

**Mitigation of Water Withdrawal Impacts
Through Permanent Retirement of Used Permitted Quantities
July 21, 2009 Draft**

Information and Examples

1. Introduction

The District has received requests for information about how to implement mitigation under the District's water use permitting rules based on permanently retiring from use the reasonable-beneficial, historically used quantity associated with one or more permits when proposed withdrawals are predicted to have unacceptable impacts to wetlands, lakes, streams, or springs, including Minimum Flows and Levels (collectively referred to as water resources), existing legal uses or off-site land uses. This situation may arise when permitted water use associated with a parcel of land is discontinued because the land use changes (sometimes referred to herein as a "land use transition"). The following information and examples explain how the District's rules allow ground water withdrawal adverse impacts associated with water use permit applications to be mitigated by the reduction in current or recent permitted pumpage when such mitigation is required.

If an applicant's proposed withdrawals are constrained by established Minimum Flows and Levels (MFLs) for water bodies within the Southern Water Use Caution Area (SWUCA), then the applicant must implement mitigation referred to as a Net Benefit to obtain or modify a permit. In order to provide a Net Benefit, the measures proposed by the applicant must offset the predicted impact of the proposed withdrawal and also provide an additional positive effect on the water body equal to or exceeding 10 percent of the predicted impact. The applicant will be required to provide reasonable assurance that the proposed Net Benefit will mitigate the predicted impacts, by following the criteria outlined in Section 4.3.B.4 (Minimum Flows and Levels) of the Water Use Permit Information Manual Basis of Review.

It should be noted that not all proposed water use increases (or new use), whether in the SWUCA, in the area subject to the Central Florida Coordination Area (CFCA) rules or elsewhere, will need to provide a Net Benefit or other mitigation. The impacts from some pumpage may not require any mitigation to meet District rule criteria described in Chapter 40D-2, F.A.C., and the Basis of Review. However, all other permitting criteria included within 40D-2, F.A.C., must be satisfied for all permit applications regardless of whether a Net Benefit or other mitigation is required.

The examples provided below are based on the assumption that mitigation is needed to meet District permitting criteria. If the applicant proposes to mitigate by using the wells associated with a Historic Permit and proposes to pump the Historically Used reasonable and beneficial quantities or less from each well, groundwater modeling may not be required (see Example 1). Other mitigation proposals will require groundwater modeling.

For the purposes of this document, when referring to a withdrawal impacting an MFL, the District is referring to impacting a water body with an established MFL and the water level is below the established MFL or the water level is at or above the established MFL but the proposed withdrawal will cause the actual flow or level to fall below the established MFL on a long term basis. If there is no anticipated impact to an MFL in the SWUCA, a Net Benefit will not be required.

2. Certain words and phrases used in the District's rules, or used here to aid in understanding the information and examples are set forth below:

Historic Permit – The permit from which quantities are being permanently reduced and retired.

Historical Use – Average pumpage calculated from the reasonable and beneficial quantities pumped during the last ten years pursuant to the Historic Permit.

Mitigation – includes the measures and actions provided to offset, lessen, rectify or prevent adverse impacts to the environment, water resources, existing land use, or legal users of the water resources.

Net Benefit – activities or measures that will result in an improvement to a Minimum Flow or Level water body within the SWUCA that more than offsets the impact of a proposed withdrawal.

Offset Quantity – a specific quantity of ground water available for mitigation, resulting from a reduction in impacts due to a reduction in reasonably and beneficially used ground water withdrawals from the Upper Floridan aquifer.

3. Applicable Regulations, Plans and Policies

Chapter 40D-2, F.A.C., Water Use Permits and the Basis of Review

Chapter 40D-80, F.A.C., Recovery and Prevention Strategies for Minimum Flows and Levels

Southern Water Use Caution Area Recovery Strategy, March 2006

Regional Water Supply Plan, December 2006

4. Process

A. Determine impacts of proposed withdrawals:

The applicant identifies the reasonable and beneficial quantities that it will propose to meet its water demands for the duration of the proposed permit. The ground water withdrawal site is identified by the applicant, and ground water modeling is used [the District-wide Regulation Model (DWRM) is recommended] to determine the extent of the withdrawal impact. If the withdrawal is not predicted to have adverse impacts on water resources, existing legal uses or off-site land uses, then no mitigation is needed. If these impacts are predicted to occur, then mitigation must be pursued. Note that redistribution of withdrawal points, etc., should first be attempted to eliminate or minimize impacts.

B. Determine quantity available to be used as mitigation:

In order to utilize the cessation of pumpage as mitigation, the reasonable and beneficial legal Historical Use of ground water under the Historic Permit must be documented. For example, in the case of an agricultural operation, documentation must be provided that demonstrates a specific acreage was being irrigated within the last ten years (Historical Use). The documentation is the average pumpage for the last ten years based on the metered data submitted to the District (Historical Use). The maximum average pumpage available as an impact offset cannot be greater than the total standard annual average daily permitted quantity on the Historic Permit. If water use did not occur for a portion of the ten-year period, then the applicant will need to provide documentation that explains non-use occurrences and justifies an average pumpage based on less than ten years. For those permittees not required to submit metered data to the District and who have no pumpage records, then documentation such as Greenbelt exemptions, receipts, and/or aerial maps showing the land use associated with the

historic water use can be submitted. If the permit required pumpage to be submitted but the permittee was not in compliance with the requirement, then the impacts associated with that permit will not be considered in the land use transition process unless the applicant can provide reasonable explanations (e.g., equipment failure, etc.) for the non-compliance. If the pumpage is considered, the applicant should use a methodology similar to that for non-metered water uses to estimate historic water use. The historic water use associated with agricultural lands can be determined using the current permitting calculation program (AGMOD) and an appropriate percentage-used factor, as determined by analyzing nearby metered similar use. An industrial or other water user may be able to provide project specific data or use estimated Water Use data supplied by the District. The applicant will only be permitted for that portion of any Offset Quantity for which the applicant demonstrates demand within the existing permit term or, for new permits or renewals, the proposed permit term.

C. Evaluate mitigation:

Ground water withdrawal impacts from the reduced or permanently retired Historic Permit quantities can be determined using the appropriately updated version of the DWRM.

DWRM can then be used to determine the differences in impacts from ground water withdrawals associated with the Historic Permit and the proposed permit. Depending on the location of the ground water withdrawals associated with the Historic Permit and the location of the proposed withdrawals relative to water resources, existing legal uses and off-site land uses, all, a portion, or in some cases none of the impact due to the Historic Permit's ground water withdrawals may be able to be used as mitigation for impacts associated with the proposed withdrawals. The modeled withdrawal impacts must still be shown to meet the District's permitting criteria on an individual and cumulative basis.

Once the applicant determines the Offset Quantities, the applicant should apply for a permit for these quantities or to add these quantities to their existing water use permit. To add the quantities, the applicant must submit the appropriate water use permit Application (based on the requested quantities) to modify their permit to increase quantities.

NOTE: Applications must include any appropriate Supplemental Form, including the SWUCA Supplemental Form and the SWUCA Net Benefit Supplemental Form if impacts to MFLs in the SWUCA are predicted.

The applicant for the Offset Quantities has to provide a written agreement from the permittee holding the Historic Permit authorizing the District to reduce the permitted quantity based on the decrease in ground water withdrawals or to cancel the Historic Permit if there is no continuing water use. If the well will not be used, it must be properly abandoned.

Throughout this document, references to retro-fitting, constructing, or abandoning (plugging) a water well require a licensed water well contractor to submit the State of Florida Application to Construct, Repair, Modify, or Abandon a Well.

5. Examples

The amount of Historical Use and its associated impact that can be utilized as mitigation will be determined on a case-by-case basis, depending on the location of the ground water withdrawals associated with the Historic Permit, and its impact on water resources, existing legal uses and off-site land uses and the impacts from the ground water withdrawals associated with the

proposed new or increased withdrawals. The following examples are intended to help clarify the process of providing mitigation through permanently retiring from use the reasonable-beneficial, historically used quantity associated with one or more permits. In each example, it is assumed the Historic Permit is in compliance with all permit terms and permitting rules and has documented Historical Use. The maximum average pumpage available as an impact offset cannot be greater than the total standard annual average daily permitted quantity on the Historic Permit.

Example 1 – Retrofit existing irrigation well to a public supply well, pumping equal or less quantities: An existing 100-acre citrus grove is being converted to a residential and commercial development and is proposing to use water from the well(s) on the existing citrus WUP for the public supply needs of the proposed development. The individual or entity (in this example the developer) who will serve as the water provider to the proposed development needs to submit to the District an Application to Transfer a Water Use Permit. Once the permit is transferred to the developer, they must submit the appropriate Application to modify the permit and change the use (see NOTE in 4.C., above). By staying at the same withdrawal location and at or below the Historic Permit's Historically Used quantity from each well (if there is any indication the Historic Permit impacted an MFL in the SWUCA, staying at least 10% less than the Historical Use to provide a Net Benefit), groundwater modeling may not be necessary.

The developer will retro-fit the existing irrigation well as a public supply source which will be associated with the same (or less) quantities. Since the well location does not change, the Offset Quantity is 100% of the Historically Used reasonable and beneficial quantity unless the Historical Use had an impact to an MFL in the SWUCA, then the Offset Quantity is 110% of the Historically Used reasonable and beneficial quantity (equaling no more than 90% of the Historical Use impact). Though there is a slight change in the timing and intensity of pumpage, agriculture being cyclic as compared to the more steady public supply use, when looked at as an annual impact, there should be no water resource or legal existing use issues with the proposed public supply impacts at the same or less annual average daily pumpage. Using the same well(s) (or replacement well if drilled at the same general location, generally no greater than 100 feet from the existing well) may increase the ability to use the greatest amount of the historical reasonably and beneficially used quantity.

When a developer transfers ownership of the water supply infrastructure to the local government, the local government must submit to the District an Application to Transfer a Water Use Permit. The local government may also choose to modify its existing water use permit to incorporate the new water supply infrastructure and associated quantities. If the withdrawal quantities associated with individual wells on the modified permit are proposed to change, modeling may be necessary at that time.

Example 2 – Retrofit existing irrigation well to a public supply well, pumping more quantities: This is the same as example number 1, however in this case the developer is proposing to pump more water from the retro-fitted well(s) than the Historic Quantities. Because quantities are proposed to increase, an impact analysis will be required to look at the additional impacts plus the existing impacts (a cumulative impact analysis) to determine if the proposed pumpage meets rule criteria. If the withdrawals are impacting an MFL water body in the SWUCA, a Net Benefit will be required. Changing the water use triggers the Net Benefit for the quantities associated with the Historic Permit because the quantities are considered "New Quantities." The applicant must offset the predicted MFL impact associated with the total requested

quantities and also provide an additional positive effect on the water body equal to or exceeding 10% of the predicted impact.

Example 3 – Construct new public supply well and plug irrigation well: This is the same as example number 1, however in this case the developer proposes to change the point(s) of withdrawal (construct a new well) by more than 100 feet and will abandon the existing irrigation well(s). The developer must submit an impact analysis that looks at the difference in impacts due to the Historical Use under the Historic Permit, and the proposed public supply use at the proposed withdrawal location (on both an individual and cumulative basis). The impacts to water resources, existing legal uses and off-site land uses must be determined and a detailed interpretation of the impact analysis provided. The amount of new permitted quantity potentially available for the proposed public supply permit could be more or less than the Offset Quantity available from the Historic Permit, depending on the location of the proposed public supply well(s) and Historic Permit well(s), in relation to environmental features, legal existing uses and off-site land uses. In addition, if an MFL water body in the SWUCA is impacted, then the applicant must offset the predicted impact associated with the total requested quantities and also provide an additional positive effect on the water body equal to or exceeding 10% of the predicted impact.

Example 4 – Public supply permittee applies to increase quantities from its wellfield predicated upon cancellation of an existing permit within its established service area: An existing 100-acre citrus grove is being converted to a residential and commercial development. The grove is contained within the service area of an existing public supply permittee that plans to furnish water to the development and the developer who now owns the acreage is ready to clear the trees and begin building homes. There will be no further citrus irrigation. The public supply permittee will cause impacts to water resources, existing legal uses and/or off-site land uses if it increases withdrawals at its wellfield to serve this development. One manner by which the public supply needs of this development can be at least partially met is for the developer to submit to the District an Application to Transfer the existing citrus grove's historic WUP. Once the permit is transferred to the developer, the public supply permittee submits the appropriate Application (based on the requested quantities), to modify its permit to increase quantities. The Application must include a letter from the developer authorizing the District to cancel the Historic Permit upon issuance of a modified permit to the public supply permittee for Offset Quantities. The impacts associated with the Historic Permit that is to be canceled will be considered by the District in its review of the application for modification (see NOTE in 4.C., above).

In this case, the public supply applicant proposes to consider the impact associated with the Offset Quantity from the Historic Permit. The amount of Offset Quantities ultimately available will be based on ground water impact analysis. Again, the location of the public supply wells, and the location of wells permitted under the Historic Permit, in relation to water resources, existing legal uses and off site land uses must be evaluated. Impacts to water resources, existing legal uses and/or off-site land uses associated with increased withdrawals from the public supply permittee's wells must be mitigated, or a Net Benefit provided if MFLs within the SWUCA are impacted, by the reduction or cessation of pumpage from the wells under the Historic Permit. The former agricultural WUP will be cancelled and its well(s) must be properly abandoned.

If the former agricultural well is to be used by the developer to irrigate medians or some common area of the new development, then the agricultural WUP will need to be modified accordingly, and less Historical Use and associated Offset Quantity will be available for the

public supply permit. The increase in quantities requested by the public supply permittee will need to be adjusted accordingly, consistent with a lower per capita water use rate associated with this development, due to some of the irrigation requirements of its customers being met by the former agricultural well. If the developer intends to continue to use some of the quantities from the agricultural well, rather than submit a letter authorizing the District to cancel the permit, the developer must submit a letter authorizing the District to reduce the permitted quantities and submit the appropriate Application. This letter and the Application should be submitted simultaneously with the public supply permittee's Application described above. The developer's Application to modify the existing agricultural permit should reflect the reduction in quantities and the change in use, and will be subject to issuance of the permit to the public supply permittee for their increased quantities to serve the development (see NOTE in 4.C., above). In addition, if an MFL water body in the SWUCA is impacted by the quantities proposed for common area irrigation, then the applicant must offset the predicted impact associated with the total requested quantities and also provide an additional positive effect on the water body equal to or exceeding 10% of the predicted impact associated with the total requested quantities.

Example 5 – Phased development, agricultural irrigation changing to public supply: This example involves an Historic Permit for a 500 acre citrus grove, with 5 wells, each serving a separate 100 acre portion of the grove, with development of the property occurring in annual 100-acre phases. The citrus grove is located within the service area of a public supply utility that plans to furnish water to the development. The public supply permittee will cause impacts to water resources, existing legal uses and/or off-site land uses if it increases withdrawals at its wellfield to serve this development. The utility intends to increase its existing permitted quantities predicated on the Offset Quantities associated with the Historic Permit. The developer must submit an Application to Transfer the Historic Permit; then, the public supply permittee submits the appropriate Application (based on the requested quantities), to modify its permit to increase quantities. The Application must include a letter from the developer authorizing the District to add a condition to the Historic Permit to reduce quantities to coincide (temporally) with increases in quantities for the public supply permittee (see NOTE in 4.C., above).

For the public supply permit modification, the entire 500 acre irrigation (reasonable and beneficial quantities) impact is modeled and that portion of the impact that can be used as Offset Quantities by the public supply permittee is determined. The amount of impact that can be utilized as mitigation for each phase will be determined case-by-case, depending on the locations of the agricultural wells, the public supply wells, neighboring legal existing withdrawals, off-site land uses and water resources (including MFLs and stressed lakes). Based on the impact analysis, the public supply permittee will determine how much of an increase in pumpage from its public supply wells meets permitting criteria. The public supply permittee will need to document actual demand for any increase in permitted quantities. The public supply permittee must submit the appropriate Application (based on its requested quantities), to modify its permit to increase quantities (see NOTE in 4.C., above). The entire amount of impact that can be utilized by the public supplier is calculated, and the associated permissible quantity, which will be utilized within the life of the WUP, can become part of the public supplier's WUP. However, the citrus irrigation will continue in part (for decreasing acreage) for five years in this example. Pursuant to the agreement by the developer and the new permit condition, the District will modify the Historic Permit to reduce permitted quantities at the same time that the public supply permittee is authorized to increase pumping based on utilizing Offset Quantities from the Historic Permit. At the end of the need for citrus irrigation, the Historic Permit will be cancelled or modified (if the developer maintains quantities for any special purpose), as is appropriate. If

the Historic Permit is cancelled, the irrigation wells must be properly abandoned. In addition, if an MFL water body in the SWUCA is impacted, then the applicant must offset the predicted impact associated with the total requested quantities and also provide an additional positive effect on the water body equal to or exceeding 10% of the predicted impact.

Since impacts to water resources, existing legal uses and/or off-site land uses are a concern, by special condition, the public supplier will not be allowed to utilize the Offset Quantity (increase public supply pumpage) until the public supply permittee documents that the representative portion of the citrus irrigation withdrawals has been discontinued. If this were not required, the citrus irrigation pumpage could continue even as the public supply pumpage increased. The public supply permittee must document the specific citrus irrigation withdrawal impact as going away on a specified periodic basis (in this example annually), and the Historic Permit will be modified to show this decrease in withdrawal quantities.

Example 6 – Irrigation well changing to a supplemental well for a reclaimed water system: An existing 100-acre citrus grove is being developed. The developer who now owns the acreage is ready to clear the trees and begin building homes. There will be no further citrus irrigation. The indoor water needs of the development are to be met with potable water supplied by the local government's utility, while irrigation demands are to be met by the local government's regional reclaimed water system. The Historic Permit's wells can be used to supplement the local government's regional reclaimed water system, either to be used as an interim source as the public supply utility is in the process of expanding their reclaimed water system, or on an intermittent basis to meet peak demand when insufficient reclaimed water is available. By using this well the local government will cause impacts to water resources, existing legal uses and/or off-site land uses. The well owner (local government) needs to submit to the District an Application to Transfer a Water Use Permit. Once the permit is transferred to the local government, the local government submits the appropriate Application (based on the requested quantities) for quantities to supplement its reclaimed water system (see NOTE in 4.C., above). Note that because a portion of the utility's customers' irrigation demand is to be met with groundwater through supplementation of the reclaimed system, the per capita allocation to the utility for potable supply to this development must be reduced through a Modification to the local government's public supply WUP. In addition, if an MFL water body in the SWUCA is impacted by the withdrawals used to supplement the reclaimed water system, then the applicant must offset the predicted impact associated with the total requested quantities and also provide an additional positive effect on the water body equal to or exceeding 10% of the predicted impact associated with the total requested quantities.

Example 7 – A public supply utility intends to modify its WUP to increase quantities predicated on an industrial operation shutting down: There is a legal existing, reasonable and beneficial use, properly permitted. There will be no further industrial use at the site. If mitigation is needed in order for the public supply utility to increase quantities, the utility should act in tandem with the industrial entity to simultaneously cancel the industrial WUP and modify the public supply WUP to increase quantities. The public supply utility must submit the appropriate Application (based on the requested quantities), to modify its permit to increase quantities, with the proper documentation of the increased water requirement. The Application must include a letter from the permittee under the Historic Permit authorizing the District to cancel the Historic Permit upon issuance of a modified permit to the public supply permittee for Offset Quantities. The impacts associated with the industrial WUP that is discontinued will be considered as mitigation, by the District in its review of the public supply application for modification (see NOTE in 4.C., above).

In this case, the public supply utility can propose to consider the impact due to the reasonable and beneficial industrial withdrawal that is being canceled as mitigation for the increased impact associated with increased withdrawals from the public supply utility's wells. The amount actually allowed as an Offset Quantity will be based on the results of ground water impact analysis. Again, the location of the public supply wells in relation to water resources, existing legal uses and off-site land uses must be evaluated. The public supplier may be able to obtain the greatest mitigation by using the discontinued industrial wells, or placing any new public supply wells nearby. If they are not to be used, then the former industrial wells must be properly abandoned. In addition, if the public supply utility proposes to use the wells associated with the Historic Permit (or replacement well if drilled at the same general location, generally no greater than 100 feet from the existing well), and the withdrawals from those wells impact an MFL water body in the SWUCA, then the applicant must offset the predicted impact associated with the total requested quantities and also provide an additional positive effect on the water body equal to or exceeding 10% of the predicted impact associated with the total requested quantities.

Summary

As described above, there are a number of means by which new ground water withdrawals that would otherwise be constrained by impacts, can be permitted through the "land use transition" process. In this process, the District is not transferring quantities, but rather allowing the applicant to mitigate impacts associated with proposed new withdrawals through the cessation of other documented historic withdrawals. However, just reaching an agreement with a developer/owner who controls a certain amount of land with existing permitted quantities, all or some of which have been historically used in a reasonable and beneficial manner, does not guarantee an applicant that the same quantity of pumpage at their wells will be permitted as is permitted under the Historic Permit. It will be a case-by-case determination dependent on the results of impact analyses and demonstration of reasonable demand. This discussion is not intended to represent every scenario. Other scenarios will require coordination with the District.