Business Research Population Data, or 2) Regional Planning Council information. If the Applicant feels that the population projected by any of the above sources is inaccurate for the proposed service area, the Applicant may verify the inaccuracy by submitting written concurrence by a local government planning agency. Developer agreements alone will not be considered acceptable projections for population growth.

Staff will also consider evidence submitted in the application that indicates adjustments to the population base due to changes in the percentage of residents in the service area actually served by the utility. Information about large unique users not related to population, such as golf courses, and industrial plants will also be considered.

For small developments, virtually no information on projected population may be available at the local government level. In this case, the Applicant may estimate the population based on a persons per

unit figure for the number of dwelling units in the development. The persons per unit figure must be verified by local government.

3.2.2.1.3 **Per Capita Daily Water Use** - Historical average per capita daily water use will generally be acceptable as a water use for the projected future population. Historical average per capita daily water use is calculated either by dividing average day water withdrawals for the current pumpage period (most recent twelve months of pumpage data) by the permanent resident population for the same period of time, or by determining the per capita daily water use as described above for each of the five most recent years and choosing the highest value.

The historical demand patterns may not always be appropriate for projection purposes. This may occur when there are current large users whose growth is not related to population, or when future development may take on characteristics very different than those of present development. In such cases, alternative per capita estimates will be appropriate and should be presented accompanied by necessary documentation. In the event that the historical usage is greater than 200 gallons per capita day (GPCD) the Applicant must submit information explaining the high per capita use.

If no historical use of water exists, a design per capita use acceptable to the District Staff may be used. For any proposed development, the design per capita use must be explained. For proposed residential development, the design per capita should be justified based on dwelling unit type, population characteristics, and seasonality of the population and by comparison with adjacent similar developments. The Applicant should clearly state what provisions are made for irrigation in residential developments. If the developer is providing on-site irrigation from a well or other source or if the owners may reasonably be expected to do so, the per capita demand of the population should reflect indoor use only. If no irrigation system is to be provided by the developer, per capita demand will then include reasonable irrigation demand as well as indoor use.

3.2.2.1.4 **Other Uses** - If unusual uses of the public water supply system would invalidate the use values obtained by multiplying per capita values by population, such information should be provided for consideration.

3.2.2.1.5 **Maximum Day Withdrawal** - The maximum daily withdrawal is determined by multiplying the average day allocation by an acceptable maximum day to average day withdrawal ratio. The methodology used in determining the maximum day to average day ratio will vary somewhat depending upon the available data. In general, the maximum day to average day withdrawal ratio is calculated by dividing historical maximum day withdrawal by the average day withdrawal for twelve months of record.

Listed below are methodologies used to calculate the maximum day to average day ratio depending on the available data. Extensive non-domestic use may cause variations in methodologies.

1) In cases where several years of pumpage records are available, a maximum day to average day withdrawal ratio is calculated for

each year. The most suitable ratio may then be chosen from the last three years of record.
2) For proposed developments, a ratio between 1.5 and 2.0 will be used, depending upon the operation of the utility, although engineering documents justifying a different ratio will be considered.
3) When a utility operates more than one treatment plant and the plants operate independently (no interconnections), a maximum daily withdrawal must be determined for each treatment plant and its associated wellfield(s).

3.2.2.2 Industrial

3.2.2.2.1 Reasonable Need for Industrial Water Use - A reasonable need for the requested allocation is based on the amount of water needed to perform an industrial process in an efficient, non-wasteful and economic manner.

3.2.2.2.2 Maximum Daily Withdrawal - A new industrial use with records for less than one year's duration must use a ratio between 1.5 and 2.0, although engineering documents justifying a different ratio will be considered.

3.2.2.3 Mining (dewatering) - Mining (dewatering) use is a withdrawal of water for the purpose of creating a dry working environment. Demands are computed on a case-by-case basis and may be related to rainfall conditions.

3.2.2.3.1 Reasonable Need for Allocation - A reasonable need for the requested allocation is the amount of water needed to be discharged from a mining pit in order to economically and effectively mine the pit. In some cases, dewatering may involve lowering the water table several feet to lower the level below "caprock," which is then used as an operating floor and drying surface. In other cases, it may involve completely dewatering a pit to allow pans and scrapers to remove minable rock and sand.

3.2.2.3.2 Maximum Day Withdrawal - Maximum day withdrawal criteria for industrial water use will also apply to mining dewatering water use applications. See Section 3.2.2.2.2 above.

3.2.2.4 Irrigation and Related Water Uses

3.2.2.4.1 Reasonable Need - The reasonable need for irrigation water use is equal to one of the following:
1) the supplemental crop requirement divided by the system efficiency if the installed capacity is capable of supplying the computed quantity,
2) the installed capacity, if this quantity is less than the supplemental crop requirement divided by the system efficiency,
3) the amount of irrigation water determined by the Institute of Food and Agricultural Sciences (IFAS) or that which IFAS is in agreement with,
4) the amount of irrigation water determined by District Staff, or

5) the supplemental crop requirement for citrus and pasture as defined in sections 3.2.2.4.5 and 3.2.2.4.6, respectively.

3.2.2.4.2 Supplemental Crop Requirement - The supplemental crop requirement is determined by using the method developed by the Soil Conservation Service (SCS) and described in the publication: Irrigation Water Requirements, Technical Release No. 21, United States Department of Agriculture, Soil Conservation Service, Engineering Division, 1970. This procedure utilizes a modified Blaney Criddle method to determine evapotranspiration and then determines the supplemental crop requirement using soil type and rainfall, among other variables. In most cases the supplemental irrigation requirement is determined for a two in ten year drought condition.

3.2.2.4.3 System Efficiency - The system efficiency factors listed below will be utilized in determining water allocation requirements, unless the Applicant can prove that a different factor is applicable for his particular system.

System	Method	Efficiency
Surface-gravity	Seepage, furrow	50%
	Semi-closed,closed pipe	50%
	Crown flooding	50%
	Subirrigation	50%
Sprinkler	Sprinkler	75%
	Volume gun, Traveling gun	75%
	Overhead	75%
Trickle	Drip	85%
	Spray jet	85%

3.2.2.4.4 Allocation Quantities - Irrigation allocations will be based on maximum daily withdrawals and annual withdrawals for applications of special concern. For other applications, allocations will be based on maximum monthly withdrawals. Maximum daily withdrawals will be computed by dividing maximum monthly withdrawals by 30. Maximum monthly withdrawals will be computed by choosing the irrigated month with the highest supplemental crop requirement. The annual withdrawal will be computed by determining the average annual withdrawal necessary to grow the crop.

3.2.2.4.5 Citrus Irrigation - The reasonable need for citrus is calculated using a monthly supplemental crop requirement of 5.3 inches in all areas of the District except the western portion of Orange County as shown in Figure B-1 and described on Figure B-2, where 5.9 inches must be used. The reasonable need is then calculated as in 3.2.2.4.1(1) or (2).

3.2.2.4.6 Pasture Irrigation - Unimproved pasture will not be given an allocation. An allocation for improved pasture may be given if the applicant documents that an irrigation system capable of irrigating the improved pasture will be or has been constructed and the details of such a system are provided. Only the irrigated area excluding roads, ponds, ditches, and forested areas will be considered

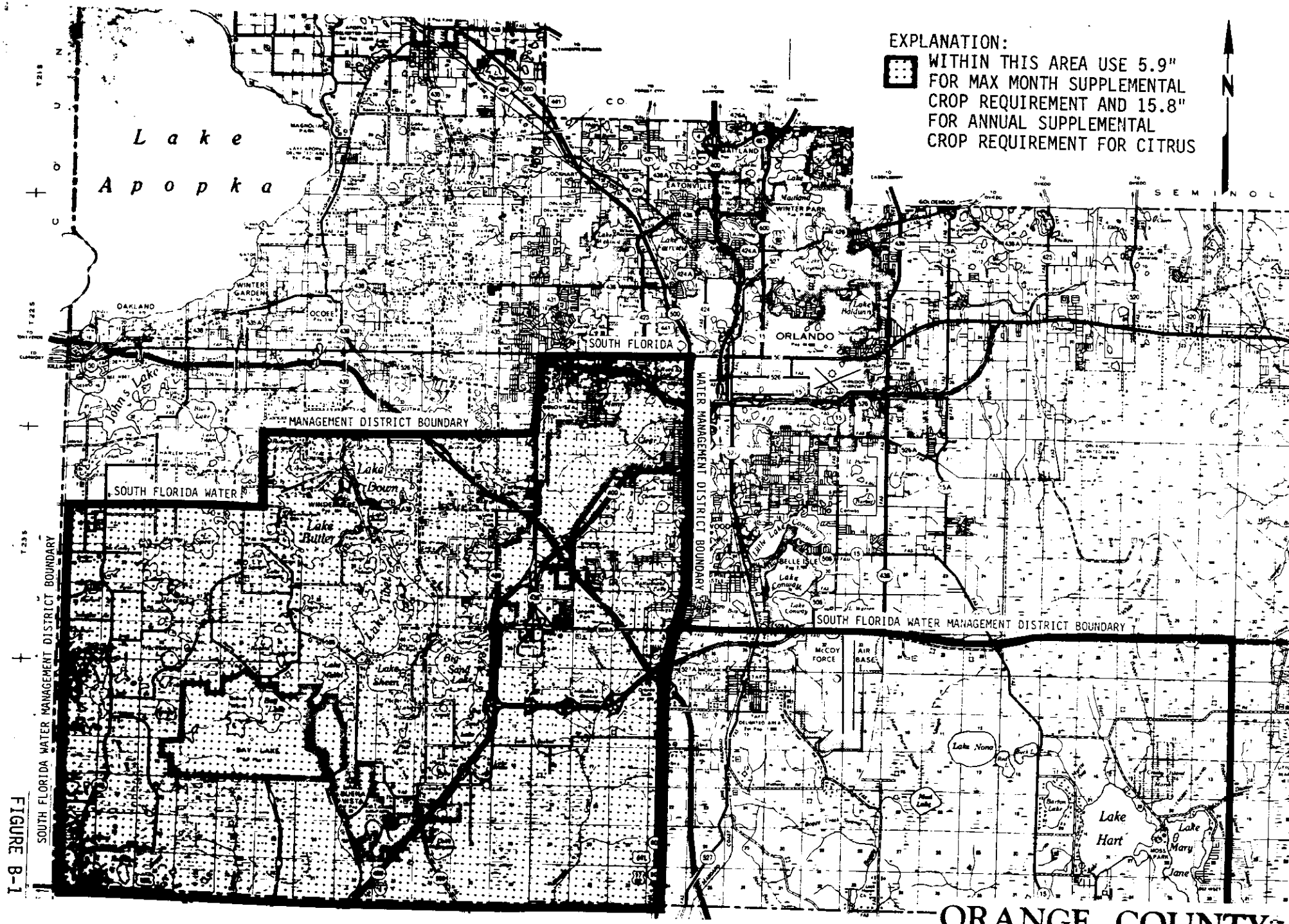


FIGURE 8-1

CITRUS ALLOCATION FOR WESTERN ORANGE COUNTY

ORANGE COUNTY
FLORIDA

Citrus Allocation
for
Western Orange County

Beginning at the intersection of the range line dividing Ranges 26 and 27 East with the township line dividing Townships 24 and 25 South; thence northerly along said range line between Ranges 26 and 27 East to the Northwest corner of Section 18, Township 23 South, Range 27 East; thence easterly along the section lines to the Southwest corner of Section 12 Township 23 South, Range 27 East; thence northerly along the section lines to the Northwest corner of Section 1, Township 23 South, Range 27 East; thence easterly along the township line between Townships 22 and 23 South to the Southwest corner of Section 31, Township 22 South, Range 29 East; thence northerly along the range line between Ranges 28 and 29 East to the Northwest corner of Section 30, Township 22 South, Range 29 East; thence easterly along the section lines to the Westerly right-of-way line of U.S. Highway 441; thence southerly along said Westerly right-of-way line to the intersection with the Orange-Osceola County line; thence westerly along said County line to the POINT OF BEGINNING.

Figure B-2

for an allocation. Only the acreage that will be put into improved pasture during the duration of the permit will be evaluated. The reasonable need for improved pasture will be calculated as in 3.2.2.4.1(1) or 3.2.2.4.1(2) but using the following evapotranspiration values in the SCS procedure:

Month	ET	Month	ET
Jan	2.02 inches	Jul	4.81 inches
Feb	2.51	Aug	4.79
Mar	3.35	Sep	3.85
Apr	4.21	Oct	3.42
May	5.21	Nov	2.50
Jun	4.25	Dec	1.92
	Total	42.84 inches	

3.2.2.4.7 Livestock - The reasonable need for livestock use will be derived by multiplying the estimated total number of animals by gallons needed per day per animal. Usage by beef cattle is 12 gpd/head; usage by dairy cattle is 35 gpd/head for drinking and 150 gpd/head for barn use; usage by horses is 12 gpd/horse.

3.2.2.4.8 Freeze Protection - A daily allocation for freeze protection will be evaluated when the Applicant 1) makes a request, 2) is able to show through system design that the water can be utilized, 3) application of water in the proposed manner will provide freeze protection, 4) the use of water is in agreement with IFAS research on the amount of water necessary for freeze protection, and 5) the requested amount of water necessary for freeze protection exceeds the allocation for irrigation. The use of water for freeze protection will be subject to technical review as described under 3.2.

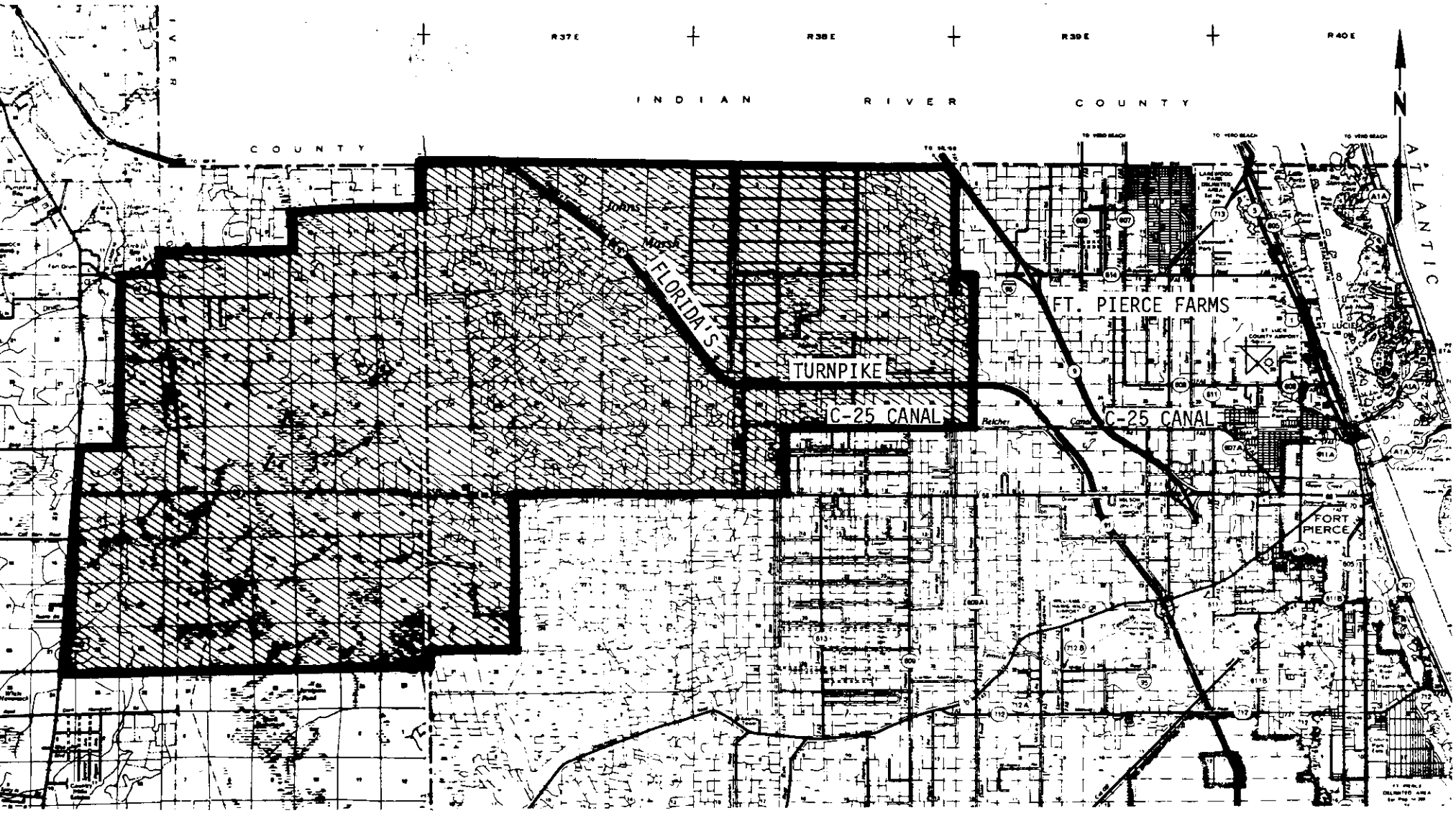
3.2.2.4.9 Restricted Allocation Areas

3.2.2.4.9.1 Allocation of Floridan Aquifer Water in the Eastern Okeechobee-Northwestern St. Lucie Basin - When the project site is located within the Eastern Okeechobee-Northwestern St. Lucie basin, the withdrawals from the Floridan Aquifer are limited to 1.5" for the maximum month, with the balance of the water needs being withdrawn from other sources. This area is depicted in Figure B-3 and described on Figure B-4.

3.2.2.4.9.2 Pumps on Floridan Wells in Martin and St. Lucie Counties - No pump shall be placed on a Floridan well in Martin or St. Lucie county except under the following guidelines:

1) The pump was in place and operational on the well prior to March 2, 1974.

2) The pump which is proposed for installation, is a centrifugal pump installed for the purpose of increasing pressure in attached piping (i.e. drip or jet irrigation systems) and not for the purpose of increasing flow over and above that flow which naturally emanates from the well. The Permittee shall notify District Staff after well construction, for the purpose of determining flow rate prior to pump installation.



EASTERN OKEECHOBEE - NORTHWESTERN
ST. LUCIE BASIN

EXPLANATION

AREA OF CONCERN

ST. LUCIE COUNTY
FLORIDA

FIGURE B-3

Eastern Okeechobee-
Northwestern St. Lucie Basin

Begin at the Southwest corner of Section 36, Township 34 South, Range 35 East; thence northerly along the section lines to the Northwest corner of Section 13, Township 34 South, Range 35 East; thence easterly along the section line to the Range line between Ranges 35 and 36 East; thence northerly along said Range line to the Northwest corner of Section 18, Township 34 South Range 36 East; thence easterly along the section lines to the Southwest corner of Section 10, Township 34 South, Range 36 East; thence northerly along the section line to the Northwest corner of said Section 10; thence easterly along the section lines to the Okeechobee-St.Lucie County line; thence northerly along said county line to the south line of Indian River County; thence easterly along the St.Lucie-Indian River County line to the westerly right of way line of Interstate 95; thence Southeasterly along said right of way line of Interstate 95 to the East line of Section 1, Township 34 South, Range 38 East; thence southerly along the section lines to the Northwest corner of the Southwest one-quarter of Section 18, Township 34 South, Range 39 East; thence easterly along the 1/4 line to the Northeast corner of said Southwest 1/4 of Section 18; thence southerly along the 1/2 section lines to the North right of way line of South Florida Water Management Districts Canal 25 (Belcher Canal); thence westerly along said North right of way line of Canal 25 to the West right of way line of South Florida Water Management Districts Canal 24; thence southerly along said Westerly right of way line of Canal 24 to the North right of way line of State Road 68; thence westerly along said North right of way line of State Road 68 to the West line of Section 9, Township 35 South, Range 37 East; thence southerly along the section lines to the Southwest corner of Section 28 Township 35 South, Range 37 East; thence westerly along the section lines to the St. Lucie-Okeechobee County line; thence southerly along said St.Lucie-Okeechobee County line to the Southeast corner of Section 25, Township 35 South, Range 36 East; thence westerly along the section lines to the East right of way line of U.S. Highway 441; thence northerly along said East right of way line of U.S. Highway 441 to the Township line between Townships 34 and 35 South; thence easterly along said Township line to the POINT OF BEGINNING.

Figure B-4

3) The Applicant conducts a hydrogeologic study approved by Staff which shows that pump installation and withdrawal of artesian water will not have an adverse impact on any existing legal use during the course of the irrigation season.

3.2.2.4.9.3 New Uses from District Canals C-23, C-24, and C-25; Changing Pump Sizes on District Canals C-23, C-24, and C-25 - No additional water will be allocated from C-23, 24 and 25 over and above existing allocations until District investigations show that additional water is available for allocation. No increases in pump capacity will be recommended for surface water pumps located on C-23, 24, and 25 for any use of water.

3.2.2.4.9.4 New Uses from District Canals L-1, L-2, and L-3 - No additional surface water will be allocated from canals L-1, L-2, and L-3 over and above existing allocations. No increase in surface water pump capacity will be recommended.

3.2.2.4.9.5 New Uses from Lake Istokpoga-Indian Prairie Area - No additional surface water will be allocated from Lake Istokpoga-Indian Prairie Area over and above existing allocations. No increase in surface water pump capacity will be recommended.

3.3 Conservation - The District requires that the feasibility of conservation be considered by all applicants.

3.3.1 Irrigation - The District requires that all golfcourse irrigation permits present the District with an evaluation of the feasibility of using wastewater as a source of irrigation prior to permit expiration. Other conservation measures should be identified, such as: priority irrigation systems, moisture sensing devices, native vegetation, etc. Golfcourse irrigation permits at this time are issued with a duration of not more than three years.

3.3.2 Public Water Supply - An Applicant for a public water supply use which is a local government must submit a letter which indicates that the local government is requiring compliance with the Water Conservation Act, F.S. 553.14 which requires that after September 1, 1983 no new building shall be constructed which 1) employs a tank-type water closet having a tank capacity in excess of 3.5 gallons of water; or 2) employs a shower head or faucet that allows a flow of more than an average of 3 gallons of water per minute at 60 pounds of pressure per square inch. An Applicant for a public water supply use which is not a local government must submit a letter to the local government in which the use is either existing or proposed requesting that the local government implement the Water Conservation Act provisions if it has not already done so; a copy of this letter must then accompany the application form. Other conservation practices should be identified by the Applicant because such information may affect restrictions during a water shortage.

3.3.3 Mining (dewatering) - Saltwater discharge to freshwater systems will not be permitted for dewatering operations. Freshwater discharge to saltwater will only be allowed as a normal storm drainage release which is in compliance with the surface water management permit. At times other than during project storms, on site retention is required. Compartmentalizing and pumping between cells is encouraged and usually required. Applicants

should reserve adequate land for water storage purposes.

3.3.4 Industrial - Conservation recycling and reuse of water are encouraged to the extent that water use is reduced and the reuse meets the restrictions of the Department of Environmental Regulation's water quality rules.

4.0 Application Support Hydrogeologic Data - If the Applicant desires an allocation greater than that which the Staff can recommend, it is in the best interest of the Applicant to perform a hydrogeologic investigation. The need for hydrogeologic data collection and evaluations should be discussed during the pre-application meeting. Additional hydrogeologic data based on site-specific considerations may be requested in the additional information (30-day) letter.

Data collection must be performed when the amount of data is inadequate for Staff to evaluate impacts associated with proposed withdrawals and if a larger allocation is desired. Data collection may involve the compilation of existing data and/or the collection of new data. The types of data that may be collected include but are not limited to: rainfall, historical pumpage records, specific capacity data on individual wells, transmissivity, storage coefficient, leakance to the aquifer, water level elevations and records for wells or other water bodies, water budgets, and the location of the saline water interface. A proposal for data collection should have Staff approval prior to expenditure of funds.

Staff may re-evaluate an application upon receipt of additional data. It should be emphasized that additional data collection will result in a higher allocation only if an allocation determined from additional data satisfies all criteria.

If the Applicant disagrees with the Staff's interpretation and evaluation of existing or new data, and subsequent allocation recommendation, it will be in the best interest of the Applicant to conduct a hydrogeologic evaluation if a larger allocation is desired. An evaluation may involve the interpretation of field data, analysis of impacts, movement of the saline front, migration of pollution plumes, and computer modeling of the groundwater system. Proposals for evaluations should have Staff concurrence prior to initiation of the work effort to insure that work effort will cover all the concerns of Staff.

5.0 Staff Recommendation

5.1 General - Recommendations for approval by Staff and subsequent permits will contain an authorization and special conditions. The authorization will include a description of the user by name, project name, location and/or service area size, a withdrawal allocation per unit time, the purpose of the use, the source, and the duration or expiration date.

5.1.1 Amount and Source - Allocations are usually described in terms of million or billion of gallons per year or month. As a special condition withdrawals may also be limited to a maximum daily quantity in million gallons. Sources are described, with further descriptions of the name of the aquifer and/or water body as a special condition.

5.1.2 Duration of Permit - Permit duration is based on the Applicant's demonstrated ability to meet the demand.

5.1.2.1 Public Water Supply and Industrial - When the water use projection for a 10-year period satisfies all allocation criteria, Staff shall recommend permit issuance for up to a ten year period, except in Broward and Lee Counties where Staff will recommend only a five-year permit duration.

Permit duration will reflect the number of years the recommended allocation will be able to satisfy projected demands.

5.1.2.2 Mining (dewatering) - Permit durations are for the length of the dewatering activity but not to exceed three years.

5.1.2.3 Irrigation - The duration of irrigation permits (landscaping, agricultural, recreational) is normally established by basin expiration date as follows (see Figure B-5 for location):

July 15, 1987
October 15, 1987
January 15, 1988
April 15, 1988
July 15, 1988
October 15, 1988
January 15, 1989.

The duration of irrigation applications of special concern is handled on a case-by-case basis.

The duration of irrigation permits in Broward and Lee Counties is not more than five years.

5.1.3 Type of Use - Uses are those as described in 2.17 above, and are placed on permits for purposes of identifying the types of restrictions that will be placed on a user during a water shortage.

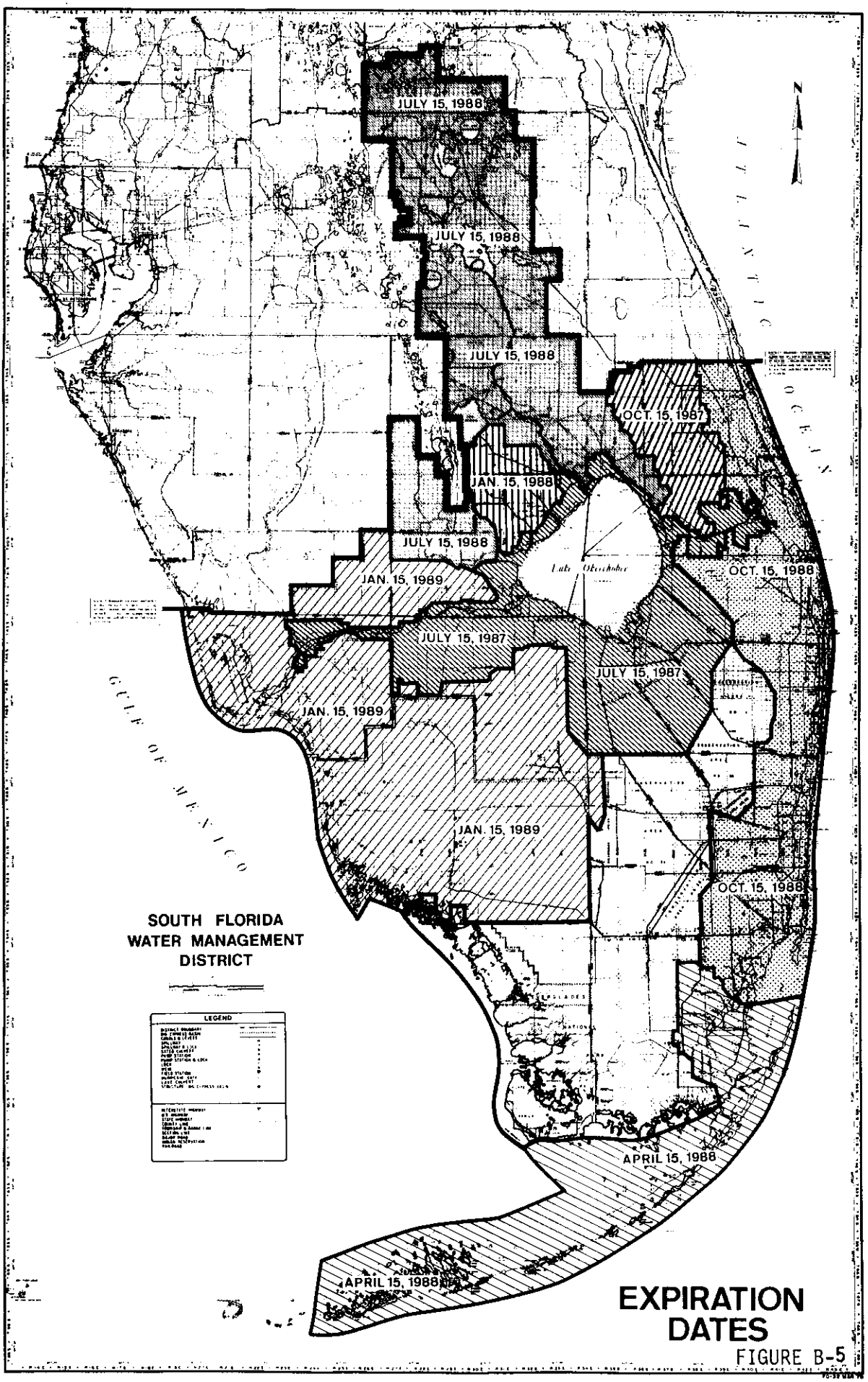
5.1.4 Monitoring - The District uses data from monitoring programs to evaluate quantitative and qualitative effects of water use on an aquifer. The size of the area of influence of a water use can be determined, and the potential for interference with other uses, adverse impact to the environment, and potential for inducing movement of pollutants into an aquifer can be evaluated.

5.1.4.1 Pumpage - For irrigation applications of special concern, the collection of pumpage data will be required on a daily basis with monthly submittals. For other irrigation applications, the collection of pumpage data, if requested, must be performed weekly and submitted monthly as required by District Staff. For uses other than irrigation, data must be collected on a daily basis and submitted monthly.

5.1.4.2 Water Quality

5.1.4.2.1 Saline Water Intrusion Monitoring - The District will require development and implementation of a Saline Water Intrusion Monitoring (SWIM) Program when:

1) saline water is near the point of withdrawals, or
2) movement of saline water towards the source of water is possible as a consequence of future withdrawals.



EXPIRATION DATES

FIGURE B-5

A SWIM Program may also be necessary for an applicant using saline water. A SWIM Program will be required if any one of the following conditions is present:

1) the point of withdrawal is within one mile of a brackish or saltwater body of water, including canals and tidal creeks;
2) the source of water is located seaward of the 250 mg/l chloride line mapped at the base of the aquifer, or is located seaward of a line connecting two adjacent salinity control structures;
3) the land on which the source of water is located is: between the Intracoastal Waterway and the Atlantic Ocean, between a tidal creek and the Gulf of Mexico, or between the Intracoastal Waterway and the Gulf of Mexico;
4) a history of saltwater intrusion, or increasing chloride concentrations, exists for either groundwater or surface water in the vicinity of the water use;
5) non-potable saline water is located either above or below the producing zone, and is not separated from the producing zone by a distinct and definable confining layer;
6) Staff evaluation indicates that, at projected withdrawal rates, saline water intrusion may occur to the extent that the existing treatment process will no longer be capable of producing potable water; or
7) Staff evaluation indicates that, at projected withdrawal rates, saline water intrusion may occur in neighboring wellfields.

5.1.4.2.2 Other Pollution Monitoring - The District will require monitoring when the source of water is a potential source of pollution or when the wellfield will cause movement of polluted water towards the withdrawal point.

5.1.4.3 Rainfall - The District will require monitoring of rainfall at all public water supplies. For other uses the necessity for rainfall monitoring will be determined on a case-by-case basis and reported to the District monthly.

5.1.4.4 Groundwater Level Monitoring Program - A groundwater level monitoring program will be required under the following conditions:

1) A wellfield is located near a source of saline water.
2) A wellfield is in proximity to a potential source of groundwater contamination including, but not limited to, landfills, land waste disposal sites, facilities which store or handle hazardous materials, and petroleum storage facilities.
3) The area of influence of the wellfield is such that the potential exists for interference with other existing wells.
4) The wellfield may cause adverse impact on surface water or wetlands.
5) Insufficient data exists to define the cone of depression of the wellfield.

5.1.5 Use of the Lower Hawthorn Aquifer in Lee County- The use of the Lower Hawthorn Aquifer in Lee County is subject to the following restrictions on its use:

1) As a source of potable water with desalination, if the effluent brine can be discharged without causing adverse impacts;
2) As a source of irrigation water where the shallow aquifer is: a) too

thin to be exploitable, b) contaminated, c) the surface water management system will carry runoff to tidewater, or d) where the irrigation water can be diluted to 200 mg/l chloride concentration. Use of the Lower Hawthorn Aquifer for irrigation requires a technical evaluation and a conclusion of no adverse impact; and
3) Any use of the Lower Hawthorn Aquifer where the shallow aquifer contains potable water will necessitate a detailed water quality monitoring program.

5.2 Limiting Conditions

5.2.1 Standard - The items listed below are standard limiting conditions that may be added to a permit. Case-by-case evaluation may require project specific conditions.

1) In the event of a declared water shortage, water withdrawal reductions will be ordered by the District in accordance with the Water Shortage Plan, Chapter 40E-21, Florida Administrative Code.

2) Source Classification is _____.

3) Permittee shall mitigate to the satisfaction of the District any adverse impact on existing legal uses caused by withdrawals. When adverse impacts occur, or are imminent, District reserves the right to curtail withdrawal rates. Adverse impacts are:

a) reduction in well water levels that impairs the ability of an adjacent well to produce water (an adjacent well may be domestic well, lawn irrigation well, public water supply well, etc.),
b) significant reduction in levels in an adjacent water body such as a lake, pond, wetland or a canal system,
c) saline water intrusion or induction of pollutants into the water supply of an adjacent water use, resulting in a significant reduction in water quality, and
d) change in water quality that causes impairment or loss of use of a well or water body.

4) Permittee shall mitigate to the satisfaction of the District any adverse impact on existing off-site land use as a consequence of withdrawals permitted herein. If increased withdrawals cause an adverse impact on existing land use the District reserves the right to curtail future withdrawal rates. Adverse impacts are:

a) significant reduction in water levels in an adjacent water body (such as a lake, pond, wetland or a canal system),
b) land collapse or subsidence caused by reduction in water levels,
c) damage to crops and other vegetation, causing financial harm to the landowner, and
d) damage to habitat of rare, endangered or threatened species.

5) Permittee shall not refuse immediate entry or access to any authorized representative of the District who requests entry for purposes of inspection and presents appropriate credentials.

6) If any condition of the permit is violated, the permit shall be subject to review and possible modification, enforcement action, or revocation.

7) Application for a permit modification may be made at any time.

thin to be exploitable, b) contaminated, c) the surface water management system will carry runoff to tidewater, or d) where the irrigation water can be diluted to 200 mg/l chloride concentration. Use of the Lower Hawthorn Aquifer for irrigation requires a technical evaluation and a conclusion of no adverse impact; and
3) Any use of the Lower Hawthorn Aquifer where the shallow aquifer contains potable water will necessitate a detailed water quality monitoring program.

5.2 Limiting Conditions

5.2.1 Standard - The items listed below are standard limiting conditions that may be added to a permit. Case-by-case evaluation may require project specific conditions.

1) In the event of a declared water shortage, water withdrawal reductions will be ordered by the District in accordance with the Water Shortage Plan, Chapter 40E-21, Florida Administrative Code.

2) Source Classification is _____.

3) Permittee shall mitigate to the satisfaction of the District any adverse impact on existing legal uses caused by withdrawals. When adverse impacts occur, or are imminent, District reserves the right to curtail withdrawal rates. Adverse impacts are:
a) reduction in well water levels that impairs the ability of an adjacent well to produce water (an adjacent well may be domestic well, lawn irrigation well, public water supply well, etc.),
b) significant reduction in levels in an adjacent water body such as a lake, pond, wetland or a canal system,
c) saline water intrusion or induction of pollutants into the water supply of an adjacent water use, resulting in a significant reduction in water quality, and
d) change in water quality that causes impairment or loss of use of a well or water body.

4) Permittee shall mitigate to the satisfaction of the District any adverse impact on existing off-site land use as a consequence of withdrawals permitted herein. If increased withdrawals cause an adverse impact on existing land use the District reserves the right to curtail future withdrawal rates. Adverse impacts are:
a) significant reduction in water levels in an adjacent water body (such as a lake, pond, wetland or a canal system),
b) land collapse or subsidence caused by reduction in water levels,
c) damage to crops and other vegetation, causing financial harm to the landowner, and
d) damage to habitat of rare, endangered or threatened species.

5) Permittee shall not refuse immediate entry or access to any authorized representative of the District who requests entry for purposes of inspection and presents appropriate credentials.

6) If any condition of the permit is violated, the permit shall be subject to review and possible modification, enforcement action, or revocation.

7) Application for a permit modification may be made at any time.

"unaccounted for" losses are calculated. Data collection shall begin within six months of permit issuance. Loss reporting shall be submitted to the District on a yearly basis from the date of permit issuance.

5) If the Permittee will not serve a new demand within the service area for which the annual allocation was calculated, the annual allocation may then be subject to modification.

6) Six months from date of permit issuance, Permittee shall develop and implement a "Wellfield Operating Program". This program shall detail which wells are primary, secondary, standby (reserve), and any other aspects of wellfield management. The Wellfield Operating Program may be submitted as a letter report.

7) Within one month of new well construction, Permittee shall perform step drawdown tests. Permittee shall submit this information within one month of the test. (Information on performing step drawdown tests is available from the District).

8) Permittee shall maintain an operable and accurate flow meter on the discharge side of the water treatment plant for the purpose of measuring daily use of water.

5.2.2.3 Industrial Special Conditions

1) Maximum daily withdrawal shall not exceed _____.

2) Daily withdrawals shall be reported to the District monthly on forms provided by the District.

3) Within six months of date of permit issuance, Permittee shall develop and implement a "Wellfield Operating Program". This program shall detail which wells are primary, secondary, standby (reserve), and any other aspects of wellfield management. The Wellfield Operating Program may be submitted as a letter report.

4) Within one month of new well construction, Permittee shall perform step drawdown tests. Permittee shall submit this information to the District within one month of the test. (Information on performing step drawdown tests is available from the District.)

5.2.2.4 Mining (dewatering) Special Conditions

1) Maximum day pumpage for each pit shall not exceed ____ MGD unless otherwise specified by Staff as a consequence of unusual rainfall conditions. If the need to exceed the above withdrawal rate arises, Permittee shall notify District Staff of the need, Staff shall evaluate the request then render a decision in an expeditious manner.

2) The borrow pit shall be constructed using sound engineering practice. If in the opinion of Staff the excavation endangers the properties of adjacent owners (through erosion, side wall collapse, etc.), the Permittee shall cease operation upon notification by the District until a method to stop such occurrences is found and instituted.

3) The operation, maintenance, and reclamation of the borrow pit shall comply at all times with all county, state, and federal regulations governing these operations.

4) Maximum installed capacity for each borrow pit shall not exceed ___ GPM.

5) Permittee shall establish a surveyed datum point from which water levels in the borrow pit can be referenced.

6) Permittee shall immediately cease dewatering upon notification by the District when the District determines that continued dewatering would create a condition hazardous to the health, safety, and general welfare of the people of the District.

7) Daily withdrawals shall be reported to the District monthly on forms provided by the District.

8) Permittee shall be responsible for clearing shoaling if the Permittee's dewatering operation creates shoaling in adjacent water bodies.

9) Permittee shall comply with turbidity and general water quality standards for surface discharge into receiving streams, as per Florida Administrative Code 17-3.

10) Permittee shall not lower the water table below ___ feet NGVD which is ___ feet below ground surface. The depth of the pit shall not exceed ___ feet below ground surface.

11) Off-site discharge shall be made only through the following facilities:_____.

12) Upon completion of construction, all above ground dikes, levees, and berms that will contain water shall be inspected for structural adequacy, with reports submitted to the District. These reports shall include proposal of technique and schedule for repair of any deficiencies noted, and shall be signed and sealed by a Florida Registered Professional Engineer. Subsequent continuing inspections shall be made in April and November with reports submitted to the District the following month.

13) Prior to installation of discharge facilities, the Permittee shall install in the receiving water body a staff gauge referenced to NGVD datum. The location of this gauge is subject to Staff approval. District Staff will then establish a maximum receiving water elevation. Dewatering discharge from the project must cease when receiving water elevation exceeds this maximum level.

14) All dewatering water shall be retained on either the Permittees land or legally acceptable adjacent areas. Dewatering discharge shall not be allowed to drain to tidewater.

5.2.2.5 Irrigation Special Condition

1) If required, withdrawals on a (daily)(weekly)(monthly) basis shall be reported to the District monthly. Data submittal begins either in the month following the date of permit issuance or in the month that water use is initiated.

5.2.2.6 Golf Course Irrigation Special Condition

1) Prior to the expiration of the permit the Permittee shall present the District with an evaluation of the feasibility of using wastewater as a source or irrigation water. If wastewater is not a viable and economically feasible source of water then the Governing Board may renew the permit.

5.2.3 Monitoring/Data Collection Limiting Conditions

5.2.3.1 Potentiometric Head or Water Level

1) Permittee shall construct and maintain a potentiometric head monitoring well with a continuous recording device. The well and recorder shall be constructed, at a location acceptable to both Permittee and District Staff, within six months of permit issuance. Weekly potentiometric head measurements may be recorded by the Permittee in place of a continuous recording device. Potentiometric head records shall be submitted to the District as frequently as charts are changed for recording devices, or on a monthly basis for manual data collection. Charts from recording devices shall be submitted by December 31 of each year. Data collection shall begin in the month following the month of well construction.

2) Within two years of permit issuance, Permittee shall develop and implement a "Potentiometric Head Monitoring Program ." The program shall involve the construction of a multi-depth monitoring well network that will indicate the areal extent of the cone of depression. The network shall consist of _____ wells. A preliminary proposal shall be submitted to Staff within six months of the date of permit issuance.

3) Within six months of permit issuance, Permittee shall construct and maintain a staff gauge in the _____ (water body). Water level data shall be collected on at least a weekly basis; more frequent collection is encouraged. The staff gauge shall be constructed in the aforementioned water body, at a location acceptable to both Permittee and District Staff. Water level records shall be submitted to the District on a monthly basis.

5.2.3.2 Rainfall

1) Permittee shall make daily rainfall measurements at the wellfield and report this data to the District monthly beginning in the month following the month of permit issuance.

5.2.3.3 Water Quality

5.2.3.3.1 Saline Water Intrusion

1) Within two years of the date of permit issuance, Permittee shall develop and implement a "Saline Water Intrusion Monitoring (SWIM) Program." A preliminary proposal shall be submitted to Staff for approval within six months of permit issuance. The purpose of this program shall be to a) locate the saline water interface, and b) construct a monitoring well network that will monitor the movement and velocity of the saline water interface. The program shall consist of wells. In developing the program, the Permittee shall consider well localities, depth, method of well construction, types of screen, method of chloride analysis, and frequency of data collection.

5.2.3.3.2 Pollution/Contamination

1) Permittee shall establish a water quality monitoring program within two years of permit issuance. The sampling points shall consist of _____ wells and _____ surface water sites. In developing the program, the Permittee shall consider well localities, depth, method of well construction, types of screen, methods of analysis, and frequency of data collection. A preliminary proposal shall be submitted to Staff for approval within six months of permit issuance.

5.2.4 Proposed Service Area Regulated by the Public Service Commission

1) Permittee shall obtain a Public Service Commission (PSC) certificate for the proposed service area within two years of permit issuance.

5.2.5 Artesian Floridan Wells

1) A one-quarter inch brass valve shall be installed on the casing side of the well valve head of Well No. _____. The brass valve shall be threaded into the casing and shall exhibit a female threaded end on the discharge side. The valve shall be kept in working order. The purpose of this valve shall be for periodic checks on the potentiometric head of the Floridan Aquifer.

2) Permittee shall submit to the District an artesian well survey, which shall include the following: well cased depth, well total depth, and chloride ion concentration of the water in each well. This survey shall be submitted with six months of permit issuance.

3) Permittee shall equip each flowing artesian well with a valve capable of controlling the discharge from the well within one year of permit issuance.

4) In Martin and St. Lucie Counties, the maximum installed capacity shall be that capacity at which the wells are capable of flowing in a free flowing mode relative to existing land elevation at the well site. Pumping equipment shall not be installed on any well as a means to regain or increase capacity.

5) Prior to the installation of a pump on a Floridan Aquifer well in either Martin or St. Lucie County for the purpose of increasing pressure on the discharge side (rather than increasing flow) Permittee shall obtain a flow verification determination by District Staff to insure that the natural flow rate of the well is less than that of the proposed pump.

5.2.6 Desalination of Saline Water

1) Permittee shall receive approval from the Department of Environmental Regulation for discharge of effluent brine resulting from the desalination process. If approval is not received, the permit is subject to modification or revocation.

5.2.7 Additional Conditions for Applications of Special Concern - If the District determines on a case-by-case basis that the application is an area of special water concern because of either limitations on water availability or other potentially adverse impacts associated with the proposed withdrawal then 1) allocation of water may be restricted or denied for irrigation purposes when sewage effluent is available, 2) irrigation may be restricted to the use of a low-volume irrigation system or the irrigation allocation limited to the quantity of water which may be usable by a low-volume irrigation system, 3) monitoring programs may be imposed to delineate the cone of depression surrounding a withdrawal, 4) restrictions may be placed on the depth of surface water pump intakes. In addition the following limiting conditions may be attached to the permit:

5.2.7.1 Conditions on Applications of Special Concern

1) Allocations shall be limited to ___ on a maximum day basis and ___ on an annual basis.

2) Pumpage data shall be collected on a daily basis and submitted to the District monthly.

3) For groundwater withdrawals - Within six months of permit issuance, Permittee shall equip all existing wells with flow meters or clocks which totalize pump operation time. Permittee shall equip all proposed wells with flow meters or clocks which totalize pump operation time prior to initiation of water use from those wells. In the case of flowing Floridan Aquifer wells, each well shall be equipped with a flow meter within six months for existing wells and prior to use for proposed wells.

4) For surface water withdrawals - Within six months of permit issuance, Permittee shall equip all existing surface water pumps with flow meters, clocks or other devices which totalize pumpage. Permittee shall equip all proposed surface water pumps with flow meters, clocks or other devices which totalize pumpage prior to initiation of water use from those pumps.

6.0 Renewals and Modifications - All renewals and modifications shall be treated and applied for in the same manner as initial applications. Monitoring programs under existing or expired permits may be continued. Application must be made to the District for modification of a permit when 1) the Permittee proposes to change the amount of water used, either increasing or decreasing the quantity, 2) the Permittee proposes to change the crop type, in the case of agricultural use, 3)

the Permittee proposes a change in the use, and 4) the Permittee proposes a change in facilities or in the location of facilities or defines the location of proposed facilities which were previously not located.

6.1 Requirements - In order for a Permittee to obtain a modification or renewal, the Permittee must be in compliance with the limiting conditions of the existing permit. Well construction must be in compliance with Chapters 40E-3, 40E-30 and 17-22, F.A.C.

7.0 Water Shortage or Water Shortage Emergency - In the event of either a water shortage or water shortage emergency, Chapter 40E-21 shall apply to all water users except to those whose source of water is limited solely to treated effluent or seawater.

PART B BASIS OF REVIEW FOR WATER USE

II. CHECKLISTS

A. Checklist For Public Water Supply

This checklist is for a typical project. For complex projects and large withdrawals in sensitive areas, additional information may be requested.

A. General

1. Describe the purpose of the application.

2. State the quantity of water applied for as an annual allocation (gals/year). This quantity may equal the annual quantity which will be pumped at a future point in time, or may equal the applicant's existing pumpage if no future increases in pumpage are anticipated. The requested allocation should equal average daily pumpage multiplied by 365 days.

3. Explain briefly the derivation of annual allocation.

   a. Indicate the projected population used to determine the annual allocation.

   b. Indicate proposed consumption of water per capita on a permanent population basis. If proposed per capita consumption is greater than existing, explain the difference.

4. Indicate the maximum daily pumpage associated with your projected average day pumpage.

5. Indicate the maximum day to average day demand ratio used in calculating the projected maximum day pumpage. Explain briefly the basis for using this number.

6. List the future year in which the quantity of water applied for will be used (ten years maximum except five years in Broward and Lee Counties).

7. Indicate the source of water.

8. Indicate the date on which the use of water was initiated or is proposed for initiation and the duration of the use of water.

B. Location

1. Provide a location map.

2. Provide a service area map and site map of existing and proposed wellfield and treatment plant facilities. Number wells, pumps and culverts to correspond with Tables A, B, and C.

3. Use a map or sketch of the applicant's property and surrounding area to indicate:

   a. Approximate location of other wells not owned by the applicant including domestic wells, irrigation wells, public water supply wells, etc. within 1000'.

   b. Location of pollution sources within one mile of the applicant's wells such as landfills, percolation ponds, hazardous waste disposal sites, sewage mains, etc. (septic tanks excluded).

   c. Location of nearest saline water or salinity control structure (if the distance is less than or equal to one mile).

   d. Location of any existing or proposed wastewater treatment and disposal facilities that will recharge the aquifer in the vicinity of the applicant's wellfield(s).

   e. Describe the location of existing flow meters on individual wells, before treatment, after treatment, and/or at customer's connections.

   f. Describe existing storage capacity.

C. Facilities

1. Describe all existing and proposed wells by completing Table A for each well.

2. Describe all existing and proposed surface water pumps by completing Table B for each pump.

3. Describe all existing and proposed culverts essential to the operation of the wellfield by filling out Table C for each culvert.

4. Describe existing and proposed water treatment plants, DER rated capacity, potential capacity and method of treatment.

5. Describe fire flow and standby capacity.

6. Describe the existing wellfield operation schedule. Include in the description those wells that are primary, secondary, stand-by, and well rotation schedule.

7. Describe existing legal rights to proposed well or wellfield sites.

D. Population, Service Area, and Water Use

1. Indicate the number of people, and number of equivalent residential connections presently served.

2. Indicate in acres size of area served.

3. List interconnections with other suppliers and indicate ability to supply water via the interconnect.

4. Provide information on present, past and future water use by filling out Tables D, E, and F.

5. Indicate average daily sewage effluent production for the past 12 months. Indicate disposal point for effluent.

6. Submit a copy of any local government franchise to serve water.

E. Raw Water Quality

Provide recent information on raw water quality.

F. Public Service Commission

An applicant regulated by the Public Service Commission must indicate the certificate number of each Public Service Commission certificate, provide a copy of the description of the certificated service area and provide a map of the certificated area.

G. Water Problems

Explain any problems the utility or any other user is currently experiencing or causing as a consequence of withdrawals.

H. Irrigation

If any of the projected water use will be for irrigation of golf courses or park areas, please indicate the following:

1. Area in acres which will be irrigated.

2. Type of vegetation to be irrigated.

3. Approximate maximum monthly water use.

4. Approximate average annual water use.

5. Show irrigated area on map.

I. Impacts

1. Will the proposed water use affect domestic, irrigation, or other public water supply wells?

2. Will the proposed water use affect adjacent lake levels?

3. Will the proposed water use cause saltwater intrusion?

4. Will the proposed water use impact environmental features that have either a direct or indirect relationship to the water resources of the District (wetland habitat, natural water bodies, intermittent ponds, upland areas), preferred habitats for rare, endangered or threatened species?

5. Will the proposed water use enhance the rate of formation of sinkholes?

In addition to responding to the above questions the Applicant must document any adverse impact on other users, pollution sources, saline water intrusion, adjacent water bodies, environmental features or land use that the proposed withdrawals may have.

J. Wastewater Recycling

Describe plans to recycle wastewater and indicate present and/or future quantities. If wastewater is recycled, then both monitoring and hydrogeologic study requirements will be reduced.

K. Reverse Osmosis Treatment

Indicate the following:

1. Withdrawal capacity.

2. Potable water supply capacity.

3. Reject water discharge capacity.

4. The treatment efficiency ratio.

5. Indicate the amount of raw water that can be blended with the R. O. permeate.

6. The highest level of total dissolved solids (TDS) or chlorides that can be efficiently and economically treated using the installed membranes.

7. The chloride ion concentration in both the reject water and receiving water body.

8. Location of effluent discharge on a map.

L. New wellfield or additional wells

If a new wellfield or additional wells are proposed, indicate the following:

1. Why a new wellfield or wells are needed.

2. Choice of the specific site(s).

3. The legal right to use the proposed site(s) for wells, treatment plants, facilities (i.e., owned, leased, easement).

M. Water Conservation

If the Applicant for a public water supply use is a local government then a letter must be submitted along with the application form indicating that the Applicant is in compliance with the Water Conservation Act, F.S. 553.14 requiring water conserving fixtures in new construction. If the Applicant for a public water supply use is not a local government then a copy of a letter sent to the local government in which the use exists or is proposed requesting that the provisions of the Water Conservation Act be implemented must be sent

along with the application form.

List other means and methods by which water is being or will be conserved.

N. Zoning, Wellfield Protection and Water Supply Plans

1. Include the status under the DRI process if applicable. If the project is a DRI, then a copy of the final approved development order must be supplied.

2. What does the comprehensive plan say that land use and zoning should be in the service area of this application? For a new use of water submit a letter from the appropriate local government indicating that the land use upon which the population projections are based is compatible with the local government comprehensive plan. If the proposed land use and/or zoning are not in conformance with the comprehensive plan what steps is the Applicant taking to bring zoning into conformance with the comprehensive plan?

3. Does industrial zoning or other zoning that may involve the use of hazardous materials exist within one mile of either existing or proposed well sites or within the cone of influence? If yes, show zoning locations in relation to well sites on a map.

4. Will the water use affect existing land uses as a consequence of a wellfield protection ordinance?

5. Will the water use be protected by a wellfield protection ordinance? If no, how will water quality at the well sites be protected from degradation?

6. Is the application compatible with short term and long term county water supply plans and other regional or subregional water resource plans?

O. Adjacent Uses of Water

Submit the names and complete addresses of adjacent owners that are withdrawing water from either groundwater or surface water and are within 300 feet of:

1. a well or pump proposed by the applicant,

2. an existing but unused well or pump,

3. a well or pump not listed under facilities in the applicant's current permit, or

4. an existing well or pump currently in-service if an increase in pumpage is proposed for the existing well or pump.

P. Proposed Surface Water Management System

If the Applicant proposes a new surface water management system then an evaluation of the impact of the proposed withdrawal on the lake system and

conversely, the impact of the control elevations of the surface water management system on the withdrawal and water availability at the project site must be submitted.

Q. Health Review

As part of the application, the Applicant must request that 1) other governmental agencies responsible for public health evaluate the application for impacts on public health, and 2) other governmental agencies send a copy of the response to the District. The Applicant must indicate that this request has been made in the application. Agencies responsible for public health include the following: Department of Environmental Regulation; Health Departments for Dade, Broward, Palm Beach, Polk and Lee Counties; Dade County Department of Environmental Resources Management; and Lee County Environmental Protection Services.

Note: Include four copies of all information and one completed copy of Application Form 0050.

B. Irrigation Water Use Checklist

Applicants for the following water uses should utilize this checklist: livestock, nursery, recreational area, soil flooding, agricultural, freeze protection, golf course and landscape irrigation.

This checklist is for a typical project. For complex projects, large withdrawals, or withdrawals in sensitive areas, additional information may be requested. Only applicable information need be submitted.

A. General

1. Project Ownership; to be completed only if the project site is leased:

   a. If the person listed as Owner in Application for a Permit (Form 0050) is the lessor, give name, address and phone.

   b. If the person listed as Owner in Application for a Permit (Form 0050) is the lessee, give name, address and phone number of lessor.

   c. If project site is leased, provide expiration date of the lease. (Permit will not be issued beyond the expiration date of the lease).

2. If the project site is located within a drainage district, provide the name of the district.

3. Briefly describe the purpose of the application.

4. If new pumps, culverts, or wells are needed for irrigation, describe the reason for construction and placement of each.

5. If the project is existing, an aerial photograph that shows the crop must be submitted with the application.

6. Indicate the source of water.

7. Indicate the date on which the use of water was initiated or is proposed and the duration of the use of water.

B. Location

1. Provide a location map.

2. Provide a site map. Indicate the property boundaries, irrigated area, wells, pumps, culverts, canals, ditches, roads, and other landmarks. Number wells, pumps and culverts to correspond with Tables A, B, and C. Show areas served by irrigation systems described in Table G.

3. Indicate Section, Township and Range of Project.

C. Facilities

1. Describe all existing and proposed wells by completing Table A for each well.

2. Describe all abandoned flowing wells by completing Table A for each well.

3. Describe all existing and proposed surface water irrigation pumps by completing Table B for each pump.

4. Describe all existing and proposed irrigation-withdrawal culverts by completing Table C for each culvert.

5. Describe existing legal rights to proposed well or wellfield site.

D. Crop type by Irrigation system

For each type of irrigation system (flood, drip, microjet, overhead, etc.) fill out a Table G. For example, if a grower has 150 acres of citrus on drip and 500 acres on Flood, two copies of Table G would be filled out, one for drip and another for flood irrigation. Three copies of Table G are attached. "Acres planted" is the irrigated acreage minus roads, ditches, canals, swales, etc.

E. Water Usage

1. If available, please provide any pumpage records of existing water usage and the time period of usage.

2. Indicate the amount of water that will be required on a monthly basis for each month (January through December) for irrigation of each crop in a dry year.

3. Indicate the total water needed to meet the irrigation demands of all crops.

4. Explain the basis for the crop requirements in "2" above.

F. Water Problems

Explain any water problems currently experienced within one mile of the project site as a consequence of withdrawals, such as drawdowns of adjacent water bodies, saline water intrusion, adverse impact on adjacent land use, water quality problems, within one mile of the wellfield.

G. Frost Protection

1. Describe methods of freeze protection and quantities desired.

2. Request a letter from the IFAS County Extension Agent evaluating the water quantity requested for freeze protection.

H. Water Conservation

1. Describe any water conservation techniques or methods of water use optimization (soil moisture meters, accounting methods, etc.) that are

currently being used or are proposed for use.

2. Describe any potential for reusing wastewater.

3. For golf course irrigation please provide the following information:

   a. Explain the derivation of the quantity of water needed for irrigation.

   b. Break down golf course acreage for the following areas:

      rough
      fairway approach
      fairways
      tees
      greens
      other

   c. Will the rough areas be irrigated?

   d. During which hours of the day will the course be irrigated?

   e. Is the golf course associated with a residential development?

I. Impacts

1. Will the proposed water use affect domestic, irrigation, or other public water supply wells?

2. Will the proposed water use affect adjacent lake levels?

3. Will the proposed water use cause saltwater intrusion?

4. Will the proposed water use affect environmental features that have either a direct or indirect relationship to the water resources of the District (wetland habitat, natural water bodies, intermittent ponds, upland areas) and preferred habitats for rare, endangered or threatened species?

5. Will the proposed water use enhance the rate of formation of sinkholes?

In addition to responding to the above questions the Applicant must document any adverse impact on other users, pollution sources, saline water intrusion, adjacent water bodies, environmental features or land use that the proposed withdrawals may have.

J. Present and Proposed Zoning

Submit evidence of compatible zoning. Include the status under the DRI process if applicable. If the project is a DRI, then a copy of the final approved development order must be supplied. For a new use of water submit a letter from the appropriate local government indicating that the proposed land use is compatible with the local government comprehensive plan.

K. Adjacent uses of Water

Submit the names and complete addresses of adjacent owners that are withdrawing water from either groundwater or surface water and are within 300 feet of:

1. a proposed well or pump proposed by the applicant,

2. an existing but unused well or pump,

3. a well or pump not listed under facilities in the applicant's current permit, or

4. an existing well or pump currently in-service if an increase in pumpage is proposed for the existing well or pump.

L. Proposed Surface Water Management System

If the Applicant proposes a new surface water management system then an evaluation of the impact of the proposed withdrawal on the lake system and conversely, the impact of the control elevations of the surface water management system on the withdrawal and water availability at the project site must be submitted.

Note: Include four copies of all information and one completed copy of Application Form 0050.

C. Checklist for Mining Dewatering Water Use

This checklist is for a typical project. For complex projects, large withdrawals, or withdrawals in the sensitive areas, additional information may be requested. Only applicable information need be submitted.

A. General

1. Describe the purpose of the application and the activity which will be performed.

2. Explain in detail why dewatering is necessary. Indicate the method of excavation.

3. Explain briefly the derivation of the requested annual allocation and average daily withdrawal.

4. Indicate the maximum daily pumpage and how it was derived.

5. Designate the future year in which the quantity of water to be allocated will be used. The District will consider projected needs for a 10 year period or less. In Broward and Lee counties water use projections are considered for a five year period.

6. Provide name, address and phone number of contractor if different from applicant.

7. Provide evidence showing ownership/lease of the site or letter of permission from owner and/or easement approval.

8. Indicate the source of water.

9. Indicate the date on which the use of water was initiated or is proposed for initiation and the duration of the use of water.

B. Location

1. Provide a location map.

2. Provide a site map. Show pit area (existing and/or proposed dimensions including maximum depth of excavation), stockpile area, dike and levees (cross-sections designating height, width, side slopes), retention/detention area location and linear extent, pumps, culverts, and structures (with numbers to correspond with Tables A and B), ditches, canals (designating side slopes and dimensions including height, width and depth), staff gauges and monitoring wells, roads, and the approximate location of domestic, irrigation, and public water supply wells not owned by the applicant within 1000 feet of the applicant's facilities (see section J(1)).

3. Provide an aerial photo and topographic map of the site.

C. Facilities

1. Describe all existing and proposed surface water pumps by completing Table B for each pump.

2. Describe all existing and proposed culverts by completing Table C for each culvert.

D. Operation Description

1. Indicate elevation to which ground water level will be drawn down as a consequence of the dewatering. Indicate maximum depth of pit to be excavated.

2. Describe how turbidity in discharges will be controlled.

3. Indicate working hours - hours/day, days/week, weeks/year.

4. Provide water quality data if within 1 mile of saline water or if project is located in Lee or Collier counties.

5. Provide a description of any monitoring program.

E. Water Usage

If available, please provide any pumpage records of existing water usage and the time period of usage.

F. Present and Proposed Zoning

Submit evidence of compatible zoning. Include the status under the DRI process if applicable. If the project is a DRI, then a copy of the final approved development order must be supplied. For a new use of water submit a letter from the appropriate local government indicating that the project is compatible with the Comprehensive Plan.

G. Historical Information - Water problems

1. Provide information on past construction and practices, pumpage, and pollution.

2. Describe any water problems that have occurred within one mile of the project site.

H. Water Table - Geologic Borings Data

Provide information on wet and dry season water table elevations. Include logs and attach data of borings that have been made at the pit site.

I. Water Conservation

Describe any water conservation techniques or methods of water use optimization.

J. Off-Site Information

The extent of off-site information necessary will depend on the zone of influence caused by withdrawals, discharge and upland drainage through the site.

1. Aerial Map.

   a. Designate domestic or irrigation well locations within 1000 feet of the proposed dewatering.

   b. Indicate surface drainage basin limits and designate drainage route and discharge locations.

   c. Indicate upstream and downstream drainage facilities.

   d. Indicate pollution sources, environmentally sensitive areas, adjacent water bodies, and saline water control, structures within 1000 feet of the dewatering operation.

2. Submit the names and complete addresses of adjacent owners that are withdrawing water from either groundwater or surface water and are within 300 feet of:

   a. a well or pump proposed by the applicant,

   b. an existing but unused well or pump,

   c. a well or pump not listed under facilities in the applicant's current permit, or

   d. an existing well or pump in-service.

3. Depths, casing depths and screened/open hole depths of adjacent wells.

4. Facilities plan if off-site is proposed.

   a. Explain why dewatering off-site is necessary.

   b. Describe location of dewatering discharge (routing to receiving body).

   c. Indicate wet season and dry season water levels in receiving stream.

K. Drainage System (Stormwater)

Indicate the routing of stormwater and retention/detention system facilities. Provide computations.

L. Structural Stability

Provide information on the structural stability of dikes, levees, structures and pit slopes.

M. Landfill Operation in Conjunction with Mining/Dewatering (in addition to above detailed requirements)

Provide the following:

1. Landfill location map and site map.

2. Date landfill started operating.

3. Expected life of landfill.

4. Type of waste accepted (Please indicate type of waste accepted in the past if different from waste accepted presently).

5. Methods of waste disposal. Indicate how and where the waste is and has been buried. Elaborate on waste buried below the water table.

6. Site engineering plans and information, to include:

   a. Groundwater pollution control measures.

   b. Leachate collection system and treatment. Has leachate been found at the site?

   c. Location and type of liners.

7. Monitoring program for groundwater pollution control, if any.

   a. Please indicate location of monitoring wells in a map showing areal extent and location of landfill.

   b. Provide well logs and well construction detail.

   c. Supply all water quality and water level data collected during the monitoring program, and

   d. Supply any additional information or reports related to the effect of the landfill on groundwater levels or quality.

N. Evaluation - Impacts

Please answer the following questions:

1. Will the dewatering operation affect off-site building foundations?

2. Will the dewatering operation significantly affect adjacent lakes, domestic water use, or irrigation wells?

3. Will the dewatering operation cause saline water intrusion or cause potable water to be discharged to tide water?

4. Will the dewatering operation impact environmental features that have either a direct or indirect relationship to the water resources of the District (wetland habitat, natural water bodies, intermittent ponds, upland areas), preferred habitats for rare, endangered or threatened species?

In addition to responding to the above questions the Applicant must document any adverse impact on other users, pollution sources, saline water intrusion, adjacent water bodies, environmental features or land use that the proposed withdrawals may have.

O. Adjacent users

Submit the names and complete addresses of adjacent owners that are withdrawing water from either groundwater or surface water and are within 300 feet of:

1. a well or pump proposed by the applicant,

2. an existing but unused well or pump,

3. a well or pump not listed under facilities in the applicant's current permit, or

4. an existing well or pump currently in-service if an increase in pumpage is proposed for the existing well or pump.

Note: Include four copies of all information and one completed copy of Application Form 0050.

D. Checklist for Industrial Water Use

The following water uses must utilize this checklist: power production, commercial and industrial processes, cooling and air conditioning, navigation, water-based recreation, aquacultural, diversion and impoundment into non-District facilities, and other uses for which a checklist is not specified.

This checklist is for a typical project. For complex projects, large withdrawals, or withdrawals in sensitive areas, additional information may be requested. Only applicable information need be submitted.

A. General

1. Describe the purpose of the application.

2. Indicate the quantity of water applied for as an annual allocation (gals/year). This quantity may equal the annual quantity which will be pumped at a future point in time, or may equal the applicant's existing pumpage if no future increases in withdrawals are anticipated. The requested allocation should equal the projected average day pumpage multiplied by 365 days/year.

3. Explain briefly the derivation of the requested allocation.

4. Indicate the maximum daily pumpage associated with the projected average day pumpage.

5. Indicate the maximum day to average day demand ratio used in calculating the projected maximum day pumpage. Explain briefly the derivation of this number.

6. Designate the future year in which the quantity of water (see No. 2 above) to be allocated will be used. The District will consider projected needs for a 10 year period or less. In Broward and Lee counties water use projections are considered for a five year period only.

7. If new pumps, wells, or culverts are needed, describe the reason for construction and placement of each.

8. Indicate the source of water.

9. Indicate the date on which the use of water was initiated or is proposed for initiation and the duration of the use of water.

B. Location

1. Provide a location map.

2. Provide a site map. Indicate the location of property boundaries, irrigated areas, wells, pumps, culverts, roads, canals, ditches, wastewater treatment facilities, water treatment plants, disposal points, irrigated areas, and the location of domestic, irrigation, and public water supply wells not owned by the applicant within 300 ft. of the applicant's facilities. Number wells, pumps, and culverts to correspond with Tables A, B, and C.

C. Facilities

1. Describe all existing and proposed wells by completing Table A for each well.

2. Describe all existing and proposed surface water pumps by completing Table B for each pump.

3. Describe all existing and proposed irrigation withdrawal culverts by completing Table C for each culvert.

4. Describe existing and proposed water treatment plants, plant capacity, treated water storage capacity and in-plant losses.

5. Describe existing fire-flow capability and standby capacity.

6. Describe the existing pump operation schedule. Include in the description which pumps are primary, secondary, stand-by, and pump rotation schedule.

7. Describe existing legal right to proposed well or wellfield sites.

D. Process

Describe the process and how water is used in the process. Indicate the nature of changes to the water by the process including thermal, physical, and chemical changes.

E. Water Usage

Fill out Table D using the most recent 12 months of pumpage records.

F. Water Problems

Explain any water problems currently experienced within one mile of the project site.

G. Wastewater Disposal

Describe the manner in which wastewater is disposed (i.e. evaporation, percolation ponds, drainage wells, canal discharge, spray irrigation, etc.)

H. Water Conservation

Describe any water conservation techniques or methods of water use optimization.

List other means and methods by which water will be conserved.

I. Impacts

Document any impact on other users, the saline water interface, adjacent water bodies, land uses, or pollution sources that the proposed withdrawals may have.

1. Will the proposed water use affect domestic, irrigation, or other public water supply wells?

2. Will the proposed water use affect adjacent lake levels?

3. Will the proposed water use cause saltwater intrusion?

4. Will the proposed water use affect environmental features that have either a direct or indirect relationship to the water resources of the District (wetland habitat, natural water bodies, intermittent ponds, upland areas) preferred habitats for rare, endangered or threatened species?

5. Will the proposed water use enhance the rate of formation of sinkholes?

In addition to responding to the above questions the Applicant must document any adverse impact on other users, pollution sources, saline water intrusion, adjacent water bodies, environmental features or land use that the proposed withdrawals may have.

J. Present and Proposed Zoning

Submit evidence of compatible zoning. Include the status under the DRI process if applicable. If the project is a DRI, then a copy of the final approved development order must be supplied. For a new use of water submit a letter from the appropriate local government indicating that the project is compatible with the local government Comprehensive Plan.

K. Adjacent Uses of Water

Submit the names and complete addresses of adjacent owners that are withdrawing water from either groundwater or surface water and are within 300 feet of:

1. a well or pump proposed by the applicant,

2. an existing but unused well or pump,

3. a well or pump not listed under facilities in the applicant's current permit, or

4. an existing well or pump currently in-service if an increase in pumpage is proposed for the existing well or pump.

L. Proposed Surface Water Management System

If the Applicant proposes a new surface water management system then an evaluation of the impact of the proposed withdrawal on the lake system and conversely, the impact of the control elevations of the surface water management system on the withdrawal and water availability at the project site must be submitted.

Note: Include four copies of all information and one completed copy of Application Form 0050.

TABLE A

DESCRIPTION OF WELLS

WELL NO.				
Map Designation				
Existing/Proposed				
Diameter (Inches)				
Total Depth				
Cased Depth				
Screened Interval				
Pumped or Flowing				
Working Valve If Artesian (Yes/No)				
Pump Manufacturer and Model No.				
Pump (Centrifugal, Type Jet, Deep Jet, Turbine, etc.)				
Intake Depth (NGVD)				
Pump Capacity (GPM at __ FT of head at __ PSI)				
Active (Yes/No)				
Year Drilled				
Type of Meter				
Florida Plane Coordinates				

TABLE B

DESCRIPTION OF SURFACE WATER PUMPS

Drainage District:				
PUMP NO.				
Map Designation				
Surface Water Body				
Existing or Proposed				
Pump Manufacturer and Model Number				
Pump Type				
Pump Capacity				
Pump Horse Power				
Pump Diameter				
Elevation of Intake (NGVD)				
Is pump a two way pump?				
Florida Plane Coordinates				

TABLE C

DESCRIPTION OF CULVERTS

CULVERT NO.				
Map Designation				
Water Body				
Existing or Proposed				
Diameter*				
Height**				
Width**				
Type of Culvert***				
Culvert Length				
Invert Elevation (NGVD)				
Type of Control Device				
Irrigation or Drainage				
Florida Plane Coordinates				

*For Circular Culverts

**For Elliptical Culverts

***Corrugated Metal, reinforced concrete, etc.

TABLE D

WATER USE DATA FOR 12 MONTH PERIOD

FROM_____TO_____

Month/Year	Raw Water Pumpage		Total Raw Water Pumpage (MGM)	Total Water Treated (MGM)
	Ave. Day (MGD)	Max. Day (MGD)		
Total		*********		
Average		*********		

Ratio of water pumped to water treated_____.

Maximum day pumpage was _____MGD

and occurred on _____.

Ratio of maximum day pumpage to average day pumpage

was _____.

TABLE E

PAST WATER USE

Year	Past Population	Number of Units*	Total Annual (MG)	Average Day (MGD)	Maximum Day (MGD)
19					
19					
19					
19					
19					
19					
19					
19					
19					
19					

*Cumulative

TABLE F

PROJECTED WATER USE

Year	Projected Population	Number of Units*	Total Annual (MG)	Average Day (MGD)	Maximum Day (MGD)
19					
19					
19					
19					
19					
19					
19					
19					
19					
19					

*On separate sheet of paper separate units into types of units, number of persons/unit, and water usage/unit for each year on a cumulative basis.

TABLE G

IRRIGATION SYSTEM AND CROP DESCRIPTION

Type of Irrigation System _____ (See categories below)

Acres Served by this System _____ Acres

NAME OF CROP				
Existing (and How Long) OR Proposed (and When)				
Acres Planted				
Number of Plantings Per Year				
Month of First Planting*				
Month of Last Harvest*				
Average Time From Planting to Harvest*				

* Complete these sections for seasonal crops only

TYPES OF IRRIGATION SYSTEMS

SEEPAGE: Water is conveyed from the source and distributed to the crop through open ditches, usually 50 to 200 feet apart, and depends on seepage from one ditch to the other ditch.

FURROW: Water is conveyed from the source and distributed to the crop through the furrows between the rows. Furrows usually less than 50 feet apart.

CROWN FLOODING: Water is conveyed from the source and distributed between the beds up to the crown of the beds of the crop, and held for a few hours.

SEMICLOSED: Water is conveyed from the source through closed pipe and distributed to the crop through open ditches between crop rows.

CLOSED PIPE: Water is conveyed from the source and distributed to the crop through closed pipe. This system is used almost exclusively for fish farms.

DRIP: Water is conveyed from the source through closed pipe and distributed to the crop by dripping at land surface near each plant through special emitters set in small diameter plastic pipe or tubing.

JET: Water is conveyed from the source through closed pipe and distributed to the crop at land surface near each plant through small spray emitters (jets) set in small diameter plastic pipe or tubing.

OVERHEAD: Water is conveyed from the source through closed pipe and distributed to the crop through nozzles 15 to 20 20 feet above land surface.

SPRINKLER: Water is conveyed from the source through closed pipe and distributed to the crop through nozzles 1 to 2 feet above land surface.

VOLUME GUN: Water is conveyed from the source through closed pipe or hose and distributed to the crop through a large rotating nozzle.

SUBIRRIGATION: Water is conveyed from the source through closed pipe and distributed to the crop through underground tile.

TRAVEL GUN: A volume gun that travels the length of the crop row while irrigating.