EDWARDS AQUIFER AUTHORITY

REGULATORY IMPACT ASSESSMENT FOR PROPOSED IMPLEMENTATION RULES

CHAPTER 702 (GENERAL DEFINITIONS);
CHAPTER 709 (FEES), SUBCHAPTER D (AQUIFER MANAGEMENT FEES);
CHAPTER 711 (GROUNDWATER WITHDRAWALS), SUBCHAPTERS E (GROUNDWATER WITHDRAWAL PERMITS), F (STANDARD GROUNDWATER WITHDRAWAL CONDITIONS), G (GROUNDWATER AVAILABLE FOR PERMITTING; PROPORTIONAL ADJUSTMENT; EQUAL PERCENTAGE REDUCTION), L (TRANSFERS), AND M (METERS; ALTERNATIVE MEASURING METHODS; AND REPORTING)
CHAPTER 715 (COMPREHENSIVE WATER MANAGEMENT PLAN IMPLEMENTATION), SUBCHAPTERS A (DEFINITIONS) AND D (DEMAND MANAGEMENT AND CRITICAL PERIOD MANAGEMENT RULES)

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EXECUTIVE SUMMARY

Under its Legislative mandate, the Edwards Aquifer Authority (Authority) has the responsibility "… to manage, conserve, preserve, and protect the Aquifer and to increase the recharge of, and prevent the waste or pollution of water in the Aquifer" (S.B.1477, 73rd Legislature of the State of Texas, 1993, the "Act"). The Authority's Board of Directors has determined that to effectively implement the Act it is necessary to enact rules. In certain cases involving Proposed Rules having potentially widespread and substantial effects on the public, the Board's policy is to direct the General Manager, through the Authority's General Counsel, to conduct an assessment of the potential impacts of the Proposed Rules – both adverse and beneficial.

This document assesses the impact of the Proposed Rules (**Appendix A**): CHAPTER 702 (General Definitions); CHAPTER 709 (Fees), SUBCHAPTER D (Aquifer Management Fees); CHAPTER 711 (Groundwater Withdrawals), SUBCHAPTERS E (Groundwater Withdrawal Permits), F (Standard Groundwater Withdrawal Conditions), G (Groundwater Available for Permitting; Proportional Adjustment; Equal Percentage Reduction), L (Transfers), and M (Meters; Alternative Measuring Methods; and Reporting); CHAPTER 715 (Comprehensive Water Management Plan Implementation), SUBCHAPTERS A (Definitions) and D (Demand Management and Critical Period Management Rules). These Proposed Rules are informally referred to as the "junior/senior implementation rules" (hereafter, Proposed Implementation Rules).

These rules implement Final Rules adopted by the Board in December 2003 (Chapter 711, Subchapters E (Groundwater Withdrawal Permits), G (Groundwater Available for Permitting; Proportional Adjustment; Equal Percentage Reduction) and K (Additional Groundwater Supplies), §§711.98 (initial regular permits), 711.164 (Groundwater Available for Permitted Withdrawals for Initial and Additional Regular Permits), 711.176 (Groundwater Amounts for initial regular permits; Interruptible Withdrawals of Phase-2 Proportional Amounts), and 711.304 (Allocation of Additional Groundwater Supplies).

In essence, under these Chapter 711 Final Rules, qualifying initial regular permits will be issued with one groundwater withdrawal amount that is partitioned into two parts: (1) an "Interruptible Right"; and (2) an "Uninterruptible Right". The Interruptible Right is subject to interruption when for the San Antonio Pool, Index Well J-17 is less than or equal to 665 feet above mean sea level (msl), and for the Uvalde Pool, Index Well J-27 is less than or equal to 865 feet msl. The Uninterruptible Right is subject to interruption when for the San Antonio Pool J-17 is less than or equal to 650 feet msl and for the Uvalde Pool, J-27 is less than or equal to 845

feet msl. (Note: in this regard the Uninterruptible Right is misleadingly named because it is also Interruptible. However, this is the terminology employed by the Act in §1.14(f) and for this reason the Authority adopts it.) Additionally, withdrawals of the Interruptible Right are not accounted for with respect to the §1.14(b) 450,000 acre-feet annual withdrawal "cap". Uninterruptible Rights do apply with respect to the cap.

Impacts on the Authority of the Proposed Implementation Rules would include additional monitoring and enforcement responsibilities to oversee accounting for Interruptible and Uninterruptible Rights to ensure that Interruptible Rights are withdrawn only when the applicable index well levels exceed the specified trigger levels. As the effects of the Proposed Implementation Rules become apparent it may become necessary to provide more regulatory and administrative definition for purposes of monitoring compliance. This requirement may create the need for additional staff beyond the two identified in the Strategic Plan. In the event the Proposed Implementation Rules are adopted as Final Rules, it would be prudent to update the Strategic Plan to reflect these changes.

There are two basic areas of concern in the context of intergovernmental issues. The first is the potential for reducing the cost-effectiveness of large-scale municipal water storage projects by linking Interruptible and Uninterruptible water rights in contrast to assumptions made in the December 2003 Rules Assessment. The second and related concern is the apparent difficulty agricultural users may encounter when they attempt to utilize or sell surplus water to public entities, given the linkage of Interruptible and Uninterruptible Rights.

Impacts on the regulated community of the Proposed Implementation Rules would include: (1) the prohibition of the separate lease or sale of Interruptible Rights, as the Proposed Implementation Rules would require that all transfers of rights must be in a fixed proportion of Uninterruptible and Interruptible Rights; (2) the loss of the ability to exclusively withdraw Interruptible Rights in the early part of a year in which the Aquifer is above the index well trigger levels; and (3) as a result of the reduced utility and flexibility in the use of Interruptible Rights implied by (1) and (2) above, the potential value of these rights to the regulated community would likely be less than that estimated in the Rules Assessment (EAA, 2003) for the Final Rules adopted in December 2003. These Proposed Implementation Rules which initially introduced the junior/senior concept would have a particularly negative impact on the cost of Aquifer storage and recovery (ASR) projects by greatly limiting the ability of ASR sponsors to buy or lease relatively less expensive Interruptible Rights separately from more expensive Uninterruptible Rights.

Impacts on the Aquifer and Aquifer-related resources of the Proposed Implementation Rules would include a potential reduction in the probability of Aquifer withdrawals of Uninterruptible and Interruptible Rights compared to the withdrawals anticipated in the December 2003 Rules Assessment – a benefit for Aquifer levels, springflows and Aquifer-related endangered species. The mandatory proportional withdrawal of Interruptible and Uninterruptible Rights, as set out in the Proposed Implementation Rules, would mean that only in those years in which the Aquifer level remained above the index well trigger levels for the entire year could permittees withdraw all of their Interruptible and Uninterruptible Rights. Between 1980 and 2003, index well J-17 remained above 665 feet msl for the whole year in 1981, 1987, 1993, and 2003. Between 1980 and 2003, index well J-27 remained above 865 msl for all years except 1985, 1991, and 1997 and some Interruptible Rights could be withdrawn for part of each of those years. An additional report by the South Central Texas Water Advisory Committee (2000) determined through modeling that term permits would be available for withdrawal some of the time even with other regulatory controls in place to protect springflows (see **Chapter 3.0**).

Although both Interruptible and Uninterruptible Rights could potentially be completely withdrawn by the end of those years in which the Aquifer level remained above the index well trigger levels for the entire year, in these years water levels and springflows would be at very high levels, meaning that excess pumpage would not result in adverse effects at Comal and San Marcos springs. Extremely low springflows at Comal Springs occur when water levels at J-17 are well below 665 feet msl, precluding the use of Interruptible Rights. By implementing the concept of Interruptible and Uninterruptible Rights, the Authority can limit withdrawals to the amount required by the Act when water levels are within certain limits (while honoring historical average use and irrigator minimums), thereby preserving minimum Aquifer levels, springflows and endangered species habitat under most conditions.

Although the proportional withdrawal of Interruptible and Uninterruptible Rights as mandated by the Proposed Implementation Rules would restrict and increase the cost of the planned implementation of ASR projects, the withdrawal of Interruptible Rights to supply ASR projects would have positive effects on Aquifer levels and springflows by reducing demand for Aquifer pumping during dryer periods because water previously withdrawn under these rights could be utilized. The Proposed Implementation Rules would probably result in modest beneficial impacts to the Aquifer, the springs and their endangered biological resources compared to the discussion in the Rules Assessment for the December 2003 Final Rules (EAA, 2003a). Adverse impacts of Interruptible Rights withdrawals to the spring ecosystems would be largely avoided as these rights would only be withdrawn during conditions of high Aquifer levels and springflows (and in combination with Uninterruptible Rights) – conditions which support

adequate habitat. Additional measures to mitigate adverse impacts to endangered species would likely be provided through the planned implementation of biological and Aquifer management as identified in the Authority's proposed Draft Habitat Conservation Plan (EAA, 2004) and Environmental Impact Statement Draft (HCP/EIS) currently under development.

Several sections of the Proposed Implementation Rules deal specifically with concerns raised in response to the December 2003 Final Rules and the lack of specificity about record keeping for Interruptible Rights. Combined Interruptible/Uninterruptible Rights lend more predictability to withdrawal scheduling and reporting. The reporting requirements under Subchapter M, Section 711.414 specify that reporting forms should show withdrawals for the entire year and month-to-month broken down by Uninterruptible and Interruptible Rights withdrawals. These same breakdowns should be reflected on the Quarterly Scheduled Withdrawal Amount forms, for those permit holders with Interruptible Rights. This is not a new requirement to submit a schedule, but for additional information to be portrayed on that schedule. The required reporting on quarterly withdrawals applies to all initial regular permit holders year-round. This does increase the "paperwork" requirements for permit holders, with a greater negative effect on smaller businesses and farms. Section 715.204(a)(4) states that Interruptible Rights can only be withdrawn if a Notice of Cessation is not in effect. The additional notification requirements will have the greatest effect on the Authority, who will have to receive, monitor, and process these reports, but they will also add a fairly large amount of paperwork to permittees preparing these reports.

The key change in these Proposed Implementation Rules for carrying out the December 2003 Final Rules is the mandatory proportionality of Uninterruptible and Interruptible Rights with respect to their transfer and withdrawal. Assumptions made in the December 2003 Rules Assessment that Interruptible Rights could be transferred and withdrawn separately would no longer be valid if these Proposed Rules are adopted by the Authority. The requirement of fixed proportionality between Uninterruptible and Interruptible Rights would, if adopted: (1) substantially reduce the utility and flexibility of Interruptible Rights withdrawals under regular permits; (2) preclude the development of a market (and therefore a determination of price) for separate Interruptible Rights; (3) slightly increase the regulatory burden on the Authority and the regulated community (the increased regulatory burden would probably be less, however, than if Interruptible Rights were to remain separate) ; (4) likely reduce total annual withdrawals under regular permits below the potential withdrawal level under existing rules; and (5) provide a modest benefit to Aquifer levels, springflow and endangered species habitat as a result of these reduced withdrawals.

1.0 INTRODUCTION

1.1 EDWARDS AQUIFER AUTHORITY ("AUTHORITY") RULES ASSESSMENT PROCESS

In 2001, the Legislature of the State of Texas determined that the rule-making function of the Edwards Aquifer Authority would no longer be subject to the requirements of the Administrative Procedures Act, found at Chapter 2001 of the Texas Government Code, to perform evaluations of a Proposed Rules' impacts on, among others, small businesses, local employment, and other interests (S.B. 2, 77th Legislature, 2001). Nonetheless, the Authority and its Board of Directors have determined that the assessment of certain potential impacts of selected Proposed Rules would benefit the Authority, the regulated community, and the public. Accordingly, the Board of Directors has delegated to the General Manager the discretion to direct the General Counsel to prepare a rules assessment to assist the Board in the process of evaluating and giving final approval to a set of Proposed Rules.

Under a rules assessment protocol approved by the General Manager, the rules assessment analysis would generally consist of four principal elements:

Impacts on the Authority. How would implementation of the Proposed Rules affect the Authority with respect to staffing requirements, costs, record keeping and reporting, enforcement responsibilities, and other administrative and risk management issues?

Impacts on the regulated community. What is the nature and extent of effects that would be directly experienced by persons or groups whose property or activities are addressed by the Proposed Rules ?

Impacts on the Aquifer and Aquifer-related elements of the natural environment. To what extent are the Proposed Rules' effects on the regulated community balanced by the aggregate impacts of the rules' implementation on the quantity or quality of water in the Aquifer, springs, riparian habitats, and other Aquifer-dependent natural resources?

Longer term or indirect social and economic effects. What secondary or cumulative effects may accrue to the regional economy, population, or institutions from implementation of the Proposed Rules ?

The Authority's General Manager has directed that a rules assessment generally following the above protocol be completed for the Proposed Rules: CHAPTER 702 (General Definitions); CHAPTER 709 (Fees), SUBCHAPTER D (Aquifer Management Fees);

CHAPTER 711 (Groundwater Withdrawals), SUBCHAPTERS E (Groundwater Withdrawal Permits), F (Standard Groundwater Withdrawal Conditions), G (Groundwater Available for Permitting; Proportional Adjustment; Equal Percentage Reduction), L (Transfers), and M (Meters; Alternative Measuring Methods; and Reporting); CHAPTER 715 (Comprehensive Water Management Plan Implementation), SUBCHAPTERS A (Definitions) and D (Demand Management and Critical Period Management Rules). This Rules Assessment is generally based on the application of available data and previous research and studies performed by the Authority, especially the Authority's Rules Assessment of Chapter 711 Proposed Rules (EAA, 2003a) establishing Interruptible Rights subsequently adopted thus hereafter Chapter 711 Final Rules. See **Appendix A** for a full copy of the Proposed Implementation Rules.

1.2 BACKGROUND FOR THE PROPOSED RULE

The Act generally establishes a "cap" on certain annual withdrawals pursuant to regular permits, limiting permitted withdrawals from the Aquifer for the period ending December 31, 2007, to 450,000 acre-feet for each calendar year. (Act § 1.14(b) and (c)). The Act also cites specific Aquifer levels below which the Authority must interrupt withdrawals under regular permits. Specifically, § 1.14(f) of the Act states that when the level of the Aquifer at Index Well J-17 is equal to or greater than 650 feet above msl, or equal to or greater than 845 feet above msl at Index Well J-27, the Authority may authorize withdrawals from the San Antonio and Uvalde Pools, respectively, on an Uninterruptible basis. On the other hand, under § 1.14(f) the Authority may determine that an appropriate water management strategy is to not allow uninterrupted withdrawals, but instead interrupt all or part of authorized withdrawals at index well levels higher than those set out in § 1.14(f).

The Act also establishes the amount of groundwater withdrawals to be authorized by initial regular permits based on historical groundwater use minimums. Section 1.16(e) provides in relevant part, that " . . . An existing irrigation user shall receive a permit for not less than two acre-feet a year for each acre of land the user actually irrigated in any one calendar year during the historical period. An existing user who has operated a well for three or more years during the historical period shall receive a permit for at least the average amount of water withdrawn annually during the historical period."

A major administrative challenge for the Authority has been reconciling the 450,000 acre-feet per year cap and the statutory minimums under §1.16(e). When initial regular permits are issued, a permittee remains in "Interim Authorization Status" until January 1 of the following year when the permit becomes effective (§711.66). All past permits have totaled less than 450,000 acre-feet per year. However, after 2003 initial regular permits that have been in Interim

Authorization Status became effective on January 1, 2004, the total withdrawals authorized by effective initial regular permits exceeded 450,000 acre-feet per year for the first time. For 2004, initial regular permits equal 502,517 acre-feet. The Authority expects total initial regular permits to equal approximately 560,000 acre-feet. Therefore, initial regular permits must be reduced to total 450,000 acre-feet through the "proportional adjustment" process also specified by §1.16(e) of the Act.

In an effort to honor both of the statutory minimums and the 450,000 acre-feet cap, the Authority, in December of 2003, adopted Final Rules revising Subchapters E (§711.98), G (§711.164 and §711.176) and K (§711.304) of Chapter 711. The Final Rules provided for the Authority to initiate proportional adjustment of initial regular permits (previously authorized under §1.16(e) of the Act and §711.172 of the rules) according to established formulas that account for irrigator minimums and historical average minimums. The rules (§711.176(b)(6)) stated that if a permit holder qualifies for an irrigator minimum or historical average use minimum and proportional adjustment (PA-2) results in an adjusted permit amount below that minimum, the difference were compensated at fair market value. See **Section 3.4** for a discussion of possible costs of purchasing water rights. A multi-step proportional adjustment process set out in §711.172(g) would take place after which, under the December 2003 Final Rules, most permit holders would be granted Interruptible Rights in lieu of compensation. The first adjustment is called proportional adjustment 1 (PA-1) and the second is proportional adjustment 2 (PA-2). As an estimated provisional PA-1 was proposed by the General Manager in 2000, this assessment discusses the PA-2 process. (Note: initial regular permits have been issued with estimated PA-1 calculations set out in the initial regular permits based on the General Manager's 2000 proposal. In reality, the PA-1 is provisional and subject to revision over time as more information is acquired. The "final" PA-1 and PA-2 will be calculated when the last IRP becomes final at some indeterminate date in the future.) The primary substantive change to the December 2003 Final Rules was that, instead of issuing initial regular permits with aggregate "Uninterruptible Rights" of 450,000 acre-feet per year and compensating initial regular permits holders for PA-2 amounts under the statutory minimums, "Interruptible Rights" were granted.

The creation of a conditional Interruptible Right in lieu of compensation for the difference between the PA-2 amount and the applicable minimum allowed the Authority to harmonize the required minimums in § 1.16 (e) of the Act with meeting the 450,000 acre-feet withdrawal limit required by § 1.14 (b). The Authority is now proposing additional rules needed to fully implement the establishment of Interruptible Rights. The Proposed Implementation Rules include provisions that are not compatible with assumptions made in the Regulatory Assessment for December 2003 Final Rules. This regulatory assessment addresses the

ramifications of the Proposed Implementation Rules on implementation of Interruptible/Uninterruptible Rights and potential challenges that may arise.

1.3 DESCRIPTION AND REGULATORY SCHEME OF PROPOSED RULE

The regulated community for the Proposed Implementation Rules includes all owners of initial regular permits who have received Interruptible Rights, including municipal, industrial, and irrigation water users. The regulatory scheme for Interruptible Rights was largely laid out in §711.172 Proportional Adjustment of initial regular permits. This section defines historical average minimums and irrigator minimums, and lays out the multi-step process of proportional adjustment to reduce aggregate initial regular permits to 450,000 acre feet per year. The December 2003 Final Rules, Subchapters E, G, and K Final Rules replace a prior requirement to compensate that adjustment at fair market value with creation of Interruptible Rights. Those Interruptible Rights can be withdrawn when Index Well J-17 exceeds 665 feet above msl for the San Antonio pool and when Index Well J-27 exceeds 865 feet above msl for the Uvalde pool.

The Proposed Implementation Rules implement the Interruptible Rights concept by addressing assessment of fees, billings, and user contracts; clarifying permit types and standard conditions with respect to Interruptible Rights; updating groundwater available for permitting subject to fixed proportionality of Interruptible Rights and Uninterruptible Rights; establishing limitations on transfers; updating reporting and monitoring requirements; and integrating Interruptible withdrawals with Demand Management and Critical Period Management Rules (DM/CPM Rules). The key provision of the Proposed Rules is the "automatic" allocation of withdrawals as bound Interruptible Rights and Uninterruptible Rights. Interruptible Rights cannot be transferred (sold or leased) separately from Uninterruptible Rights.

Chapter 3 of this Assessment focuses on the binding of rights in a fixed proportion which affects their utility, flexibility and value, and therefore requires revisiting several assumptions made in the December 2003 Rules Assessment. Chapter 3 examines the preclusion of a new market for separate Interruptible Rights (and the indeterminate market for combined Interruptible Rights/Uninterruptible Rights); the additional regulatory burden on the Authority and members of the regulated community; the moderate potential reduction in withdrawals resulting from combining the rights; and the modest benefit to springflows, the Aquifer, and the Aquifer-dependent species.

1.4 METHODS AND ORGANIZATION

1.4.1 Report Organization

This report provides a characterization of the potential impacts of the Proposed Rules. Pursuant to the rules assessment protocol described in **Section 1.1**, this assessment analyzes the expected impacts of the Proposed Implementation Rules on the Authority, the regulated community, and the Aquifer and Aquifer-related resources. **Section 2.0** addresses potential impacts on the Authority. **Section 3.0** describes impacts to the regulated community with regard to the implementation of Interruptible Rights. **Section 4.0** discusses impacts on the Edwards Aquifer and Aquifer-related elements of the natural environment. **Section 5.0** provides a section-by-section analysis of the Proposed Implementation Rules. **Section 6.0** presents a summary of findings.

1.4.2 Methods and Assumptions

The impacts of the Proposed Rules establishing the Interruptible Right concept were assessed in the Authority's Regulatory Assessment of the December 2003 Final Rules (EAA, 2003). The Chapter 702, 709, 711, and 715 Proposed Rules (May, 2004) to be assessed here are additional rule changes required to implement the December 2003 Final Rules establishing the Interruptible Right. The December 2003 Rules Assessment necessarily made certain assumptions with regard to their implementation in order to characterize the expected impacts to the regulated community. Specific provisions of the Chapter 702, 709, 711, and 715 Proposed Implementation Rules that did not conform to assumptions made in the December 2003 Rules Assessment were identified. These provisions were discussed in a scoping meeting with EAA staff and their likely effect on the conclusions of the December 2003 Rules Assessment noted for further examination in this assessment.

Hydrological data from the Authority were examined with respect to the frequency of Aquifer levels above the index well trigger levels established in the December 2003 Final Rules as adopted for Interruptible Right availability for withdrawal through December 31, 2007 (San Antonio Pool – Index Well J-17 above 665 msl, Uvalde Pool – Index Well J-27 above 865 msl). Examination of the hydrological data was used to help assess the potential impact of the Proposed Rules. Additionally, the economic analysis of the Interruptible Right presented in the December 2003 Final Rules (Section 3.4.1) was revisited in this study with regard to how the changed implementation procedures set out in the Proposed Implementation Rules would alter conclusions reached in the earlier assessment.

2.0 IMPACTS ON THE EDWARDS AQUIFER AUTHORITY

2.1 STAFFING REQUIREMENTS (BASIS)

The implementation of Sections 1.14 (b) and (c) of the Edwards Aquifer Authority Act (S.B. 1477, 73rd Legislature of the State of Texas, 1993, the "Act") generally require the Authority to implement programs through the promulgation of rules to limit certain annual withdrawals, pursuant to regular permits, to 450,000 acre-feet for each calendar year for the period ending December 31, 2007. Additionally, the Act under Section 1.14 (f) sets forth location specific Aquifer levels below which the Authority is required to reduce or interrupt withdrawals made pursuant to regular permits. Beyond that basic requirement, under the same Section 1.14 (f), however, the Authority is given broad discretion to adjust the conditions under which withdrawals may be made during periods when Aquifer levels are not below minimum elevations.

Related to Section 1.14(f) is the Authority's responsibility to perform Demand Management/Critical Period planning which under Section 1.26 of the Act requires the Authority to:

- Distinguish between discretionary and non-discretionary water use
- Require the reduction of discretionary uses as much as possible
- Require utility pricing that limits discretionary use as much as possible
- Require reduction of non-discretionary use by permitted or contractual users as much as possible

In order to implement those requirements and additional Aquifer management initiatives spelled out in Subsections 1.14(h), 1.25 and 1.26 of the Act, the Authority developed and executed a strategic plan that included the drafting of Chapter 702 (General Definitions), Chapter 709 (Fees), Subchapter D (Aquifer Management Fees), Chapter 711 (Groundwater Withdrawals), Subchapters E (Groundwater Withdrawal Permits), F (Standard Groundwater Withdrawal Conditions), G (Groundwater Available for Permitting; Proportional Adjustment; Equal Percentage Reduction), L (Transfers), and M (Meters; Alternative Measuring Methods; and Reporting), Chapter 715 (Comprehensive Water Management Plan Implementation) Subchapters A (Definitions) and D (Demand Management and Critical Period Management Rules).

The intent of these rules is to provide for the maximum aggregate withdrawals from the Aquifer that are authorized by permit, interim or exempt well status to the extent that

the Authority's Aquifer management strategy, "to slow the rate of decline of spring-flows in Comal or San Marcos Springs," is not compromised.

The Authority's initiative to fully implement the intent of these Proposed Implementation Rules is linked to several related activities in the EAA Strategic Plan:

- Reduction of Aquifer pumping to 450,000 acre-feet (Objective 1.3)
- Eventually reducing Aquifer pumping to 400,000 acre-feet (Objective 1.4)
- Development of a process for adjusting the cap (Objective 1.5)
- Implementation of the Habitat Conservation Plan (Objective 2.1)
- Implementation of the Comprehensive Water Management Plan (Objective 2.3)
- Establishment of a demand management plan (Objective 2.9)
- Continuation of Optimization Technical Studies (Objective 3.2)
- Continued enforcement of the Endangered Species Act which requires enforcement action by the Authority (Objectives 5.1 and 5.2)

In an attempt to make certain provisions of these rules more responsive to the intent of the Act, the Authority is proposing to amend them by refining the method for determining groundwater withdrawal amounts. The development of Interruptible and Uninterruptible water rights takes place in the existing regulatory framework that has already been implemented.

According to the EAA Strategic Plan, the responsibility for implementing these Proposed Implementation Rules lies primarily with the Chief Technical Officer and the Regulatory Programs Coordinator. However, due to the fact that they are central to the primary mission of the Authority and are, as a consequence, heavily integrated into much of the rest of its programmatic structure, the Authority added two additional staff persons. Section 2.8 of the Plan identified the addition of two "Program Associates" in 2003.

Given the ambiguity associated with the Proposed Implementation Rules, especially with regard to managing the interface between the Authority and permittees who may be unclear about the reporting requirements of these amendments, it may be necessary to revise staffing estimates after the full effect of the rule is better understood.

2.2 FINANCIAL REQUIREMENTS

Initially, According to Sections 2.8.1 and 2.8.2 of the Strategic Plan, the funding for the development and adoption of the Proposed Implementation Rules was bundled with several other rule sets that were scheduled for repeal, amendment or re-codification in 2002. The total

estimated cost for executing the activities listed in Section 5.1.1 and 5.1.2 (which fulfilled the notice requirements for rules listed in 5.1.1) was $549,700.00. There is a single cost allocation for $50,000 identified in Section 5.1.5 of the Strategic Plan in 2004 for adoption of rules in the current set, but is allocated only for Chapter 709, Subchapter E (Fees) and Chapter 715, Subchapter G (Comprehensive Water Management Plan Implementation).

Also in 2004, $7,000 is allocated for the development and distribution of an information piece to explain the Demand Management/Critical Period program to permittees and the general public. The information piece will be updated and distributed again in 2006 at an estimated cost of $7,000 per distribution.

All recurring tasks associated with Chapter 715 not covered by the base operating costs in 2004, 2005 and 2006 are funded at $17,000, $10,000 and $17,000, respectively above the base operating costs levels for each year reported in the summary table on page 67 of the Authority's Strategic Plan.

Enforcement and compliance costs for the Proposed Implementation Rules are bundled with the entire rule set under Section 5.2 of the Strategic Plan. The programmatic total for enforcement and compliance for 2004 is $73,000; for 2005 is $3,000 and for 2006 is $3,000. As indicated in previous discussions of bundling costs on a programmatic level there is no mechanism for itemizing these costs by rule.

2.3 ENFORCEMENT RESPONSIBILITIES

Historically, enforcement of the Authority's rules has focused primarily on persons that have applied for and received permits or other authorizations for the withdrawal of water from the Aquifer. The Proposed Implementation Rules under consideration here are directly on point with the Authority's more widely-recognized role to manage withdrawals within the parameters provided under its statutory and regulatory authorization.

For the most part, it is clear that the Authority has the ability to amend the parameters of regular permits, revoke permits or otherwise penalize permittees who do not comply with the established regulatory framework for allocating withdrawals from the Aquifer. How this process will work with regard to the monitoring, accounting for and enforcement of withdrawals from Interruptible and Uninterruptible supplies when index well elevations exceed minimum thresholds allowing these right to be pumped will be dealt with in more detail in **Section 5.0** Rule Analysis by Section at the end of this report. It is also relevant here to the extent that it is apparent how compliance will be interpreted under the proposed amendments.

Storage of Interruptible and Uninterruptible water supplies, for example, may require additional regulatory definition.

Beyond that particular issue, enforcement of the Proposed Implementation Rules does not appear to be adequately captured by the programmatic allocations for enforcement and compliance under Section 5.2 of the Authority's Strategic Plan. It is not unreasonable to assume that the Authority will experience additional regulatory burdens in order to be able to sort out the additional requirements for permit holders on a timely basis.

2.4 INTERGOVERNMENTAL ISSUES

There are two basic areas of concern in the context of intergovernmental issues. The first is the potential for reducing the cost-effectiveness of large-scale municipal water storage projects by linking Interruptible and Uninterruptible water rights in contrast to the assumptions made in the December 2003 Rules Assessment (see **Section 3.3.2**). The second and related concern is the apparent difficulty agricultural users will encounter when they attempt to sell surplus water to public entities, given the linkage of Interruptible and Uninterruptible Rights.

Given the water use implications of filing a quarterly withdrawal schedule with combined Interruptible/Uninterruptible withdrawals, there will be significant pressure on permittees to second-guess the proposed system. Irrigation users will, for example, try to project adequate flows for irrigation cycles and arbitrage the balance for sale to institutional entities. That potential transfer will be made more difficult by the linkage of the two allocations. See the additional analysis in **Section 3.0**.

3.0 IMPACTS ON THE REGULATED COMMUNITY

3.1 THE REGULATED COMMUNITY

Regular permitted groundwater users are divided into three categories: irrigation, municipal, and industrial water users. The irrigation category includes primarily farms, ranches, and cattle operations, as well as city "water farm" permits. Many permit holders are small corporations or trusts. Among the groundwater users with industrial permits are the following: concrete and materials companies, fire departments, golf clubs, nurseries, quarries, educational facilities and school districts, medical centers, stockyards, cities, country clubs, and cultural centers (a zoo, museum, and water park), nurseries and feed yards. Municipal permit holders include cities of all sizes as well as other entities such as water supply corporations. Under proportional adjustment, all permits have been adjusted and some have been granted Interruptible Rights. The Proposed Implementation Rules add provisions that are necessary to implement, manage, track and monitor the transfer and withdrawal of Uninterruptible and Interruptible Rights.

The Final Rules assessed in December 2003 did not explicitly state whether or not Interruptible and Uninterruptible Rights could be severed and utilized or transferred separately. The December 2003 Rules Assessment assumed the rights could be utilized or transferred separately in order to estimate a maximum potential market value for Interruptible Rights. The conclusions drawn herein are intended to clarify how impacts would differ from those stated in the December 2003 Rules Assessment subsequent to EAA's clarifications and articulations in the Proposed Implementation Rules (rather than as a result of any policy change by EAA). Impacts on the regulated community of the Proposed Implementation Rules would include: (1) the prohibition of the separate lease or sale of Interruptible Rights, as the Proposed Implementation Rules would require that all transfers of rights must be in a fixed proportion of Uninterruptible and Interruptible Rights; (2) the loss of the ability to exclusively withdraw Interruptible Rights in the early part of a year in which the Aquifer is above the index well trigger levels; and (3) as a result of the reduced utility and flexibility in the use of Interruptible Rights implied by (1) and (2) above, the potential value of these rights to the regulated community would likely be less than that estimated in the December 2003 Rules Assessment. These Proposed Implementation Rules would have a particularly negative impact on the cost of Aquifer storage and recovery (ASR) projects by greatly limiting the ability of ASR sponsors to buy or lease relatively less expensive Interruptible Rights separately from more expensive Uninterruptible Rights.

3.2 METHODS AND APPROACH

The impacts on the regulated community of the Proposed Implementation Rules establishing the Interruptible Right were assessed in the Regulatory Assessment (or the December 2003 Final Rules (EAA, 2003—hereafter December 2003 Rules Assessment). The Proposed Implementation Rules for the junior/senior implementation rules (May, 2004—hereafter Proposed Implementation Rules) to be assessed here are additional rule changes required to implement the December 2003 Final Rules establishing Uninterruptible and Interruptible Rights. The December 2003 Rules Assessment necessarily made certain assumptions with regard to their implementation in order to characterize the expected impacts to the regulated community.

Proposed Implementation Rules were reviewed with respect to the December 2003 Rules Assessment. Specific provisions of the Proposed Implementation Rules that did not conform to assumptions made in the December 2003 Rules Assessment were identified. These provisions were discussed in a scoping meeting with EAA staff and their likely effect on the conclusions of the Proposed Implementation Rules Assessment have been evaluated herein. There were no changes in policy by EAA between the Final Rules and the proposed Implementation Rules, only clarifications.

Hydrological data from the Authority were examined with respect to the frequency of Aquifer levels above the index well trigger levels established in the December 2003 Final Rules as adopted for Uninterruptible and Interruptible Right availability for withdrawal through December 31, 2007 (San Antonio Pool – Index Well J-17 above 665 msl, Uvalde Pool – Index Well J-27 above 865 msl). Examination of the hydrological data was used to help assess the potential impact of the Proposed Implementation Rules on the regulated community. Additionally, the economic analysis of the Interruptible Right presented in the Chapter 711 Final Rules (Section 3.4.1) was revisited in this study with regard to how the changed implementation procedures set out in the Proposed Implementation Rules would alter conclusions reached in the earlier assessment.

3.3 IMPACTS ON MUNICIPAL AND INDUSTRIAL USERS

This analysis of Interruptible Rights and Uninterruptible Rights under proportional adjustment was included in the December 2003 Assessment. According to the Interim Order provisionally implementing a Phase-2 Proportional Adjustment for Calendar Year 2004 and amending initial regular permits, the total proportional adjustment was 10.45 percent—the same as was analyzed for the December 2003 Rules Assessment. Modifications may have taken place

since the data were provided in November, but they are not expected to have an effect on the proportional relationship of municipal, industrial, and irrigation permit amounts described below.

According to initial regular permit data provided by the Authority in November 2003, there were 323 municipal initial regular permits and 188 industrial initial regular permits to take effect on January 1, 2004. Municipal initial regular permits account for 28.8 percent of the total initial regular permits issued and industrial initial regular permits for 16.7 percent. Irrigation initial regular permits will constitute 54.5 percent of the total. After proportional adjustments are made, the estimated Uninterruptible Rights withdrawals for 2004 will be distributed as follows:

Municipal initial regular permits: 245,792 acre-feet (54.6 percent)
Industrial initial regular permits: 29,345 acre-feet (6.5 percent)
Irrigation initial regular permits: 174,863 acre-feet (38.9 percent)

Interruptible Rights available in 2004 are expected to total 43,713 acre-feet. Note that this amount is less than the actual difference between permit applications and the 450,000 acre-foot cap (52,517 acre-foot) because some permit holders did not drop below their guaranteed minimums to be eligible for Interruptible Rights. Irrigation water use is the primary beneficiary with regard to the availability of Interruptible water supply: 94 percent of the *reduced* irrigation water (the difference between the original amount and the PA-2 amount) is available to irrigation IRP holders as Interruptible Rights. In contrast, the amount of Interruptible water available to municipal IRP holders is relatively low: 9.6 percent of the reduced water is available to municipalities as Interruptible Rights, and 30.8 percent of the reduced industrial water is available under industrial initial regular permits as Interruptible Rights.

After the 10.45 percent PA-2 adjustments, a total of 323 initial regular permits for municipal uses were issued with 260 (80.5 percent) of those permits eligible to receive Interruptible Rights as the PA-2 adjustment was lower than the statutory minimum. Sixty-three initial regular permits (19.5 percent) were not eligible for Interruptible Rights either due to no statutory minimum or the PA-2 adjustment did not result in a permit amount that was lower than the statutory minimum. A total of 188 industrial initial regular permits were issued (including 174 industrial and 14 industrial agricultural) for 2004. Of these, 93 (49.5 percent) were not eligible for Interruptible Rights and 95 (50.5 percent) were eligible. Primarily, Interruptible Rights would not be available if the PA-2 amount was higher than the statutory minimum. These data pertain only to 2004 pumping initial regular permits. It is anticipated that an additional Proportional Adjustment may be required after all outstanding permits in Interim Authorization Status are finalized and the total amount permitted further exceeds 450,000 acre-feet per year.

The following section describes historical hydrological data to estimate the availability of Interruptible Rights. A specific discussion of impacts of the Proposed Implementation Rules on the San Antonio Water System (SAWS) Aquifer Storage and Recovery (ASR) project follows. The SAWS ASR project is the largest municipal and industrial project to be affected by the Proposed Implementation Rules.

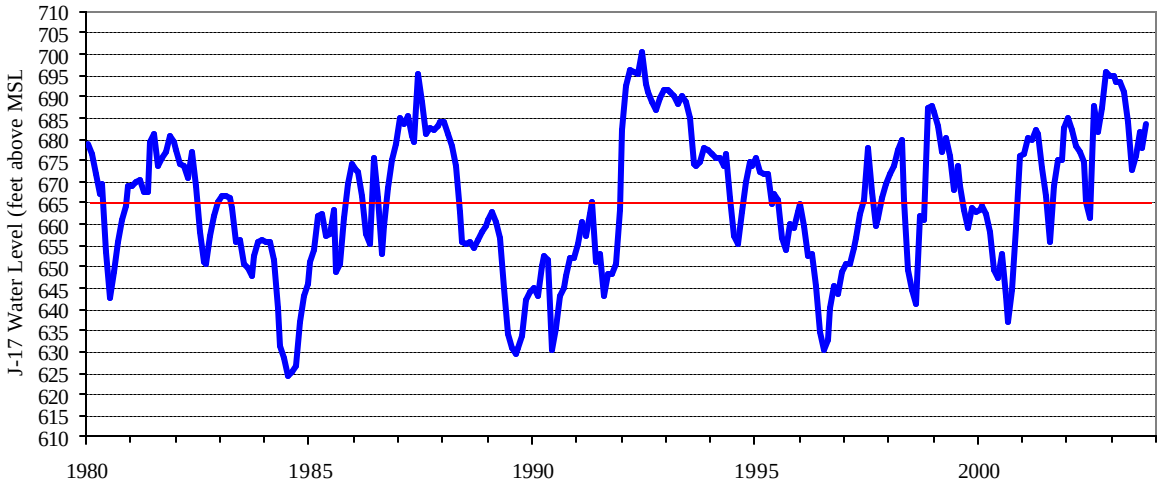
3.3.1 Hydrological Analysis with Respect to the Potential Availability for Withdrawal of Interruptible Rights

In the December 2003 Rules Assessment, various scenarios were investigated to determine the maximum utility of Interruptible Rights assuming they were separable. The most likely scenario was a wet year followed by a dry year. Since the Proposed Implementation Rules bind Interruptible and Uninterruptible Rights together, the current assessment simply investigates two possible scenarios: when all Interruptible Rights could be exercised and when no Interruptible Rights could be exercised.

Hydrological data for the period 1980-2003 from the Authority's 2003 Hydrological Report (EAA, 2003b) were examined to determine the historical frequency of the availability for withdrawal of all Interruptible Rights and no Interruptible Rights. These data show that for the twenty-four year period there were seven years (1984, 1985, 1989, 1990, 1991, 1996, and 2000) during which the Aquifer level at Index Well J-17 was below the trigger level of 665 feet above msl for the entire year, such that no Interruptible Rights would have been available for withdrawal from the San Antonio pool in those years.

There were five years (1981, 1987, 1992, 1993, and 2003) during which the J-17 Index Well level was above 665 msl for the entire year, implying that users could have withdrawn their entire amount of Interruptible Rights assuming that such withdrawals would not have reduced Aquifer levels below the 665 feet msl trigger level at J-17. These data are presented in **Figure 3.3-1**. It should be noted, however, that during this historical period, actual *permitted* withdrawals ranged between 293,000 acre-feet in 1992 and 504,000 acre-feet in 1989. Although the impact of the withdrawal of Interruptible Rights on Aquifer levels has not been modeled, it would not be unreasonable to assume that in the future, if all these rights are withdrawn when they are available (assuming the ability to use or store the water), future Aquifer levels would be lower than the historical data portray, reducing the amount of time during which Interruptible Rights would be available for withdrawal.

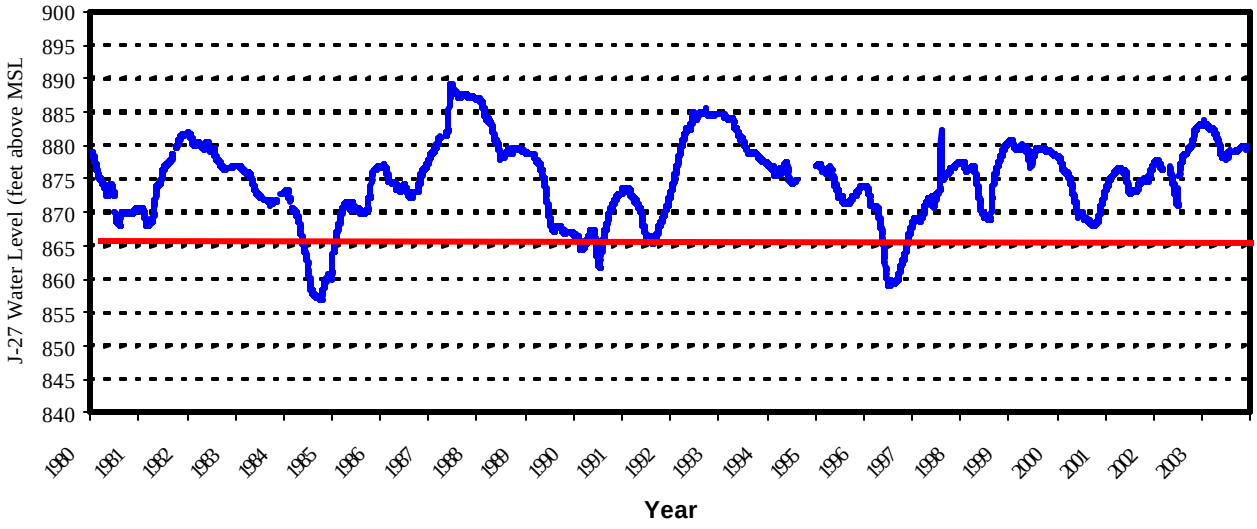
Figure 3.3-1 J-17 Water Levels for 1980-2003



Source: EAA Hydrological Report, 2003

Interruptible Rights would be available for withdrawal more frequently in the Uvalde Pool. According to 1980-2003 data for Index Well J-27, Interruptible Rights would have been available for withdrawal year-round in all years except 1985, 1991, and 1997. In those three years, some Interruptible Rights could have been withdrawn (see **Figure 3.3-2**). For twelve years in the observed period at J-17 and three years at J-27, some portion of the Interruptible Rights would have been available. In those years, the fixed proportionality for withdrawal of Uninterruptible and Interruptible Rights would have reduced the possibility of withdrawing all allocated water under Interruptible Rights in that portion of the year when Aquifer levels were above the trigger levels of 665 msl at J-17 and 865 msl at J-27. The Proposed Implementation Rules, therefore, would have the effect of reducing total annual withdrawals below levels potentially available if Interruptible Rights could have been withdrawn separately, and theoretically in full as assumed in the December 2003 Rules Assessment.

Figure 3.3-2 J-27 Water Levels for 1980-2003



Source: EAA Hydrological Report 2003

Three caveats with respect to this conclusion must be noted: (1) withdrawing all allocated water under Interruptible Rights would be restricted by available productive uses or storage capacity; (2) total annual demand might be less than the allowable withdrawals; and (3) this is not a modeling result, therefore, in practice the withdrawal of Interruptible Rights would reduce the Aquifer levels below those seen in this data, reducing the duration of windows of availability (Aquifer levels above trigger levels). As a result of these complicating factors, it is difficult to draw conclusions with respect to impacts of the Proposed Implementation Rules on municipal and industrial users except to observe that the fixed proportionality requirement would make it impossible for users to maximize total withdrawals by crowding withdrawals of Interruptible Rights into short windows of availability. The flexibility that users enjoy under the Chapter 711 Final Rules (which do not require withdrawals or transfers at fixed proportions) would be lost under the Proposed Implementation Rules and could result in the withdrawal of less water overall. This would be considered a negative impact by permit holders (such as SAWS) and a positive impact for the Aquifer and Aquifer-dependent species (see **Chapter 4.0** that follows).

An additional report prepared in 2000 addressed the same issue using modeling. The availability of water under term permits was considered in the *Report of the Effectiveness of the Edwards Aquifer Authority* by the South Central Texas Water Advisory Committee (September 2000). GWSIM-IV modeling was used to determine when term permits could be utilized at different cap levels for Aquifer pumping. The report discusses assumptions and qualifications of

the modeling and draws several conclusions. Utilizing historical pumping data from 1934 to 1989, and assuming Demand Management/Critical Period reductions would take effect when triggered, for a 450,000 acre-foot withdrawal cap, Bexar, Comal, and Hays Counties would be able to utilize term permits 2.5 percent of the time. For the same assumptions and withdrawal cap, Medina and Atascosa counties would be able to utilize term permits 36.8 percent of the time. Uvalde County would be able to utilize term permits 14.3 percent of the time. Because Interruptible Rights are effectively term permits, this study supports the conclusion that Interruptible Rights would be useful at times of high water levels, but that other regulatory controls would ensure that term permits would have only a negligible effect on springflows.

3.3.2 Impact of the Proposed Implementation Rules on Aquifer Storage and Recovery (ASR) Projects

The San Antonio Water System's (SAWS) recently completed Aquifer storage and recovery project (ASR) allows the withdrawal and treatment of Edwards groundwater for transmission and storage in the Carrizo-Wilcox Aquifer to be later withdrawn and distributed during low Aquifer conditions. This project could be impacted by the Proposed Implementation Rules.

Prior to the completion of the ASR project in 2004, there was no capacity to store water in the San Antonio region. However, the ASR project will allow up to 22,000 acre-feet of water to be stored for later use. This project will involve the withdrawal of additional Edwards groundwater beyond that which is needed to meet current demands. During periods when index wells are above trigger levels, Interruptible Rights could be used to withdraw Edwards groundwater for storage in the ASR system. The ASR project would, as a consequence, allow reduced Edwards Aquifer use (during, for instance, DM/CPM stages) in drought periods as stored water would be substituted for Edwards withdrawals.

SAWS received 20,082.97 acre-feet of Interruptible Rights in the proportional adjustment process for 2004. Their Uninterruptible Rights total 190,938.74 acre-feet for 2004 (Pers. Comm., Walthour 2004). (Note that SAWS actually contracted for 208,000 acre-feet for 2004.) These rights include both permanent rights and leases. Acquisition of additional Interruptible Rights would provide SAWS with greater flexibility in operation of the ASR project. However, the Proposed Implementation Rules would inhibit the utility's ability to obtain these rights in a cost-effective manner by virtue of the fixed proportional requirement for all transfers (lease or sale) in the Proposed Implementation Rule. SAWS would be required to purchase both Uninterruptible and Interruptible Rights rather than Interruptible Rights exclusively. The December 2003 Rules Assessment concluded that Interruptible Rights would

be of substantially less market value than Uninterruptible Rights. The lease or purchase of these relatively less expensive rights would have provided SAWS with a cost-effective way to supply water to the ASR project. Under the Proposed Implementation Rules, SAWS can no longer gain the economic advantage of purchasing Interruptible Rights at a lower cost and pump them to a maximum degree for storage at the beginning of the year (when Aquifer levels would be higher). Interruptible and Uninterruptible Rights have to be pumped in fixed proportion. Nonetheless, SAWS is expected to continue developing the ASR project. The ASR project still benefits the Aquifer, spring ecosystems, and downstream users overall because it is a source of supply that will reduce demand on the Edwards Aquifer during dryer periods, regardless of the source of water used to fill it or the price of that water. In addition, since SAWS pre-pays for their water use, they could utilize any unused Uninterruptible Rights for filling the ASR project in the fourth quarter, or purchase combined rights not needed by irrigators at a potentially favorable rate.

3.4 IMPACTS ON IRRIGATORS

After the 10.45 percent PA-2 adjustments, 595 of 612 irrigation initial regular permits (97.2 percent) would be eligible for Interruptible Rights to bring them up to their statutory minimums. Seventeen irrigation initial regular permits (2.8 percent) were not eligible for an Interruptible Right and, in all but three of these cases, the PA-2 amount exceeded the statutory minimum amount. Irrigation initial regular permits were granted for 174,863 acre-feet (or 38.9 percent). Irrigation water permitted was reduced by 20,407 acre-feet but 94 percent (19,184 acre-feet) of that reduction would be available as Interruptible Rights in contrast to the low percentage available for municipal permit holders. Interruptible Rights total 43,713 acre-feet which is less than the 52,517 acre-feet difference between the permitted withdrawals and the withdrawal cap (because not all permittees received Interruptible Rights).

The December 2003 Rules Assessment discussed impacts on irrigators. The discussion described the difficulty in predicting when Interruptible Rights could be utilized. They would be most available to irrigators during wet periods, when they would be less needed due to precipitation. That assessment envisioned an effect on buyers if irrigators were to plan on utilizing Interruptible Rights for their crop production, and also additional speculation on the part of irrigators to maximize the utility of Interruptible Rights such as providing increased produce for farmers markets. The Proposed Implementation Rules impose a fair amount of predictability and accountability for utilizing Interruptible Rights because they are always part of a combined right and can be more easily tracked. The adverse effects of Interruptible Rights use would be minimal if in fact the irrigator did not plan to use Interruptible Rights at all, but scheduled his/her quarterly withdrawals conservatively (wholly based on Uninterruptible Rights with extra water being available when Interruptible Rights can be used). When Interruptible Rights are allowed,

additional withdrawals could take place and remaining withdrawals could be carried forward as long as no Notice of Cessation is in effect. See **Section 3.5** for additional discussion of constraints on transfers and impacts to irrigators.

The assessment of Aquifer management fees for irrigators is based on a $2 per acre-foot cap. If the proportionately reduced rights would have had to be purchased using Aquifer management fees by the Authority (prior to the Chapter 711 Final Rules), municipal and industrial users who do not have a fee cap would have been required to pay a disproportionate amount of the so-called buydown to 450,000 acre-feet/annum cap. Prior to 2003, the Authority estimated that total Initial Regular Permits would equal 557,000 acre-feet in 2003. Consequently, the Authority projected the estimated costs to reduce water rights to 450,000 acre-feet using three price estimates: $600/acre-foot, $1,200/acre-foot and $2,000/acre-foot. **Table 3.4-1** represents the costs (an extra fee would be added for manufacturing and industrial users because irrigation fees are frozen at $2/acre-foot) of reducing water rights to 450,000 acre-feet.

Table 3.4-1 Estimated Cost of Retiring Water Rights

Estimated Cost per Acre-foot	$1,200	$2,000
Rights to be Retired	107,000	107,000
Purchase Cost	$128,400,000	$214,000,000
Annual Cost (30-yr debt)	$8,353,000	$13,810,000
Total 30-yr Payment	$250,590,000	$417,600,000
Aquifer Management Fee (debt service) per acre-foot of permitted rights	$26.00	$43.00

Source: EAA January 28, 2003 Legislative Briefing Packet.

According to EAA's estimates, municipal and industrial permittees would pay $26 to $43 per acre-foot just for a buydown (for SAWS in 2004, this would cost $5.4 million to $8.9 million based on a contract for 208,000 acre-feet. Under the Interruptible Rights scenario, irrigators lose that relative advantage. Under the current Proposed Implementation Rules, fee assessment would not be used for buydown, rather Interruptible Rights compensate for withdrawal reductions. According to EAA, irrigators are assessed fees for their actual reported water use, not their scheduled use. Only when withdrawals are gauged over time can it be determined how and whether Interruptible Rights have had an adverse affect on irrigator income and productivity, or whether they were able to be used by irrigators in a beneficial way at all.

In addition, irrigators as a whole are less capable of dealing with additional complexities and reporting demands (small farming operations have fewer resources to interpret and implement rules, and adhere to increased reporting requirements etc.). See **Section 3.6** for further discussion of monitoring and reporting requirements.

3.5 ECONOMIC IMPACTS TO THE REGULATED COMMUNITY

The December 2003 Rules Assessment utilized data from the Authority's Programmatic Assessment and from published sales of water rights to estimate the value of Interruptible Rights compared to Uninterruptible Rights. Because Interruptible Rights can only be withdrawn when index wells exceed trigger levels, and are only valid for the duration of the December 2003 Final Rules (until December 31, 2007), those rights were determined to have less value on the market than Uninterruptible Rights. Plus, Interruptible Rights would primarily be available during wet seasons when the need for Aquifer water was lower.

The economic impacts of the December 2003 Final Rules were summarized in the December 2003 Rules Assessment as follows:

- All users would avoid the substantial costs of compensation for reduced rights required under the current rules. Municipal and industrial users would benefit most as, under the previous rule provisions of the Act and Authority rules (superceded by the December 2003 Final Rules), they would bear a disproportionate burden of these costs.
- Interruptible Rights are too uncertain to be relied on to meet current demand. Their value is probably restricted to those users who can take advantage of an uncertain supply, therefore, a user with available storage.
- Interruptible Rights will be of greatest value to municipal and industrial users who develop costly non-Edwards water supplies. For these users, using existing Edwards wells when Interruptible Rights are available is likely to cost less than the non-Edwards supply.
- Because of their unreliability, Interruptible Rights are likely to be of reduced value to other users, including most municipal and industrial users who continue to use the Edwards as their sole source of supply.

Nonetheless, a market lease price was estimated at possibly $35 - $40 per acre-foot for a 5-year lease term. This is much lower than the $600 per acre-foot that was offered to the public by the Authority at one time (with little response indicating the value of Uninterruptible Rights was much higher – see previous discussion in **Section 3.4**). Both factors were discussed in the December 2003 Rules Assessment. However, it was noted in that assessment that there were some potential customers for Interruptible Rights, namely the SAWS Aquifer storage and recovery project. Such a program would benefit from lower cost Interruptible Rights because if capacity were available, SAWS could utilize possibly all of its Interruptible Rights then purchase

more on the market to store water when it was less expensive, and then be able to release water under dryer conditions. In the current assessment, Interruptible and Uninterruptible Rights are inseverably bound and transfers require that fixed proportionality remain tied to any transferred water. So, under the Proposed Implementation Rules, SAWS could not buy Interruptible Rights only—but it still could buy combined Uninterruptible/Interruptible Rights to fill the ASR project. With respect to the estimated cost of Interruptible Rights, the assumptions made in the December 2003 Rules Assessment no longer hold true. No bound Interruptible/Uninterruptible Rights have been bought or sold, so the value on the market is indeterminate. They may be more valuable than Interruptible Rights alone and less valuable than Uninterruptible Rights. The only way to gather firm cost data for combined rights will be to poll permittees and collect actual data on transfers of combined rights, then compare them to previous cost estimates for Uninterruptible Rights.

3.6 IMPACTS OF DEFINITIONS, MONITORING, REPORTING, AND ENFORCEMENT REQUIREMENTS ON THE REGULATED COMMUNITY

Several sections of the Proposed Implementation Rules deal specifically with concerns raised in response to the December 2003 Final Rules and the lack of specificity about record keeping for Interruptible Rights. These issues are addressed in the Proposed Implementation Rules in several sections.

Some key points are as follows. Combined Interruptible/Uninterruptible Rights lend more predictability to withdrawal scheduling and reporting. Irrigators pay fees based on use at the end of the year, which enables them to rectify discrepancies between scheduled amounts and actual pumping. If errors occur in scheduling, EAA "automatically" applies Interruptible/Uninterruptible Rights proportionately as laid out in the Integrated Resources Program (IRP). Proportionality applies to all withdrawals, but assessment (Subchapter D Section 709.19), billings and collections (709.21), and user contracts (709.25) are handled without distinction between Interruptible and Uninterruptible Rights. There are several housekeeping updates where Interruptible Withdrawals needed to be added to sections referencing Demand Management and Critical Period Management Rules (i.e. Subchapter F Section 711.134 Standard Conditions).

Initial and additional regular permits can be interrupted pursuant to 711.176(b)(6) and 715 D. Term permits (Subchapter E Section 711.102) have established index well trigger levels according to the rule revisions. Effectively, Interruptible Rights are term permits packaged as Interruptible Rights but they are only available to specific permit holders as a way to honor minimums, and usable only under specific conditions (high Aquifer levels). Term permits per se

cannot be authorized until after January 1, 2008, so no additional term permits will be issued during the effective period of the Proposed Implementation Rules (through December 31, 2007). As a result, no unanticipated additional Aquifer impacts from term permits are expected while the Authority is utilizing the new withdrawal data to determine the effect of Interruptible Rights on water levels.

Subchapter G Section 711.164 (a)(1) and (2) add the clarification that wells completed in the Edwards are subject to the Demand Management and Critical Period Management (DM/CPM) rules, and shall also be subject to Interruptible Rights well trigger levels since the DM/CPM rules are located along with the Interruptible Rights rules in Chapter 715 Subchapter D. The definition of Proportional Adjustment has been clarified to state that Phase-1 and Phase-2 Proportional Adjustment Factors must be applied uniformly.

Section 711.176(b)(6)(A) and (B) reiterate the index well trigger levels applicable to J-17 in the San Antonio Pool and J-27 in the Uvalde Pool and tie those to Chapter 715 Subchapter D where Interruptible Rights and DM/CPM rules are now located together. These provisions do not impose additional responsibilities or burdens to permit holders, but refer to other, more detailed sections that include additional monitoring and reporting responsibilities. The section on transfers, Subchapter L, discusses conversion of base irrigation groundwater in Section 711.340. Any conversions before or after the Proposed Implementation Rules will result in proportional Interruptible and Uninterruptible Rights as spelled out in the initial regular permit. Transfers of initial regular permits and withdrawals of water pursuant to transfers are subject to the same proportionality as stated in the permit. Section 711.366(c) clearly states that "the Interruptible and Uninterruptible groundwater withdrawal amounts in an initial regular permit may not be transferred separately or in a proportion different from the proportion of Interruptible and Uninterruptible amounts authorized in the initial regular permit pursuant to Section 711.176(b)(6)." In other words, Interruptible Rights cannot be leased or sold separately as was assumed in the December 2003 Rules Assessment. Irrigators would be most adversely affected by this provision as they would be the users most likely to have excess water to transfer. As discussed in **Section 3.5**, the market for combined Interruptible Rights and Uninterruptible Rights has not yet developed so their value is indeterminable at this time.

The reporting requirements under Subchapter M, Section 711.414 specify that reporting forms should show withdrawals for the entire year and month-to-month broken down by Uninterruptible and Interruptible Rights withdrawals. These same breakdowns should be reflected on the Quarterly Scheduled Withdrawal Amount forms, for those permit holders with

Interruptible Rights. This is not a new requirement to submit a schedule, but for additional information to be portrayed on that schedule.

Subchapter D, Section 715.200 Purpose clearly states that the Authority is charged with balancing the Act's guarantee of historical minimums and irrigator minimums, while working to meet the withdrawal cap of 450,000 acre-feet above msl. The required reporting on quarterly withdrawals applies to all initial regular permit holders year-round. This does increase the "paperwork" requirements for permit holders, with a greater negative effect on smaller businesses and farms. Section 715.204(a)(4) states that Interruptible Rights can only be withdrawn if a Notice of Cessation is not in effect. The Notice of Cessation is explained later in the rules.

When DM/CPM is in effect, the Uninterruptible Rights that can be withdrawn must be adjusted downward by the interruption coefficient depending on what DM/CPM stage is in effect. Section 715.204(d) lays out specific requirements for scheduling the withdrawal of Interruptible and Uninterruptible Rights and that withdrawals must not exceed that schedule. Transferees will pump their newly acquired rights proportionately. Section 715.204(e) explains that the Quarterly Scheduled Withdrawal Amounts submitted to the Authority will be automatically allocated between Interruptible and Uninterruptible Rights according to the proportion in the permit. These schedules may only be amended in certain circumstances (at the time of a transfer). Section 715.208 specifies that Interruptible Rights that were not utilized could be carried forward into the next quarter if no Notice of Cessation is in place. (Note: A separate rulemaking is underway to clarify the limitations on carryforwards with respect to transfers.)

Section 715.211 regarding cessation and resumption of Interruptible Withdrawal Rights in the San Antonio pool lays out a notification system to convey to permit holders if and when Interruptible Rights can be pumped. There is a minimum, week-long delay between announcements to protect permit holders against the Authority issuing a Notice of Cessation and immediately having to retract it. The additional notification requirements will have the greatest effect on the Authority, who will have to receive, monitor, and process these reports, but they will also increase paperwork to permittees preparing these reports. The same provisions apply to permittees using the Uvalde Pool (Section 715.2111). Section 715.2112 discusses reporting requirements for times when the Notice of Cessation takes place in the middle of the month, requiring that withdrawals be conducted on a prorated system (Subsection C) for the remainder of the month.

Section 715.218 lays out the DM/CPM schedule basically revised with the exclusion of the 500,000 acre-foot cap option. Various Critical Period stages require the reduction of the total pumping amounts, through imposition of interruption coefficients, i.e. the permit amount must be reduced by a factor of 0.23 for all permittees in Stage IV, for example. Additional requirements for prorating withdrawals of Interruptible Rights when they are in place for less than a month are also part of these rule provisions. If the prorating requirement becomes overly complicated, it may serve as a deterrent for fully completing the withdrawal monitoring forms. The Authority may need to provide assistance to permit holders for some of this reporting work.

The next chapter examines impacts to the Aquifer and Aquifer-related resources.

4.0 IMPACTS ON THE AQUIFER AND AQUIFER-RELATED RESOURCES

Chapter 4.0 of the Rules Assessment for the December 2003 Final Rules (Edwards Aquifer Authority, 2003a) contains detailed information on potential impacts to the Aquifer and Aquifer-related resources. That information will be summarized here, with an emphasis on updating statements that have changed based on the current Proposed Implementation Rules.

4.1 DRAFT PROGRAMMATIC ASSESSMENT EXAMINATION OF INTERRUPTIBLE RIGHTS

4.1.1 GWSIM Modeling

The Draft Programmatic Assessment developed a set of hypothetical scenarios including one for Interruptible Rights withdrawals. Scenario L in the Draft Programmatic Assessment's Appendix GWSIM was based on a set of assumptions including certain municipal, industrial, and irrigation pumping scenarios. The model results indicate that with a withdrawal cap of 450,000 acre-feet per year in place and no Interruptible pumping, Comal Springs would fall below 200 cfs about 34 percent of the time. Historic water levels would have allowed use of Interruptible Rights at least 40 percent of the time, but these data may overstate long-term future conditions.

4.1.1.1 Effects on Water Levels

As stated in the December 2003 Rules Assessment, the use of Interruptible Rights would lower Aquifer levels, so that the well-specific water levels used to turn Interruptible Rights off would be reached more often. Therefore, Interruptible Rights would be useful much less than 34 percent of the time. The simulation results predict that Interruptible Rights would actually be useable approximately 25 percent of the time. If Interruptible Rights total 67,841 acre-feet per year and are used 25 percent of the time, the Interruptible withdrawals would average 16,960 acre-feet per year.

Historical data suggest this prediction may be overestimated. Over the 48-year period of record 1955-2002, total Aquifer pumping exceeded the assumed model pumpage of 517,481 acre-feet per year in only four years (EAA 2003b). In each of these years, irrigation pumping was substantially below the assumed model pumpage of 219,481 acre-feet/year. Highest estimated withdrawal for irrigation peaked in 1985 at 203,100 acre-feet. See also **Chapter 3.0, Section 3.3.1** for availability of Interruptible Rights in the San Antonio and Uvalde Pools based on recent historical well level data for 1980-2003. The Proposed Implementation Rules requiring that Interruptible Rights and Uninterruptible Rights be bound would moderate

withdrawals when compared to the December 2003 Rules Assessment assumption of separate Interruptible Rights.

4.1.1.2 Effects on Springflows

The model outputs of predicted springflows as contained in the Programmatic Assessment's Appendix GWSIM tend to under-predict springflow effects, and have been superceded by updated modeling results documented in the Edwards Aquifer Authority Draft HCP/EIS dated July 2004. However, all of the modeling analyses indicate the following:

- Most of the impact from Interruptible Rights occurs at high springflows. This is because Interruptible Rights can only be used when the Aquifer water levels are high, which is also a time of high springflows.
- The effects of the Interruptible withdrawals quickly dissipate once the Interruptible Rights are shut down. This is because of the unusual water-balance features of the Edwards Aquifer, in which reductions in pumping are substantially offset by corresponding changes in springflow.
- For a repeat of historical recharge conditions, the effect of Interruptible pumping compared to a steady 450,000 acre-feet per year of pumping is to reduce discharge from Comal Springs. As a result, available downstream water supplies in the Comal and Guadalupe Rivers would be reduced.
- The effect at San Marcos Springs would be negligible.

The Proposed Implementation Rules prohibit separate pumping or transfer of Interruptible Rights, so the effect on springflows would be positive (relatively lower pumping and higher springflows) compared to the assumptions in the December 2003 Rules Assessment.

4.1.1.3 Effects on Frequency of Demand Management/Critical Period Reductions

According to the December 2003 Rules Assessment, because exercise of Interruptible Rights would potentially lower water levels in the Aquifer, the thresholds for implementing critical period reductions would be reached more frequently. The Proposed Implementation Rules moderate the impacts of Interruptible Rights pumping by binding Uninterruptible Rights with Interruptible Rights, so pumping of these combined rights would increase the frequency of reaching critical period reductions to a lesser degree. GWSIM outputs do not reliably predict actual water levels, and therefore the model water-level outputs cannot be used to predict this effect.

The model indicates that at the start of a critical period, water levels would be dropping faster if there had been Interruptible Rights pumping in the past than if there had not been such pumping. However, the model does not reflect the inseparable binding of Uninterruptible and Interruptible Rights. The December 2003 Rules Assessment posited that DM/CPM rules may need to be updated to require greater pumping curtailments during the early stages of a drought, and asserted that such pumping restrictions would quickly offset the benefits potentially obtained from using Interruptible Rights to their maximum benefit. Under the Proposed Implementation Rules, Interruptible Rights can still be used but would be less likely to lead to earlier imposition of DM/CPM rules. The effect of pumping Interruptible Rights as part of a combined right would dissipate quickly once those rights are curtailed, given the unusual water-balance features of the Edwards Aquifer. Therefore, the effect of pumping Interruptible Rights as part of a combined right may only hasten the imposition of DM/CPM rules by a matter of a few days (and withdrawals of separate Interruptible Rights may have hastened DM/CPM rule imposition by more time than that).

4.1.1.4 SCTWAC Report

An additional report prepared in 2000 addressed the same issue using modeling. The availability of water under term permits was considered in the *Report of the Effectiveness of the Edwards Aquifer Authority* by the South Central Texas Water Advisory Committee (September 2000). GWSIM-IV modeling was used to determine when term permits could be utilized at different cap levels for Aquifer pumping. The report discusses assumptions and qualifications of the modeling and draws several conclusions. Utilizing historical pumping data from 1934 to 1989, and assuming Demand Management/Critical Period reductions would take effect when triggered, for a 450,000 acre-foot withdrawal cap, Bexar, Comal, and Hays Counties would be able to utilize term permits 2.5 percent of the time. For the same assumptions and withdrawal cap, Medina and Atascosa counties would be able to utilize term permits 36.8 percent of the time. Uvalde County would be able to utilize term permits 14.3 percent of the time. Because Interruptible Rights are effectively term permits, this study supports the conclusion that Interruptible Rights would be useful at times of high water levels, but that other regulatory controls would ensure that term permits would have only a negligible effect on springflows.

4.2 IMPACTS OF PROPOSED INTERRUPTIBLE RIGHTS ON THE AQUIFER THROUGH 2007

4.2.1 Aquifer Demand

In this assessment, total water demand on the Aquifer for human needs is computed as the sum of municipal, industrial, irrigation, domestic and livestock water demands. Although water demand on the Edwards Aquifer for these purposes is expected to increase substantially over the 2000 to 2060 period (Texas Water Development Board, 2003), demand growth over the next four years (2004-2007) is not expected to exceed 448,000 acre-feet per year except in the alternative demand scenario – called the "wet-dry scenario" – in Section 3.3.5.5 of the December 2003 Rules Assessment. With the new Proposed Implementation Rules, this alternative demand scenario is highly unlikely given that Interruptible Rights are not severable and cannot all be pumped at the beginning of the year. Water demand for sustaining spring ecosystems at San Marcos and Comal Springs, although not projected by the TWDB, is expected to remain constant. The Act establishes as a major function and goal the protection of the Aquifer-dependent species that are designated as threatened or endangered under state or federal law. The supporting of springflows through water conservation is an essential aspect of preserving the habitats of seven endangered and one threatened species living in the region's spring ecosystems.

For a given level of regional population, employment and irrigation, regional water demand on the Edwards Aquifer would be determined by future water use efficiencies, in terms of water used per capita, per employee (or per unit of output), and per acre of irrigated cropland. In the December 2003 Rules Assessment, it was stated that there is little evidence that creation of an Interruptible Right by the Proposed Implementation Rules would directly increase Aquifer demand during wet periods, except for the planned implementation of Aquifer storage and recovery (ASR). Under this Aquifer management strategy, during higher Aquifer levels (above 665 msl), water could be pumped from the Aquifer and stored for future use during dryer periods. The ASR project would have positive effects on springflow by reducing demand for Aquifer pumping during dryer periods because stored surplus water could be utilized. Under the previous assumption that Interruptible Rights could be pumped by SAWS first, and Interruptible Rights potentially could be transferred to SAWS' ASR project and pumped early in the year; there was an added incentive to fill the ASR project due to the cost-effectiveness of purchasing inexpensive Interruptible Rights. Under the Proposed Implementation Rules, this scenario could take place, but the relative advantage to SAWS of utilizing Interruptible Rights first, purchasing any needed Interruptible Rights at a cost savings, and reserving Uninterruptible Rights for later, is reduced. SAWS is still expected to store water from the ASR project and to supply water from it during dryer periods.

4.2.2 Water Demand for Spring Ecosystems and Species

According to the December 2003 Rules Assessment, as noted in the Authority's Draft Programmatic Assessment, the immediate, direct regional impacts of creating Interruptible Rights would include potentially reduced springflows during wet periods. However, withdrawals using Interruptible Rights would only occur during those periods when springflows are relatively high and above normal levels, thus limiting the likelihood of impacts on endangered species. The potential impact on springflows is further moderated under the Proposed Implementation Rules since Interruptible and Uninterruptible Rights would be pumped together—the opportunity to maximize pumping of Interruptible Rights early in the year would be reduced to the extent that a permittee wants to pace use of the Uninterruptible portion as needed over the course of the year. By binding Interruptible and Uninterruptible Rights together, the potential for springflow reduction is lower, thereby benefiting, to some degree, the protected species that rely on those springflows.

Eight species are listed as threatened or endangered that depend on water in or discharged from the southern portion of the Edwards Aquifer system, thereby invoking protection by the Federal Endangered Species Act (ESA). The seven endangered species of the Edwards Aquifer system are the Texas blind salamander (*Eurycea rathbuni*), fountain darter (*Etheostoma fonticola*), San Marcos gambusia (*Gambusia georgei*), Texas wild-rice (*Zizania texana*), Comal Springs riffle beetle (*Heterelmis comalensis*), Comal Springs dryopid beetle (*Stygoparnus comalensis*), and Peck's cave amphipod (*Stygobromus pecki*). The threatened species is the San Marcos salamander (*Eurycea nana*).

All species are aquatic and inhabit ecosystems dependent on the Edwards Aquifer. The Texas blind salamander is a subterranean species, occurring in the Aquifer around San Marcos Springs. The Comal Springs dryopid beetle and Peck's cave amphipod are known to occur in the Aquifer around Comal Springs. The fountain darter and Comal Springs riffle beetle occur in the spring-fed systems of both Comal and San Marcos Springs, while the San Marcos salamander and Texas wild-rice only occur in the spring-fed ecosystem of San Marcos Springs. The San Marcos gambusia is endemic to the San Marcos Springs ecosystem. It has not been observed since 1983 and may be extinct. Cagle's map turtle (*Graptemys caglei)*, a candidate for listing, is endemic to the Guadalupe River system of South Texas and is dependent on streamflow of the Guadalupe River. Flows of the Guadalupe River downstream of the confluence with the San Marcos River are partially dependent on the Edwards Aquifer, Comal Springs, and San Marcos Springs. A study completed by Dr. Killebrew of West Texas A&M indicated springflow did not appear to be a factor in their existence (Killebrew, 2002).

One of the primary threats to the listed species is the intermittent loss of habitat from reduced or no springflows resulting from reduced Aquifer recharge and regional pumping. The southern portion of the Edwards Aquifer serves more than 1.7 million people as their primary source of water, and current water use has increased to the extent that variable precipitation and associated recharge, coupled with regional pumping contributes to loss of springflow and habitat.

The Authority is preparing an application for an Incidental Take Permit and regional Habitat Conservation Plan (HCP) under §10(a)(1)(B) of the ESA. This take would be incidental to otherwise lawful activities that would occur as a result of water withdrawals within the jurisdiction of the Authority. In order to minimize and mitigate incidental take, the Authority is identifying a level of Aquifer withdrawal that would not reduce springflow below critical levels except during conditions of severe drought. This level of Aquifer withdrawal would be implemented incrementally, and then would not be exceeded during the proposed 50-year permit period. The withdrawal of water under Interruptible Rights pumped in combination with Uninterruptible Rights is not expected to detrimentally affect springflows during drought periods because withdrawal of Interruptible Rights would be prohibited when the Aquifer level falls below the index well trigger levels of 665 feet above msl at J-17 and 865 feet above msl at J-27.

Section 4.2.3 of the December 2003 Rules Assessment describes the potential impact of pumping Interruptible Rights on the Edwards Aquifer (in terms of Aquifer levels and springflows) and related biological resources, including the endangered and threatened species. The section includes summary descriptions of Aquifer dynamics, historical Aquifer and springflow levels, and a discussion of the potential impact of conservation measures. This information is incorporated by reference to the current December 2003 Rules Assessment because the Proposed Implementation Rules would not change the nature of the impacts, but may lessen the degree of impact on the Aquifer due to Interruptible Rights being bound to Uninterruptible Rights.

4.2.3 Impact of Interruptible Rights on the Aquifer

According to the December 2003 Rules Assessment, the use of Interruptible and Uninterruptible Rights would not require an excessively high water demand. When water levels are high enough, Interruptible Rights could be used to meet average or even below average demands. If water levels allow the use of Interruptible Rights at the beginning of a year, there will always be some demand to which these rights can be applied. An estimated 20 percent of the municipal and industrial demand occurs in the first quarter of the year, and if it is especially hot and dry, irrigators may also be pre-irrigating in preparation for planting in the spring. Based

on the assumption that Interruptible Rights could be pumped or transferred separately from Uninterruptible Rights, the December 2003 Rules Assessment contemplated a scenario for maximizing use of Interruptible Rights--fully utilizing those rights in the first quarter based on index well levels allowing pumping of all Interruptible Rights in the first quarter. It followed that the use of these rights would then allow the Uninterruptible portion of the permit to be applied over a shorter period of time.

However, according to the Proposed Implementation Rules, Interruptible and Uninterruptible Rights always have to be pumped concurrently in the proportion specified in the IRP. For example, since the proportional adjustment applicable for 2004 was 10.45 percent, those permittees with Interruptible Rights could pump their scheduled rights with 10.45 percent of that pumping being Interruptible Rights. When index wells allow, if pumping occurs, it includes both Interruptible and Uninterruptible Rights so it is no longer possible to store all Uninterruptible Rights for use in dryer periods. Uninterruptible Rights withdrawals would have to be scheduled quarterly, with Interruptible Rights seen as 'bonus' pumping rights when index well levels allow. Again, this binding of rights together results in a lower impact on the Aquifer and springflows than previously described in the December 2003 Rules Assessment. Nonetheless, the December 2003 Rules Assessment asserted that both the index well trigger levels for Interruptible Rights pumping and the Demand Management/Critical Period rules provide protections for springflows when Aquifer levels decline, thus protecting springflows. The result on the Aquifer and Aquifer-dependent species would still be negligible under the Proposed Implementation Rules.

According to the December 2003 Rules Assessment, if Aquifer water levels are very high at the beginning of the year, and the weather during that year is hot and dry, then pumpage would be high but DM/CPM rules would not reduce pumpage significantly. When examined on a year-to-year basis, DM/CPM reductions are not so much a function of weather and pumpage conditions during a particular year as they are a function of water levels in the Aquifer at the beginning of the year which, in turn, are a function of weather and pumping for previous years. If DM/CPM rules had been in effect during the last 20 years, some record pumpage years may not have been impacted at all by these rules.

The December 2003 Rules Assessment assumed that Interruptible Rights could be pumped separately, and therefore would be scheduled for pumping in the first quarter, index well levels permitting. Uninterruptible Rights would be scheduled for dryer periods and they would be pumped in a shorter timeframe until DM/CPM trigger levels were reached, curtailing pumping. The previous December 2003 Rules Assessment assumed that for at least one year

during the regulatory timeframe (through 2007), all Interruptible Rights pumping would be concentrated in the first quarter. The current Proposed Implementation Rules assume that some Interruptible Rights would be pumped in the first quarter, and those rights would offset some of the pumping requirements of subsequent quarters (more water may be left for dryer periods). This reduces the impact of pumping on the Aquifer because for at least part of the year, unused proportional Interruptible Right/Uninterruptible Right water could be carried forward into dryer periods (if no Notice of Cessation is in place).

4.3 POTENTIAL IMPACTS OF REDUCED SPRINGFLOWS RESULTING FROM WITHDRAWAL OF INTERRUPTIBLE RIGHTS ON THE AQUIFER'S BIOLOGICAL RESOURCES

4.3.1 Springflows and the Ecosystems

The Edwards Aquifer, including its two largest spring ecosystems, Comal and San Marcos Springs, maintains a diversity of species, many of which are endemic. While the Aquifer and its spring systems are closely associated with respect to water quality, water quantity, and thermal conditions, the Edwards Aquifer supports a highly adapted biological assemblage that differs considerably from those species found in the spring ecosystems. The individual species within the subterranean biological assemblage have adapted to seasonal and weather-related variations in groundwater levels. The focus of this part of the rules assessment will be on the potential impact of the withdrawal of Interruptible/Uninterruptible Rights under the Proposed Implementation Rules on flows from Comal and San Marcos Springs and the subsequent impact to the respective aquatic ecosystems.

A host of environmental attributes shapes the partitioning of habitat and control distributions of the various species in the Comal and San Marcos Springs ecosystems. These attributes include flow (depth and velocity), temperature, substrate size and distribution, oxygen content, turbidity, and other physical and chemical conditions that combine with biotic influences to control population dynamics of individual species (U.S Fish and Wildlife Service, 1996). Regarding species-specific biological requirements, the factor most-frequently discussed with concern to all species is the quantity of springflow.

With the exception of the San Marcos gambusia, *Gambusia georgei*, each of these species is currently present in its respective spring ecosystem, which indicates persistence through the drought of record (though likely extinct now, the San Marcos gambusia was sampled subsequent to the drought of record). One could expect that these species would continue to survive if environmental conditions resemble the period of record. While there is no clear

evidence that the drying of Comal Springs was the sole cause for the disappearance of the fountain darter in that system in the 1950s, any period of zero flow would introduce the potential for reduced survival of some species. Maintaining a hydrograph similar to that of recorded history, while providing a measure of safety against periods of zero flow, would provide the best means of protecting the aquatic communities as a whole and meeting the goal of threatened and endangered species survival in the wild.

Existing ecosystem function and native aquatic biodiversity can be preserved by maintaining springflows at levels similar to those previously recorded. Achieving this objective would help ensure the survival of threatened and endangered species in the Comal and San Marcos Springs, and maintain the integrity of the entire aquatic ecosystem.

Impacts to the flora and fauna within the Comal and San Marcos Springs ecosystems are directly related to the amount and quality of usable habitat that remains available to each species. The dynamic nature of stream ecosystems dictates that the amount of available habitat to each species will fluctuate in response to a number of variables, one of the most significant of which is streamflow. Instream flow must be sufficient to meet the necessary requirements of the species dependant on the stream system.

The drought analysis of Dr. Ray Mauldin, University of Texas at San Antonio, suggests that the drought of record is the most severe by a factor of two using the Palmer drought index for the last 300 years. Periods of severe drought pose risks to several species of concern in both the San Marcos and Comal Springs systems because of the resulting periods of low-flow and potential loss of suitable habitat. Although water quantity is a major factor to suitable habitat for these species, other requirements for suitable habitat include adequate water quality, preferred vegetation composition, low incidence of competitive, non-native species, and other more species-specific conditions.

4.3.2 Potential Impacts to Biological and Hydrological Risk Resulting from the Hypothetical Withdrawal of Interruptible Rights through 2007

For the December 2003 Rules Assessment, biological impacts and risks to the biological resources of the Comal, San Marcos, and other springs systems arising as a result of the Chapter 711 Final Rules were assessed within the context of the risk analysis undertaken for the Authority's draft HCP (EAA, 2004).

The risk assessment for the HCP/EIS addressed the risks to the ecosystems associated with several alternative annual Aquifer pumping limit levels and related springflow levels.

Depending on the amount of hydrologic alteration indicated in the analysis, biological risk (low, moderate, high, and severe) was assessed based upon suitable habitat for the species and the relative amount of time that low-flow conditions would be expected. These two components, hydrologic alteration and biological risk, were combined to assess total risks to the species. Based on an analysis of springflow variability over the period of record for Comal and San Marcos Springs, that assessment concluded that the spring ecosystems have evolved within an environment of considerable variation in flow and that the continued vitality of the ecosystems would *best be maintained* in the future within a regime of *continued flow variation*. The analysis does note, however, that *extremely low or high flows pose increased risks* to the species inhabiting the ecosystems. A range of flow variation was identified that would provide sufficient habitat necessary to minimize biological and hydrological risks.

Extremely low springflows at Comal Springs occur when water levels at J-17 are well below 665 feet msl which would preclude the withdrawal of Interruptible Rights. Above 665 feet msl, water levels and springflows would be at high levels. In such conditions, pumping of Interruptible Rights with Uninterruptible Rights would not have adverse effects to the spring ecosystems.

Results of biological modeling to evaluate pumping alternatives for the HCP indicate that at very low flows and/or Aquifer low recharge ecosystems are adversely impacted by hydrologic alteration. The extent of these impacts would depend on the duration and intensity of low springflow events that might result from the increased pumping allowed by the Interruptible Rights withdrawals. Such impacts cannot be quantitatively estimated for this evaluation. Declining Aquifer levels and resulting impacts to the spring ecosystems would be managed through two principal controlling mechanisms: 1) curtailment of Interruptible Rights pumping when the Index Wells decline below 665 and 865 feet above msl, and 2) additional DM/CPM reductions required by DM/CPM rules if Aquifer levels continue to decline below 650 feet above msl.

As stated in the December 2003 Rules Assessment, withdrawals of water under proposed Interruptible Rights is not expected to detrimentally affect springflows at Comal or San Marcos Springs during drought periods because withdrawal of such rights would be prohibited when the Aquifer level falls below the index well trigger levels of 665 feet above msl at J-17 and 865 feet above msl at J-27. The Proposed Implementation Rules combining Interruptible and Uninterruptible Rights would not change the established trigger levels, so the principal controlling mechanisms mentioned above would serve to manage potential impacts.

To summarize, estimates of springflow and biological impacts suggest that the creation of Interruptible Rights and the Proposed Implementation Rules would have, at the very most, negligible impact to the Aquifer and its biological resources. Potential adverse impacts would be mitigated by the ability to transfer combined Interruptible/Uninterruptible Rights from the Aquifer during wet periods when the Aquifer level is above 665 msl at J-17 for future storage and recovery to reduce pumping demand and protect springflow when droughts occur. Previously, it was determined that the ASR project would substantially mitigate impacts to the Aquifer and its resources since Interruptible Rights would be desired as source water for filling the ASR. SAWS remains a potential customer for Interruptible/Uninterruptible Rights, but separable Interruptible Rights lose some of their attraction as a lower cost source of supply when they are bound to Uninterruptible Rights (although pre-paid, unused Uninterruptible Rights could be applied to the ASR project in the fourth quarter and the market for combined rights may also be favorable at that time). Additional mitigation would also be provided through implementation of biological and Aquifer management measures identified in the Authority's proposed HCP currently under development.

4.3.3 Potential Downstream Impacts of Withdrawal of Interruptible Rights

The following discussion was originally provided in the December 2003 Rules Assessment. It is repeated here because the information is still relevant. The Proposed Implementation Rules do not change the nature of potential impacts on downstream flows due to Interruptible Rights. They do, however, moderate those effects in two ways. (1) Because Interruptible and Uninterruptible Rights are bound together, this eliminates the possibility that all Interruptible Rights would be pumped at the beginning of certain years (when allowed by index well trigger levels) and Uninterruptible Rights would be reserved until dryer periods. Under the Proposed Implementation Rules, some Interruptible Rights (as part of combined rights) would be pumped when allowed and Uninterruptible Rights could not all be reserved and then pumped during dryer periods. (2) As discussed in the December 2003 Rules Assessment, the SAWS ASR project will provide storage for Edwards water in wet periods then serve as a water source during dry periods. Under the Proposed Implementation Rules, SAWS can no longer gain the economic advantage of purchasing Interruptible Rights at a lower cost and pumping them to a maximum degree for storage at the beginning of the year. Interruptible and Uninterruptible Rights have to be pumped together. The ASR project still benefits downstream users overall because it is a source of supply during dryer periods, regardless of the source of water used to fill it or the price of that water. Additionally, the only time Interruptible Rights could be used in full would be for those few stated years when index wells stayed above trigger levels all year. This

lower pumping is also a benefit to downstream users. Besides these distinctions, the following discussion of the effects on downstream users continues to be relevant.

If lower springflows result from the withdrawal of Interruptible Rights, flows of the San Marcos, Comal, Nueces, San Antonio, and Guadalupe Rivers downstream of the springs could be affected. Although this assessment has not used the Guadalupe River Water Availability Model to estimate the quantitative impact of potential lower springflows to the receiving rivers at various gauge points downstream, it can reasonably be concluded that over relatively short reaches downstream of the springs, lower springflows would lead to lower river flows. Lower river flows would have several negative impacts on the local area's water-related recreational economy and reduce water available to surface rights holders in the Guadalupe River Basin, as discussed below. The following examination of downstream impacts draws upon material developed in the Authority's Draft Programmatic Assessment (RPC, 2000), its Draft HCP/EIS and the 1998 Assessment Report of the South Central Texas Water Advisory Committee (SCTWAC).

4.3.3.1 Springflow-Dependent River Recreation and Commercial Enterprises

As noted in the EAA's Draft Programmatic Assessment (RPC, 2000), tourist attractions benefit from pumping restrictions and higher springflows. Water recreation businesses along the San Marcos and Comal Rivers would directly benefit from higher flows, since faster river flow affords more exciting tubing, canoeing, and rafting. Water recreation below Canyon Dam benefits indirectly from higher Comal springflow since more water could be stored behind Canyon Dam for later release, significantly extending the period of desirable river recreation conditions. However, Guadalupe River flows are more affected by canyon releases than springflow, and releases are a function of in-flows into Canyon Lake.

Comal Springs and San Marcos Springs play important roles in the health of the tourist industry in Comal and Hays counties, respectively. These springs, the Comal and San Marcos Rivers, Canyon Lake, and the middle Guadalupe River, collectively support a large, water-based sector of the regional economy.

Tourism spending for overnight visitors in Comal County was estimated to be $161,660,000 in the year 2000, generating $3,340,000 in local sales tax receipts (city and county) and $11,320,000 in state sales tax receipts (Texas Department of Economic Development and Dean Runyon Associates 2001). Day visitors were estimated to generate the same economic impact as overnight guests in Comal County (Meek 2002). As a result, total tourism spending in Comal County was estimated to be approximately $323,000,000 in the year

2000, generating approximately $6,680,000 in local sales tax receipts or approximately 55.3 percent of the total City of New Braunfels and Comal County sales tax receipts of $12,080,000. Water-based recreation was estimated to account for 70 percent of annual tourism revenue in Comal County, generating approximately $4,700,000 in local sales tax revenues in the year 2000 (Meek 2002).

Employment in the leisure and hospitality industry ranged from 11 percent to 15 percent of total Comal County employment during the year 2001. Reflecting the importance of water-based recreation in Comal County, employment in the leisure and hospitality industry rose during the water season from May through September and fell during the rest of the year. For example, leisure and hospitality employment in Comal County averaged 4,625 jobs during the third quarter of 2001 and fell to 3,292 jobs during the fourth quarter, a decrease of 28.8 percent. In 2002 and 2003, leisure and hospitality employment again peaked in the third quarter at 15.10 percent (4,718 jobs) and 15.90 percent (5,043 jobs) of total county employment respectively. Comal County leisure and hospitality employment was between 11.0 and 12 percent for the first and fourth quarters for both years (Texas Workforce Commission 2002, 2004).

Tourism spending for overnight visitors in Hays County was estimated to be $111,970,000 in the year 2000, generating $1,770,000 in local sales tax receipts (city and county) and $8,210,000 in State sales tax receipts (Texas Department of Economic Development and Dean Runyon Associates, 2001). Information on the economic impacts of day visitors and water-based recreation in Hays County is not available.

Unlike Comal County, employment in the leisure and hospitality industry remained relatively stable throughout the year in Hays County, ranging from 10.8 percent to 11.8 percent of total employment during the year 2001. For example, leisure and hospitality employment in Hays County averaged 4,205 jobs during the third quarter of 2001 and fell to 3,995 jobs during the fourth quarter, a decrease of only 5.0 percent. In both 2002 and 2003, Hays County leisure and hospitality employment was between 11.49 percent (4,244 jobs) and 12.89 percent (4,680 jobs) for all four quarters for both years (TWC 2002, 2004). The stability of tourism employment throughout the year indicates that water-based recreation plays a smaller role in Hays County than in Comal County.

The possible reduction of Comal and San Marcos springflows under the assumption of implementation of the Proposed Implementation Rules on Interruptible Rights during periods of extreme hydroclimatology could reduce downstream river flows but these reductions would largely occur during relatively wet periods when streamflows would be above average. These

reductions would be unlikely to have substantial negative impacts to the businesses along the Comal and Guadalupe Rivers and to those seeking to enjoy the rivers. This assessment does not, however, include estimates of the quantitative economic effects associated with implementation of Interruptible Rights.

4.3.3.2 Surface Water Rights in the Guadalupe River Basin

The Guadalupe River Basin originates in southwestern Kerr County and drains southeasterly to Guadalupe Bay in the San Antonio Bay System. Drainage area for the Guadalupe River Basin is 6,070 square miles, and the main tributaries to the Guadalupe River are the Blanco and San Marcos Rivers.

The base flow of the Guadalupe River is affected by flows of the Comal and San Marcos Rivers, each river originating from Comal Springs and San Marcos Springs, respectively. The Comal River, the shortest river in Texas and the United States, runs approximately 3.1 miles before emptying into the Guadalupe River. The San Marcos River also empties into the Guadalupe River near Gonzales in Gonzales County after its confluence with the Blanco River.

Appendix *Surface* in the Draft Programmatic Assessment (RPC, 2000) summarizes findings presented in the Assessment Report of the South Central Texas Water Advisory Committee (1998). The SCTWAC Report discussed in limited ways the impacts to the Nueces and San Antonio Basins. Results of the GSA-4 model were used to estimate the downstream effects of alternative withdrawal limits imposed by the Authority.

The SCTWAC report concluded that a withdrawal limit of 450,000 acre-feet per year is not fully protective of downstream water rights, especially during a repeat of a drought similar to the drought of the 1950s. Water rights in the Comal River would be affected the most, with no water available for diversion for a period of more than two years. For purposes of their assessment, the key comparison was to a hypothetical future condition in which Edwards Aquifer pumping is not constrained. While this scenario was not simulated by SCTWAC, their report does contain information indicating that a change in withdrawal rates of several hundred thousand acre-feet per year would have significant impacts. Increased shortages would be felt throughout the system, but especially in the upper reaches including Canyon Reservoir.

The report further concluded that a more detailed assessment of downstream impacts would be appropriate for the 400,000 acre-feet per year cap to be implemented in 2008, because downstream users are required to pay for part of the cost of meeting that reduction. The

SCTWAC report indicates that a 450,000 acre-feet per year withdrawal limit is a beneficial start in protecting downstream interests but is not sufficient. The report's simulations also indicate that changes in springflow resulting from a 450,000 acre-feet per year cap would be small compared to the overall water budget of the river system as it discharges into Guadalupe Bay. Thus, withdrawal limits imposed by the Edwards Aquifer Authority would yield relatively small benefits to the fish harvest or the bay and estuary ecosystems.

The Draft Programmatic Assessment's examination of downstream effects was based on GWSIM modeling of the period of record, including the drought of record. Downstream interests are particularly concerned about Aquifer withdrawals during severe drought conditions.

According to the December 2003 Rules Assessment, the withdrawal of Interruptible Rights under the Proposed Implementation Rules would likely increase the rate of decline in springflow during drought conditions (especially in a wet year-dry year scenario), providing relatively less water for these rivers. But as these relative decreases in springflows resulting from Interruptible Rights withdrawals have not been modeled with the Guadalupe River Water Availability Model (TCEQ, 2003), the quantitative impact on surface water availability to downstream rights holders and environmental interests cannot be explicitly estimated. Slightly negative impacts could be expected to occur, however, especially in the river reaches immediately below the springs. These assertions remain true for the Implementation Rules Assessment, with the caveat that the wet year-dry year scenario is no longer a major factor since Interruptible and Uninterruptible Rights are unseverable.

4.3.3.3 San Antonio Bay and Guadalupe Estuary

Since a portion of the flow of the Guadalupe River is derived from flows of the Comal and San Marcos Rivers, contributions of Edwards Aquifer discharge to the Guadalupe River via Comal and San Marcos springs can be significant under certain conditions. Local runoff to the estuary is contributed from parts of the San Antonio-Nueces and Lavaca-Guadalupe coastal basins. Both the quantity and quality of flow of the Guadalupe River subsequently affect biological productivity of the Guadalupe Estuary System including Mission Lake, Guadalupe, Ayres, San Antonio, Mesquite, and Espiritu Santo Bays. The Resource Protection Division of the Texas Parks and Wildlife Department has recommended a "…lowest target value…" freshwater inflow to the Guadalupe Estuary System of 1,150,000 acre-feet per year to fulfill the biological needs of the system on a seasonal basis. Occasional higher inflows above the target level are recommended to maintain the biological productivity and ecological health of the

estuary (TPWD 1998). The contribution of various sources of freshwater to the Guadalupe Estuary System is provided in **Table 4.3-1**.

Table 4.3-1 Average Annual Freshwater Inflow to Guadalupe Estuary System

Source	Inflow (acre-feet/year)	% of Total Inflow
Guadalupe River	1,304,000	42.8
San Antonio River	485,400	15.9
Precipitation	440,000	14.4
Local runoff	460,000	15.1
Edwards Aquifer	360,000	11.8
TOTAL	3,049,400	100.0

SOURCE: CH2M Hill 1986.

The average annual contribution of the Edwards Aquifer according to the above table is about 12 percent. The proportion contributed by the Edwards Aquifer to freshwater inflow into the bay system is higher in drought years. Using data provided by Espey, Huston & Associates (1986), McKinney and Watkins (1993) concluded that contributions of the Edwards Aquifer during the drought of record that occurred in 1956 were about 30 percent of the total inflow to San Antonio Bay. Based on unpublished information obtained from TPWD (2000), the contribution of the Edwards Aquifer springflow to San Antonio Bay and Guadalupe Estuary System during the drought year of 1996 was about 33 percent of the total inflow. Estimates by the GBRA for springflow contribution to the estuary during 1996 were similar, with the highest contribution exceeding 35 percent during the month of July (Votteler 2002). The contribution of spring discharges to the Guadalupe River flow at Victoria, Texas during the 1996 drought was estimated by Votteler (2000) to be 78 percent. Decreased contributions of freshwater flow to the Guadalupe Estuary from the Guadalupe River would be offset by increased contributions of freshwater flow from the San Antonio River as a result of increased treated effluent from water treatment plants.

Water availability modeling of the impact of increased springflows on the contributions of freshwater inflows to the San Antonio Bay and Guadalupe Estuary System has not been undertaken for this assessment of the Proposed Implementation Rules. However, based on the relationship between springflows and contributions to the bay and estuary, as cited above, it would not be unreasonable to conclude that the withdrawal of Interruptible Rights under the Proposed Implementation Rules could have slightly negative, if unquantifiable, impacts on these resources if these withdrawals led to an annual withdrawal of substantially more than 450,000 acre-feet per year. These impacts would potentially be most severe during drought conditions. The withdrawal of Interruptible Rights would, however, take place mostly during periods of high precipitation and recharge.

According to the December 2003 Rules Assessment, a hypothetical scenario can be considered whereby drought conditions existed in the Guadalupe Basin and above average precipitation and recharge occurred in the recharge zone portion of the Nueces and San Antonio Basins leading to high Aquifer levels. Under this improbable set of circumstances, the withdrawal of Interruptible Rights and possible impacts to springflow and subsequent downstream flows could occur. However, the binding of Interruptible and Uninterruptible Rights and their required proportional withdrawal would further reduce the likelihood of negative impacts to springflow.

4.3.3.4 Downstream Concerns and the Public Involvement Process

Several downstream entities participated in the public involvement process by providing comments on Chapter 711 Final Rules. The Authority has published specific responses to those comments in the Final Order Adopting the Rules. Some of the comments on those Proposed Rules (now December 2003 Final Rules) submitted by the GBRA include the following: (1) the Authority has failed to conduct any or adequate analysis of the impact of the Proposed Rules (now December 2003 Final Rules); (2) the Proposed Rules (now December 2003 Final Rules) do not adequately describe how Interruptible Rights and Uninterruptible Rights will be administered or implemented; and (3) the Proposed Rules (now December 2003 Final Rules) will leave the region vulnerable to more frequent and severe critical periods and the possible need for "crippling reductions in supply" during critically dry times.

With regard to a general assertion that assessments have not been done regarding potential impacts on the Aquifer, the Authority cites the December 2003 Rules Assessment, sections of which have been reproduced in the current document. The current Proposed Implementation Rules are an outgrowth of the specific comments concerning implementation and administration, and lay out more concrete guidelines for withdrawal scheduling; monitoring and reporting; the binding of rights in proportion and inseparably; and notification responsibilities of the Authority to inform permittees when withdrawals can and cannot be made. These provisions of the Proposed Implementation Rules provide elaboration of the concepts first expressed in the December 2003 Final Rules, and together they establish an organized program with specific responsibilities for managing withdrawals and safeguarding springflows.

The Authority reiterates the combination of Interruptible Rights withdrawals and the DM/CPM Rules together so that special Aquifer conditions are located in one place in the rules. In some instances (when Aquifer levels are high), extra withdrawals can be made. When

Aquifer levels are low, pumping is curtailed according to the previously-approved DM/CPM rules. This joint system allows the Authority to control pumping in dry periods to protect springflows, and as indicated in the 2000 SCTWAC report described in Chapters 3 and 4, term permits/Interruptible Rights would be available for pumping but not to the extent that would result in "crippling reductions in supply".

The Authority has explained that the creation of Interruptible Rights allows them to uphold the key provisions in the enabling legislation honoring historical and irrigator minimums while maintaining a cap on initial regular permits and ARPs. This approach allows for those eligible for Interruptible Rights to retain more water than simple imposition of proportional reductions without compensation. Though downstream interests expressed a preference for "buy down", the Authority does not have the authority to generate funds other than through fees that would have an unnecessarily adverse affect on permit-holders (between $26 and $43 per acre-foot in additional aquifer management fees for municipal and industrial users) but would not affect downstream interests until 2008.

To summarize, though they are not permit holders who would be directly affected by proportional adjustment and creation of Interruptible Rights, downstream interests have been the most vocal in opposition to the proposed introduction of Interruptible Rights. The Authority has prepared several additional documents in response to those downstream interests, and has determined that the creation of Interruptible Rights is within their statutory authority, does not exceed the cap, would in fact result in additional supplies being available in dryer times thanks to the SAWS ASR project, allows the Authority to reconcile the competing provisions of the enabling legislation, and would have negligible impacts on the Aquifer and Aquifer-related resources.

5.0 RULE ANALYSIS BY SECTION

5.1 INTRODUCTION

As indicated in Section 1.0 of this report, the scope of this assessment focuses on the following Proposed Implementation Rules: amendments to CHAPTER 702 (General Definitions); CHAPTER 709 (Fees); SUBCHAPTER D (Aquifer Management Fees); CHAPTER 711 (Groundwater Withdrawals); SUBCHAPTERS E (Groundwater Withdrawal Permits), F (Standard Groundwater Withdrawal Conditions), G (Groundwater Available for Permitting; Proportional Adjustment; Equal Percentage Reduction), L (Transfers), and M (Meters; Alternative Measuring Methods; and Reporting); CHAPTER 715 (Comprehensive Water Measurement Plan Implementation), SUBCHAPTERS A (Definitions), and D (Demand Management and Critical Period Management Rules) related to implementation of the "junior/senior" concept. This section by section analysis of the Proposed Implementation Rules is based primarily on analyses provided in this assessment.

The primary consequence of the set of December 2003 Final Rules is that qualifying permittees may be issued an initial regular permit with two types of groundwater withdrawal rights. The first type is an Interruptible Right, and the second is an ostensibly Uninterruptible Right. The Interruptible Rights are subject to truncation when, for the San Antonio Pool, Index Well J-17 is less than or equal to 665 feet above msl, and for the Uvalde Pool, Index Well J-27 is less than or equal to 865 feet above msl. The Uninterruptible Right is also subject to interruption, but at lower aquifer levels, when, for the San Antonio Pool, Index Well J-17 is less than or equal to 650 feet elevation, and for the Uvalde Pool, Index Well J-27 is less than or equal to 845 feet elevation.

In a global sense, the Proposed Implementation Rules link or combine a mandatory proportionality of Interruptible Rights and Uninterruptible Rights within each initial regular permit. This linkage changes the character of the manner in which water can be withdrawn under any given initial regular permit and it changes the nature of water transfers in that bound Interruptible and Uninterruptible Rights cannot be segregated for purposes of sale or lease of water covered under any given permit. In other words, Interruptible Rights under the Proposed Implementation Rules cannot be sold or leased separately from Uninterruptible Rights.

5.2 CHANGES TO GENERAL DEFINITIONS (CHAPTER 702)

In Section 702.1(b) General Definitions, the term "Interruptible" (702.1(b) (34)) is deleted. The deletion clears the way for the linkage of Interruptible and Uninterruptible Rights definitions that occur throughout proposed CHAPTER 709, CHAPTER 711, and CHAPTER 715.

CHAPTER 702. GENERAL DEFINITIONS

Section
702.1 General Definitions

§ 702.1 General Definitions

. . .

(b) The following words and terms, when used in any rule of the Authority, shall have the following meanings, unless the context clearly indicates otherwise:

. . .

~~(34) Interruptible - When referring to a groundwater withdrawal permit, the conditioning of the right to withdraw groundwater from the Aquifer that makes the right subject to complete cessation, temporary curtailment, or reduction of the amount of groundwater that may be withdrawn from the Aquifer based upon the measurement of a water level at an index well, or as otherwise required by Chapter 715 of the Authority's rules (Comprehensive Water Management Plan Implementation).~~

. . .

NOTE: Following definitions to be renumbered as necessary.

5.3 AQUIFER MANAGEMENT FEES

The proposed changes to Chapter 709, Subchapter D are necessary in order to connect the linkage of Interruptible and Uninterruptible Rights withdrawals to the fee structure pursuant to Section 711.174 (Equal Percentage Reduction of initial regular permits) and Section 711.176 (b) (6) (Groundwater Withdrawal Amounts for initial regular permits; Interruptible Withdrawals of Phase 2 Proportional Amounts), and Section 711.164 which is (Groundwater Available for Permitted Withdrawals for Initial and Additional Regular Permits). These changes bring uniformity with regard to the concept of combined Interruptible and Uninterruptible Rights for the assessment, billing and collection of Aquifer management fees, including changes made to user contracts.

CHAPTER 709. FEES

Subchapter D. Aquifer Management Fees

Section

. . .

709.19 Adoption and Assessment
709.21 Billing and Collection

. . .

709.25 User Contracts

. . .

§ 709.19 Adoption and Assessment

(a) Not later than December 31st of each year, the general manager shall, pursuant to this subchapter, calculate and assess an Aquifer management fee for the succeeding year.

. . .

(f) Aquifer management fees shall be assessed without regard to whether groundwater withdrawals are Interruptible or Uninterruptible pursuant to § 711.174 (Equal Percentage Reduction of initial regular permits) and § 711.176(b)(6) (Groundwater Withdrawal Amounts for initial regular permits; Interruptible Withdrawals of Phase-2 Proportional Amounts) of the Authority's rules.

§ 709.21 Billing and Collection

(a) All persons authorized for Aquifer use under interim authorization status pursuant to § 1.17 of the Act and the rules of the Authority, or under a final groundwater withdrawal permit issued by the board, and all unauthorized users of the Aquifer, are required to pay to the Authority an Aquifer management fee as assessed pursuant to this subchapter.

. . .

(i) The general manager shall bill and collect Aquifer management fees under this section without any distinction between groundwater withdrawal permit rights classified as Interruptible or Uninterruptible pursuant to § 711.164 (Groundwater Available for Permitted Withdrawals for Initial and Additional Regular Permits) and § 711.176(b)(6) (Groundwater Withdrawal Amounts for initial regular permits; Interruptible Withdrawals of Phase-2 Proportional Amounts) of the Authority's rules.

. . .

§ 709.25 User Contracts

In order to encourage water conservation, the general manager may contract with any non-agricultural user for the user to commit to Aquifer use less than an amount to which the user would otherwise be authorized, as follows:

(a) Except as otherwise set forth in subsection (b) below, not later than September 30th of the year preceding the calendar year for which a user contract will be effective, the general manager may contract with any non-agricultural user for the user to commit to Aquifer use less than an amount to which the user would otherwise be authorized. The Authority shall assess Aquifer management fees for the reduced amount of contracted Aquifer use. Aquifer management fees under this subsection shall be assessed without any distinction between groundwater withdrawal permit rights classified as Interruptible or Uninterruptible pursuant to § 711.164 (Groundwater Available for Permitted Withdrawals for Initial and Additional Regular Permits) and § 711.176(b)(6) (Groundwater Withdrawal Amounts for initial regular permits; Interruptible Withdrawals of Phase-2 Proportional Amounts) of the Authority's rules. A user contract shall be effective on a calendar year basis and may not have a term of greater than a one-year period.

(b) For any non-agricultural user who, through a transfer approved by the Authority, obtains interim authorization status or a final groundwater withdrawal permit, the general manager may, within 30 days of the date the transfer is approved, contract with such user for the user to commit to Aquifer use less than an amount to which the user would otherwise be authorized during the year in which the transfer is approved. Such a user contract shall terminate at the end of the year in which the transfer was approved and the contract was executed. If the transfer is approved later than September 30 in a given year, the general manager may, within 30 days of the date the transfer is approved, enter into a similar contract with the user for the subsequent calendar year. The Authority shall assess Aquifer management fees for the reduced amount of contracted Aquifer use. Aquifer management fees under this subsection shall be assessed without any distinction between groundwater withdrawal permit rights classified as Interruptible or Uninterruptible pursuant to § 711.164 (Groundwater Available for Permitted Withdrawals for Initial and Additional Regular Permits) and § 711.176(b)(6) (Groundwater Withdrawal Amounts for initial regular permits; Interruptible Withdrawals of Phase-2 Proportional Amounts) of the Authority's rules.

(c) In calculating the amount of groundwater withdrawal permit rights which is contracted for under this section, the Authority shall allocate all groundwater withdrawal permit rights contracted for as Interruptible and Uninterruptible in the same proportion as the Interruptible and Uninterruptible amounts authorized in the initial regular permit pursuant to § 711.176(b)(6) of this chapter (Groundwater Withdrawal Amounts for initial regular permits; Interruptible Withdrawals of Phase-2 Proportional Amounts).

(d) The Authority shall not approve a user contract which does not allocate the water contracted for as Interruptible and Uninterruptible in the same proportion as the Interruptible and Uninterruptible amounts authorized in the initial regular permit pursuant to § 711.176(b)(6) of this chapter (Groundwater Withdrawal Amounts for initial regular permits; Interruptible Withdrawals of Phase-2 Proportional Amounts).

5.4 GROUNDWATER WITHDRAWAL PERMITS, WITHDRAWAL CONDITIONS AND STANDARD CONDITIONS

The proposed changes to Chapter 711, Subchapters E and F are made in order to link Interruptible Rights withdrawals with Demand Management and Critical Management Rules of Chapter 715. The proposed changes lay the predicate for integrating combined Interruptible and Uninterruptible Rights withdrawals with the Comprehensive Water Management Plan.

CHAPTER 711. GROUNDWATER WITHDRAWALS

Subchapter E. Groundwater Withdrawal Permits

Section

. . .

711.98 initial regular permits
711.100 Additional Regular Permits
711.102 Term Permits

. . .

§ 711.98 initial regular permits

. . .

(i) ~~If in effect, i~~initial regular permits may be interrupted ~~in accordance with the following rules:~~

~~(1) the demand management and critical period management rules~~ pursuant to § 711.176(b)(6) (Groundwater Withdrawal Amounts for initial regular permits; Interruptible Withdrawals of Phase-2 Proportional Amounts) and subchapter D (Interruptible Withdrawals; Demand Management and Critical Period Management Rules) of chapter 715 ~~of the Authority's rules~~ (Comprehensive Water Management Plan Implementation).

§ 711.100 Additional Regular Permits

. . .

(g) ~~If in effect, a~~Additional regular permits may be interrupted ~~in accordance with the demand management and critical period management rules~~ pursuant to subchapter D (Interruptible Withdrawals; Demand Management and Critical Period Management Rules) of chapter 715 ~~of the Authority's rules~~ (Comprehensive Water Management Plan Implementation).

§ 711.102 Term Permits

. . .

(d) ~~If in effect, t~~Term permits shall be interrupted in accordance with the following Aquifer conditions ~~rules~~:

(1) for wells completed in the San Antonio Pool, the level of the Aquifer ~~for the San Antonio Pool~~ is equal to or less than 665 feet above msl as measured at well J-17; and

(2) for wells completed in the Uvalde Pool, the level of the Aquifer ~~for the Uvalde Pool~~ is equal to or less than 865 feet above msl as measured at well J-27~~; or~~

~~(3) the demand management and critical period management rules~~ pursuant to ~~subchapter D (Demand Management and Critical Period Management Rules) of chapter 715 of the Authority's rules (Comprehensive Water Management Plan Implementation)~~.

. . .

(h) By January 15, 2008, and by January 15 of each year thereafter, the board by order shall determine the total quantity of groundwater that may be withdrawn from each pool of the Aquifer for that calendar year pursuant to term permits. At any time by order of the board this determination may be revised as appropriate based upon actual Aquifer conditions to be consistent with chapter 715 of the Authority's rules (Comprehensive Water Management Plan Implementation). The Board shall not authorize the issuance of any term permits at any time prior to January 15, 2008.

Subchapter F. Standard Groundwater Withdrawal Permit Conditions

Section

. . .

711.134 Standard Conditions

§ 711.134 Standard Conditions

Any groundwater withdrawal permit issued by the Authority is subject to and the permittee shall comply with the following conditions:

. . .

(10) the interruption of the right to withdraw and beneficially use groundwater from the Aquifer pursuant to subchapter D (Interruptible Withdrawals; Demand Management and Critical Period Management Rules) of chapter 715 of the Authority's rules (Comprehensive Water Management Plan Implementation);

5.5 GROUNDWATER AVAILABLE FOR PERMITTING; PROPORTIONAL ADJUSTMENT; EQUAL PERCENTAGE REDUCTION

Proposed changes to Section 711.164, Section 711.172, and Section 711.176 make withdrawals subject to the requirements, limitations, and possible interruptions imposed by Subchapter D of Chapter 711, and establish uniform application of Phase 1 and Phase 2 Proportional Adjustment Factors pursuant to subsection (g) of Section 711.172. In Section 711.176, Interruptible Rights withdrawals are linked to minimum groundwater elevations in index wells J-17 and J-27.

Subchapter G. Groundwater Available for Permitting; Proportional Adjustment; Equal Percentage Reduction

Section

. . .

711.164 Groundwater Available for Permitted Withdrawals for Initial and Additional Regular Permits

. . .

711.172 Proportional Adjustment of initial regular permits.

. . .

711.176 Groundwater Withdrawal Amounts for initial regular permits; Interruptible Withdrawals of Phase-2 Proportional Amounts

. . .

§ 711.164 Groundwater Available for Permitted Withdrawals for Initial and Additional Regular Permits

(a) Except as provided by subsection (c), unless increased pursuant to § 1.14(d) of the Act and Subchapter K of this chapter (Additional Groundwater Supplies), the amount of groundwater from the Aquifer that the board may permit to be withdrawn on an Uninterruptible basis pursuant to initial regular permits, and additional regular permits for the period from the effective date of these rules through December 31, 2007, shall not exceed 450,000 acre-feet for each calendar year under the following Aquifer conditions:

(1) for wells completed in the San Antonio Pool, whenever the water level of the Aquifer as measured at well J-17 is equal to or greater than 650 feet above msl;

(2) for wells completed in the Uvalde Pool, whenever the water level of the Aquifer as measured at well J-27 is equal to or greater than 845 feet above msl.

Such withdrawals shall be subject to the requirements, limitations, and possible interruptions imposed by subchapter D (Interruptible Withdrawals; Demand Management and Critical Period

Management Rules) of chapter 715 of the Authority's rules (Comprehensive Water Management Plan Implementation).

. . .

§ 711.172 Proportional Adjustment of initial regular permits

. . .

(d) Proportionality. An adjustment is proportional when the ~~adjustment of the maximum historical use of an~~ initial ~~regular permit maintains a constant ratio in relation to the adjustment of the maximum historical use of all other permits~~Phase-1 and Phase-2 Proportional Adjustment Factors, if used, are applied uniformly pursuant to subsection (g).

. . .

§ 711.176 Groundwater Withdrawal Amounts for initial regular permits; Interruptible Withdrawals of Phase-2 Proportional Amounts

. . .

(b) If the aggregate maximum historical use of all applicants to be issued initial regular permits exceeds the amount of groundwater available for permitting in § 711.164(a) of this chapter (Groundwater Available for Permitted Withdrawals for Initial and Additional Regular Permits), then an applicant shall receive an ~~i~~Initial ~~r~~Regular ~~p~~Permit authorizing the withdrawal of groundwater from the Aquifer in the following amount):

. . .

(6) if the applicant qualifies for an irrigator or historical average minimum, a PA-2 amount is calculated pursuant to § 711.172(g)(7) and (8) of this chapter (Proportional Adjustment of initial regular permits), and the applicant's irrigator or historical average minimum (or where an irrigator applicant qualifies for both minimums, the greater of the two) is greater than the applicant's PA-2 amount, then in an amount equal to the applicant's PA-2 amount. In such a case, the difference, in acre-feet, between the applicant's PA-2 amount and the applicable minimum may, through December 31, 2007, be withdrawn on an Interruptible basis by the applicant only under the following Aquifer conditions:

(A) for wells in the San Antonio Pool, whenever the water level of the Aquifer as measured at well J-17 is greater than 665 feet above msl, pursuant to the requirements and limitations contained in subchapter D (Interruptible Withdrawals; Demand Management and Critical Period Management Rules) of chapter 715 of the Authority's rules (Comprehensive Water Management Plan Implementation); or

(B) for wells in the Uvalde Pool, whenever the water level of the Aquifer as measured at well J-27 is greater than 865 feet above msl, pursuant to the requirements and limitations contained in subchapter D (Interruptible Withdrawals; Demand Management and Critical Period Management Rules) of chapter 715 of the Authority's rules (Comprehensive Water Management Plan Implementation).

5.6 TRANSFERS

Proposed changes to Subchapter L introduce the concept of combined Interruptible and Uninterruptible Rights in calculating the portion of base irrigation groundwater of an initial regular permit, and the withdrawal authorized pursuant to the conversion of an initial regular permit. The effect is to create conditions, which require transfers of withdrawal amounts to include only combined Interruptible and Uninterruptible proportions. In other words, the Interruptible and Uninterruptible Rights withdrawal amounts in an IRP may not be transferred separately or in a proportion that is different from the proportion of Interruptible and Uninterruptible Rights amounts authorized in the initial regular permit pursuant to Section 711.176 (b) (6).

Subchapter L. Transfers

Section

711.320 Definitions

. . .

711.340 Conversion of Base Irrigation Groundwater

. . .

711.366 Transfer of Interruptible and Uninterruptible Withdrawal Amounts

§ 711.320 Definitions

The following words and terms, when used in this subchapter, shall have the following meanings, unless the context clearly indicates otherwise:

. . .

(2) groundwater withdrawal amount - The amount of groundwater from the Aquifer, in acre-feet per annum, which is authorized to be withdrawn under an initial regular permit issued by the board, or pursuant to interim authorization status, under § 711.70 of this chapter (Interim Authorization Groundwater Withdrawal Amounts).

. . .

§ 711.340 Conversion of Base Irrigation Groundwater

(a) The portion of an initial regular permit, or an application for an initial regular permit, constituting base irrigation groundwater may be converted to a regular permit, or an application, for unrestricted irrigation groundwater by filing an application to convert base irrigation groundwater consistent with § 707.428 of the Authority's rules (Applications to Convert Base Irrigation Groundwater).

(b) In calculating the portion of base irrigation groundwater of an initial regular permit subject to § 711.176(b)(6) of this chapter (Groundwater Withdrawal Amounts for initial regular permits; Interruptible Withdrawals of Phase-2 Proportional Amounts) to be converted to unrestricted irrigation groundwater, the converted groundwater withdrawal amount shall be allocated as Interruptible and Uninterruptible in the same proportion as the Interruptible and Uninterruptible amounts authorized in the initial regular permit pursuant to § 711.176(b)(6).

(c) The Authority shall allocate the amount of groundwater authorized to be withdrawn pursuant to a conversion of an initial regular subject to § 711.176(b)(6) approved prior to the effective date of these rules between Interruptible and Uninterruptible groundwater withdrawal amounts in the same proportion as the Interruptible and Uninterruptible amounts authorized in the initial regular permit pursuant to § 711.176(b)(6).

. . .

§ 711.366 Transfer of Interruptible and Uninterruptible Withdrawal Amounts

(a) In calculating the amount of groundwater authorized to be withdrawn pursuant to a transfer of an initial regular permit subject to § 711.176(b)(6) of this chapter (Groundwater Withdrawal Amounts for initial regular permits; Interruptible Withdrawals of Phase-2 Proportional Amounts), transferred groundwater withdrawal amounts shall be allocated as Interruptible and Uninterruptible in the same proportion as the Interruptible and Uninterruptible amounts authorized in the initial regular permit pursuant to § 711.176(b)(6).

(b) The Authority shall allocate the amount of groundwater authorized to be withdrawn pursuant to a transfer of an initial regular permit subject to § 711.176(b)(6) approved prior to the effective date of these rules between Interruptible and Uninterruptible groundwater withdrawal amounts in the same proportion as the Interruptible and Uninterruptible amounts authorized in the initial regular permit pursuant to § 711.176(b)(6).

(c) The Interruptible and Uninterruptible groundwater withdrawal amounts in an initial regular permit may not be transferred separately or in a proportion different from the proportion of Interruptible and Uninterruptible amounts authorized in the initial regular permit pursuant to § 711.176(b)(6).

5.7 METERS; ALTERNATIVE MEASURING METHODS; AND REPORTING

Proposed changes to Section 711.414 (Meter Reading; Groundwater Use Reporting) require that permit holders report withdrawals of Interruptible and Uninterruptible Rights withdrawal amounts on an annual and month by month basis.

Subchapter M. Meters; Alternative Measuring Methods; and Reporting

Section

. . .

711.414 Meter Reading; Groundwater Use Reporting

. . .

§ 711.414 Meter Reading; Groundwater Use Reporting

(a) Every permittee, or person with interim authorization status, shall accurately read the meter on a monthly and on an annual basis and shall file the results with the Authority by way of a written Annual Groundwater Use Report on a form prescribed by the Authority. The annual groundwater use report form prescribed by the Authority shall provide spaces to report withdrawals for both the entire year and on a month-by-month basis and, for reports submitted by holders of initial regular permits, shall provide spaces to identify Interruptible and Uninterruptible groundwater withdrawal amounts on an annual and month-by-month basis. Every permittee, or person with interim authorization status, shall assure that the Annual Groundwater Use Report reflects the withdrawals made during the preceding calendar year and shall include information on the amount of withdrawals made on both an annual and on a month-by-month basis.

5.8 COMPREHENSIVE WATER MANAGEMENT PLAN IMPLEMENTATION

Changes proposed to Subchapter A (Definitions) under this chapter incorporate the requirement of including an Interruptible component, if indicated, along with Uninterruptible Rights withdrawal amounts. This proposed change lays the predicate for the linkage of Interruptible and Uninterruptible Rights withdrawal amounts for use in subsequent sections of Chapter 715.

CHAPTER 715. COMPREHENSIVE WATER MANAGEMENT PLAN IMPLEMENTATION

Subchapter A. Definitions

Section
715.1 Definitions

§ 715.1 Definitions

The following words and terms, when used in this chapter, shall have the following meanings unless the context clearly indicates otherwise:

. . .

(25) Quarterly Scheduled Withdrawal Amount - The amount of groundwater that a person plans to and, assuming appropriate Aquifer and springflow conditions, is authorized to withdraw for each quarter, as stated in the person's ~~demand management and critical period~~quarterly withdrawal schedule filed with the Authority pursuant to subsection (c) of § 715.204 (Authorized Withdrawals; ~~Demand Management and Critical Period~~ Quarterly Withdrawal Schedules) of this chapter. For those authorized to withdraw pursuant to interim authorization status or pursuant to a groundwater withdrawal permit other than an initial regular permit, and for those authorized to withdraw pursuant to an initial regular permit that does not include any Interruptible portion, the Quarterly Scheduled Withdrawal Amount shall consist of a single number for each quarter. For those authorized to withdraw pursuant to an initial regular permit that includes an Interruptible portion, the Quarterly Scheduled Withdrawal Amount shall consist of two components, the "Interruptible Quarterly Scheduled Withdrawal Amount" and the "Uninterruptible Quarterly Scheduled Withdrawal Amount."

5.9 INTERRUPTIBLE WITHDRAWALS; DEMAND MANAGEMENT AND CRITICAL PERIOD MANAGEMENT RULES

The purpose of proposed changes in this subchapter include implementation of Sections 1.14 (b) and (f) and 1.16 (e) of the Edwards Aquifer Authority Act which requires the Authority to issue permits at the minimum level specified while protecting the Aquifer and honoring the 450,000 acre feet cap. Subsequent amendments in this subchapter integrate the use of combined Interruptible and Uninterruptible Rights withdrawals into the Demand Management /Critical Period framework. Moreover, the application of quarterly withdrawal schedules based on Interruptible and Uninterruptible components is given applicability regardless of whether Demand Management or Critical Period conditions are in effect. The subchapter includes a template that illustrates the breakout of Interruptible and Uninterruptible Rights withdrawals allowed on a quarterly basis. The implication is reinforced throughout the Proposed Implementation Rule changes that Interruptible and Uninterruptible Rights withdrawals are inextricably linked in the new management framework. Cessation and resumption of Interruptible Rights withdrawals are defined for both the San Antonio and Uvalde Pools which will remain in effect only through December, 2007. Essentially this framework dramatically limits the flexibility and utility of Interruptible Rights, and it imposes more structure and a prorating system for Uninterruptible Rights withdrawals during periods of demand management and critical period conditions.

Subchapter D. Interruptible Withdrawals; Demand Management and Critical Period Management Rules

Section

715.200	Purpose
715.202	Applicability
715.204	Authorized Withdrawals; Demand Management and Critical Period Withdrawal Schedules
715.206	Transfers
715.208	Groundwater Carryforwards Generally Prohibited; Irrigation Carryforwards
715.210	Monthly Groundwater Withdrawal Reports
715.211	Cessation and Resumption of Interruptible Withdrawal Rights in the San Antonio Pool
715.2111	Cessation and Resumption of Interruptible Withdrawal Rights in the Uvalde Pool
715.2112	Withdrawal of Interruptible Rights
	. . .
715.218	Interruption of Withdrawals During Demand Management and Critical Periods
	. . .

§ 715.200 Purpose

The purpose of this subchapter is twofold: (1) to implement §§ 1.14(b) and (f), 1.16(e) and 1.19 of the Act which require the Authority to implement a permitting program while honoring the legislative intent of the Act to issue permits at the minimum levels specified while protecting the Aquifer and honoring the 450,000 acre-feet cap; and (2) to implement §§ 1.14(h), 1.25, and 1.26 of the Act, which requires that the Authority prepare and implement a management plan for critical periods and implement and enforce certain water management practices. These rules are intended to authorize the maximum aggregate withdrawals from the Aquifer from wells with groundwater withdrawal permits, interim authorization status, or exempt well status balanced against the Authority's Aquifer management strategy to slow the rate of decline of springflows in Comal or San Marcos Springs. Slowing the rate of decline of springflows will allow more time for the return of normal precipitation events resulting in the maintenance or increase of Aquifer levels which would concomitantly result in the maintenance or increase in spring levels.

§ 715.202 Applicability

(a) For those authorized to withdraw pursuant to interim authorization status or pursuant to a groundwater withdrawal permit other than an initial regular permit, t~~T~~his subchapter applies only to periods of time when a demand management period or critical period is in effect. For those authorized to withdraw pursuant to an initial regular permit, this subchapter applies year-round, regardless of whether a demand management or critical period is in effect.

(b) Except where expressly provided otherwise, ~~T~~this subchapter applies to the following persons or entities that withdraw or beneficially use groundwater from the Aquifer:

. . .

§ 715.204 Authorized Withdrawals; ~~Demand Management and Critical Period~~Quarterly Withdrawal Schedules

(a) During a demand management or critical period, groundwater from the Aquifer may be withdrawn only if:

. . .

(2) the groundwater is scheduled for withdrawal during the applicable quarter in a ~~demand management and critical period~~quarterly withdrawal schedule required to be filed with the Authority as provided in this section; ~~and~~

(3) the groundwater is withdrawn at no more than the applicable reduced rate mandated by § 715.218 (Interruption of Withdrawals During Demand Management and Critical Periods) of this chapter (the Adjusted Quarterly Withdrawal Amount)~~.~~; and

(4) for holders of initial regular permits, with respect to the portion of the total permit amount that is classified as an Interruptible withdrawal amount pursuant to § 711.176(b)(6) of the Authority's rules, there is no applicable Notice of Cessation in effect pursuant to §§ 715.211 or 715.2111 of the Authority's rules.

(b) For those authorized to withdraw pursuant to interim authorization status or pursuant to a groundwater withdrawal permit other than an initial regular permit, and for those authorized to withdraw pursuant to an initial regular permit that does not include any Interruptible portion, t~~T~~he volume of groundwater that may be withdrawn ~~by a permitted user, interim authorization user, or contractual user who directly withdraws groundwater from the~~ Aquifer ~~at an authorized point of withdrawal owned or operated by the contractual user based on a transfer of a groundwater withdrawal permit or interim authorization status,~~ from the Aquifer during a demand management or critical period~~,~~ for a quarter is the Quarterly Scheduled Withdrawal Amount ~~as required to be established under this section~~ adjusted by the interruption coefficient as determined by § 715.218 (Interruption of Withdrawals During Demand Management and Critical Periods) of this chapter. For those authorized to withdraw pursuant to an initial regular permit that includes an Interruptible portion, the volume of groundwater that may be withdrawn from the Aquifer during a demand management or critical period for a quarter is the Uninterruptible Quarterly Scheduled Withdrawal Amount adjusted by the interruption coefficient as determined by § 715.218 (Interruption of Withdrawals During Demand Management and Critical Periods) of this chapter.

(c) Each permitted user, interim authorization user, and contractual user who directly withdraws groundwater from the Aquifer at an authorized point of withdrawal owned or operated by the contractual user based on a transfer of a groundwater withdrawal permit or interim authorization status, shall file with the Authority a ~~demand management and critical period~~quarterly withdrawal schedule on a form to be provided by the Authority as follows:

(1) for municipal and industrial users, the quarterly withdrawal schedule shall be filed for a given year not later than 4:30 p.m. of the last business day on or before December 1 of ~~each~~the previous year; and

(2) for irrigation users, the quarterly withdrawal schedule shall be filed for a given year not later than 4:30 p.m. of the last business day on or before February 1 of ~~each~~ that year.

(d) The quarterly withdrawal schedule shall include the following information:

(1) the Initial Regular Permit application number or permit number for each groundwater withdrawal permit applied for or owned by the person or entity filing the quarterly withdrawal schedule, ~~and~~ the total volume of groundwater authorized to be withdrawn thereunder, and, for holders of initial regular permits, the portion, if any, of the total volume of groundwater authorized to be withdrawn that is classified as an Interruptible withdrawal right pursuant to § 711.176(b)(6) of the Authority's rules;

(2) the Initial Regular Permit Application number or groundwater withdrawal permit number for which the person or entity filing the withdrawal schedule is the transferee, including the effective date of the transfer, the pool from which the transfer was made, ~~and~~ the total volume of groundwater authorized to be withdrawn pursuant to the transfer, and, for transferees of initial regular permits, the portion, if any, of the total volume of groundwater

authorized to be withdrawn that is classified as an Interruptible withdrawal right pursuant to § 711.176(b)(6) of the Authority's rules;

. . .

(e) For a holder of an initial regular permit that qualifies for an Interruptible withdrawal amount pursuant to § 711.176(b)(6), the Quarterly Scheduled Withdrawal Amounts identified by the permit holder for each quarter pursuant to subsection (d)(3), above, shall, by the Authority, be automatically allocated between the permit holder's Interruptible and Uninterruptible groundwater withdrawal amounts in the same proportion as the Interruptible and Uninterruptible amounts authorized in the permit, and the permit holder may not withdraw more than the quarterly amount allocated for either Interruptible or Uninterruptible withdrawals in any quarter.

[Example: Smith holds a 400 acre-feet initial regular permit, of which 360 acre-feet are classified as Uninterruptible and 40 acre-feet are classified as Interruptible. Smith submits a quarterly withdrawal schedule with the following Quarterly Scheduled Withdrawal Amounts:

Quarter 1 – 50 acre-feet;

Quarter 2 – 150 acre-feet;

Quarter 3 – 150 acre-feet; and

Quarter 4 – 50 acre-feet.

During each quarter, Smith will be unable to withdraw more than the following amounts in each category:

Quarter 1 – 45 acre-feet in Uninterruptible withdrawals and 5 acre-feet in Interruptible withdrawals;

Quarter 2 – 135 acre-feet in Uninterruptible withdrawals and 15 acre-feet in Interruptible withdrawals;

Quarter 3 – 135 acre-feet in Uninterruptible withdrawals and 15 acre-feet in Interruptible withdrawals; and

Quarter 4 – 45 acre-feet in Uninterruptible withdrawals and 5 acre-feet in Interruptible withdrawals.]

(~~e~~f) A quarterly withdrawal schedule generally may not be amended. However, a quarterly withdrawal schedule may be amended ~~when a demand management or critical period is in effect unless~~ when the following conditions are met:

(1) a demand management or critical period is in effect;

(2) during a quarter in which a demand management or critical period is in effect, the person seeking to amend his ~~demand management and critical period~~quarterly withdrawal schedule is the recipient (transferee) of an intra-pool transfer of groundwater;

(~~2~~3) at the time of the transfer, the groundwater withdrawal right transferred is authorized to be withdrawn by the transferor during the quarter in which the transfer occurs pursuant to the transferor's ~~demand management and critical period~~quarterly withdrawal schedule; and

(~~3~~4) the transferor's ~~demand management and critical period~~quarterly withdrawal schedule is also amended to reduce his authorized withdrawal amount by the amount of the transfer.

§ 715.206 Transfers

A permitted user, interim authorization status user, or contractual user may, during a demand management or critical period, withdraw groundwater from the Aquifer pursuant to a transfer of a groundwater withdrawal permit or interim authorization status only under the following circumstances:

(1) if the transfer is an inter-pool transfer, the transfer was approved in accordance with § 711.358 (Effective Date of Transfers) of the Authority's rules on or before December 1 of the year immediately preceding the year in which the demand management or critical period ~~was~~ is in effect, and the groundwater was scheduled for withdrawal in a quarterly withdrawal schedule pursuant to § 715.204 (Authorized Withdrawals; ~~Demand Management and Critical Period~~Quarterly Withdrawal Schedules); or

(2) if the transfer is an intra-pool transfer and the groundwater was scheduled by the transferor for withdrawal in the same quarter in a quarterly withdrawal schedule pursuant to § 715.204 (Authorized Withdrawals; ~~Demand Management and Critical Period~~ Quarterly Withdrawal Schedules).

§ 715.208 Groundwater Carryforwards Generally Prohibited; Irrigation Carryforwards

. . .

(c) Scheduled groundwater not actually withdrawn during a quarter may be withdrawn later in the same year:

(1) for Interruptible withdrawals, when there is no applicable Notice of Cessation in effect pursuant to §§ 715.211 or 715.2111 of the Authority's rules; and

(2) for Uninterruptible withdrawals, if the withdrawals occur during a period of the year when no demand management or critical period is in effect under §§ 715.212 or 715.216 of the Authority's rules.

§ 715.210 Monthly and Quarterly Groundwater Withdrawal Reports

(a) At any time when a demand management or critical period is in effect, ~~E~~each permitted user, interim authorization user, and contractual user who directly withdraws groundwater from the Aquifer at an authorized point of withdrawal owned or operated by the contractual user based on a transfer of a groundwater withdrawal permit or interim authorization status, must file monthly groundwater withdrawal reports with the Authority containing withdrawal data in weekly increments ~~when a demand management or critical period is in effect~~. These monthly reports must be filed on the form prescribed by the Authority and contain the following information:

. . .

(b) Those authorized to withdraw pursuant to initial regular permits must, every quarter, file quarterly groundwater withdrawal reports with the Authority containing withdrawal data in quarterly increments. This obligation to file quarterly reports applies regardless of whether a demand management or critical period is in effect. These quarterly reports must be filed on the form prescribed by the Authority and contain the following information:

(1) the person's name, address, and telephone number;

(2) contact person and title;

(3) the reporting quarter;

(4) the total volume of groundwater withdrawn during the reporting quarter pursuant to Interruptible withdrawal rights, if any;

(5) the total volume of groundwater withdrawn during the reporting quarter pursuant to Uninterruptible withdrawal rights; and

(6) any other information requested by the general manager.

(~~b~~c) Monthly groundwater withdrawal reports must be filed with the Authority no later than ten business days after the end of the reported month ~~in which the week occ~~Uninterruptible Rights.

(d) Quarterly groundwater withdrawal reports must be filed with the Authority no later than ten business days after the end of the reported quarter.

§ 715.211 Cessation and Resumption of Interruptible Withdrawal Rights in the San Antonio Pool

This section shall only remain in effect through December 31, 2007. The holder of an initial regular permit that identifies a well or wells in the San Antonio Pool may generally withdraw the portion of that permit that is classified as an Interruptible withdrawal amount pursuant to § 711.176(b)(6), if any, when the water level of the Aquifer as measured at well J-17 is greater than 665 feet above msl, subject to the following and the other limitations in this subchapter:

(a) If, at 8:00 a.m. on any day during the calendar year, the level of the Aquifer in the San Antonio Pool drops to equal to or less than 665 feet above msl as measured at well J-17, the general manager shall issue a notice of cessation of Interruptible withdrawal rights ("Notice of Cessation – San Antonio Pool"). All withdrawal of Interruptible Rights in the San Antonio Pool shall cease by midnight of the 7th day after general manager's issuance of the Notice of Cessation – San Antonio Pool. Additional Notices of Cessation – San Antonio Pool need not be issued while a Notice of Cessation – San Antonio Pool remains in effect. Copies of the Notice of Cessation – San Antonio Pool shall be:

(1) immediately posted on the Authority's internet site;

(2) published, as soon as is possible, in a newspaper of general circulation throughout the Authority's jurisdiction; and

(3) published in at least three other newspapers within the San Antonio Pool jurisdiction of the Authority.

(b) If a Notice of Cessation – San Antonio Pool is then in effect, the general manager shall cancel the Notice of Cessation by issuing a notice of resumption of Interruptible withdrawal rights ("Notice of Resumption – San Antonio Pool") if, at 8:00 a.m., the level of the Aquifer in the San Antonio Pool rises to greater than 665 feet above msl as measured at well J-17. Interruptible withdrawal rights in the San Antonio Pool may resume at midnight on the 7th day after issuance by the general manager of the Notice of Resumption – San Antonio Pool. Copies of the Notice of Resumption – San Antonio Pool shall be:

(1) immediately posted on the Authority's internet site;

(2) published, as soon as is possible, in a newspaper of general circulation throughout the Authority's jurisdiction; and

(3) published in at least three other newspapers within the San Antonio Pool jurisdiction of the Authority.

§ 715.2111 Cessation and Resumption of Interruptible Withdrawal Rights in the Uvalde Pool

This section shall only remain in effect through December 31, 2007. The holder of an initial regular permit that identifies a well or wells in the Uvalde Pool may generally withdraw the portion of that permit that is classified as an Interruptible withdrawal amount pursuant to § 711.176(b)(6), if any, when the water level of the Aquifer as measured at well J-27 is greater than 865 feet above msl, subject to the following and the other limitations in this subchapter:

(a) If, at 8:00 a.m. on any day during the calendar year, the level of the Aquifer in the Uvalde Pool drops to equal to or less than 865 feet above msl as measured at well J-27, the general manager shall issue a notice of cessation of Interruptible withdrawal rights ("Notice of

Cessation – Uvalde Pool"). All withdrawal of Interruptible Rights in the Uvalde Pool shall cease by midnight of the 7th day after general manager's issuance of the Notice of Cessation – Uvalde Pool. Additional Notices of Cessation – Uvalde Pool need not be issued while a Notice of Cessation – Uvalde Pool remains in effect. Copies of the Notice of Cessation – Uvalde Pool shall be:

(1) immediately posted on the Authority's internet site;

(2) published, as soon as is possible, in a newspaper of general circulation throughout the Authority's jurisdiction; and

(3) published in at least one newspaper within the Uvalde Pool jurisdiction of the Authority.

(b) If a Notice of Cessation – Uvalde Pool is then in effect, the general manager shall cancel the Notice of Cessation by issuing a notice of resumption of Interruptible withdrawal rights ("Notice of Resumption – Uvalde Pool") if, at 8:00 a.m., the level of the Aquifer in the Uvalde Pool rises to greater than 865 feet above msl as measured at well J-27. Interruptible withdrawal rights in the Uvalde Pool may resume at midnight on the 7th day after issuance by the general manager of the Notice of Resumption – Uvalde Pool. Copies of the Notice of Resumption – Uvalde Pool shall be:

(1) immediately posted on the Authority's internet site;

(2) published, as soon as is possible, in a newspaper of general circulation throughout the Authority's jurisdiction; and

(3) published in at least one newspaper within the Uvalde Pool jurisdiction of the Authority.

§ 715.2112 Withdrawal of Interruptible Rights

A holder of an initial regular permit, a portion of which is classified as an Interruptible withdrawal amount pursuant to § 711.176(b)(6) of the Authority's rules, may only withdraw the Interruptible amount at times when there is no applicable Notice of Cessation in effect pursuant to §§ 715.211 or 715.2111 of the Authority's rules as follows:

(a) If no Notice of Cessation is in effect for an entire quarter, then the permit holder may withdraw up to the holder's entire Interruptible Quarterly Scheduled Withdrawal Amount for that quarter.

(b) If a Notice of Cessation is in effect for an entire quarter, then the permit holder may not withdraw any of the holder's Interruptible Quarterly Scheduled Withdrawal Amount for that quarter.

(c) If a Notice of Cessation is in effect for less than an entire quarter, then the permit hold may withdraw a portion of the permit holder's Interruptible Quarterly Scheduled Withdrawal Amount for that quarter (the "Adjusted Interruptible Quarterly Scheduled Withdrawal Amount"), calculated as follows:

Adjusted Interruptible Quarterly Withdrawal Amount = Interruptible Quarterly Scheduled Withdrawal Amount x (1 - (number of days during quarter when Notice of Cessation is in effect / number of days in quarter))

. . .

§ 715.218 Interruption of Withdrawals During Demand Management and Critical Periods

(a) The interruption coefficients to be applied during a demand management or critical period to the Quarterly Scheduled Withdrawal Amounts or the Uninterruptible Quarterly Scheduled Withdrawal Amounts, whichever is applicable, ~~required to be scheduled~~ pursuant to ~~§ 715.204 (Authorized Withdrawals; Demand Management and Critical Period Withdrawal Schedules)~~ are as follows:

PERIOD	USER	~~= 500,000 AF/ANNUM CAP INTERRUPTION COEFFICIENT~~	450,000 AF/ANNUM CAP INTERRUPTION COEFFICIENT	400,000 AF/ANNUM CAP INTERRUPTION COEFFICIENT
Stage I Demand Management	Permitted users, interim authorization users, and contractual users, other than groundwater use for crop irrigation	~~0.10~~	0.05	0.05
	Permitted users, interim authorization users, and contractual users, with groundwater use for crop irrigation	~~0.00~~	0.00	0.00
	Owners of exempt wells	~~0.00~~	0.00	0.00
Stage II Demand Management	Permitted users, interim authorization users, and contractual users, other than groundwater use for crop irrigation	~~0.15~~	0.10	0.10
	Permitted users, interim authorization users, and contractual users, with groundwater use for crop irrigation	~~0.00~~	0.00	0.00
	Owners of exempt wells	~~0.00~~	0.00	0.00
Stage III Critical Period	Permitted users, interim authorization users, and contractual users, other than groundwater use for crop irrigation	~~0.20~~	0.15	0.15
	Permitted users, interim authorization users, and contractual users, with groundwater use for crop irrigation	~~0.20~~	0.15	0.15
	Owners of exempt wells	~~0.00~~	0.00	0.00
Stage IV Critical Period	Permitted users, interim authorization users, and contractual users, other than groundwater use for crop irrigation	~~0.30~~	~~Effective January 1, 2004:~~ 0.23	N/A

PERIOD	USER	~~= 500,000 AF/ANNUM CAP INTERRUPTION COEFFICIENT~~	450,000 AF/ANNUM CAP INTERRUPTION COEFFICIENT	400,000 AF/ANNUM CAP INTERRUPTION COEFFICIENT
	Permitted users, interim authorization users, and contractual users, with groundwater use for crop irrigation	~~0.30~~	~~Effective January 1, 2004:~~ 0.23	N/A
	Owners of exempt wells	~~0.00~~	0.00	N/A

(b) If one demand management or critical period is effective for an entire quarter, a user's Adjusted Quarterly Withdrawal Amount for that quarter shall be calculated as follows:

Adjusted Quarterly Withdrawal Amount = Quarterly Scheduled Withdrawal Amount (or Uninterruptible Quarterly Scheduled Withdrawal Amount, if applicable) x (1 - Interruption Coefficient)

(c) If a demand management or critical period is effective for less than an entire quarter and no demand management or critical period is effective for the remainder of the quarter, a user's Adjusted Quarterly Withdrawal Amount for that quarter shall be calculated as follows:

Adjusted Quarterly Withdrawal Amount = Quarterly Scheduled Withdrawal Amount (or Uninterruptible Quarterly Scheduled Withdrawal Amount, if applicable) x (1 - (Interruption Coefficient x (number of days in stage / number of days in quarter)))

(d) If two or more different demand management or critical periods are effective during a quarter, a user's Adjusted Quarterly Withdrawal Amount for that quarter shall be calculated as follows, using two or more interruption coefficients, as appropriate:

Adjusted Quarterly Withdrawal Amount = Quarterly Scheduled Withdrawal Amount (or Uninterruptible Quarterly Scheduled Withdrawal Amount, if applicable) x (1 – (Interruption Coefficient$_x$ x (number of days in stage x / number of days in quarter)) + (Interruption Coefficient$_y$ x (number of days in stage y / number of days in quarter)))

5.10 CUMULATIVE EFFECTS

Based on the analysis contained in this assessment, it is probable that the fixed proportionality established between withdrawal of Interruptible and Uninterruptible Rights will result in a substantial devaluation of Interruptible Rights available under initial regular permits to buyers and sellers of surplus water. It is likely that the linkage of Interruptible and Uninterruptible Rights will reduce the number and volume of transfers on both intra-pool and

inter-pool transactions. From a purely economic perspective, the proposed linkage of the two types of water rights under initial regular permits may prevent the development of a market and a determination of price for separate Interruptible Rights. A price for the combined rights cannot be determined until they enter the market place pursuant to final adoption of the Proposed Implementation Rules. Ultimately it should be expected that this proposed framework will nominally reduce annual withdrawals under regular permits below levels currently measured under existing rules. This, in turn, would provide a small benefit in terms of maintaining Aquifer levels, spring flows at Comal in San Marcos, and result in incremental improvements or, at least, maintenance of existing endangered species habitat. The cost of these incremental improvements will be registered in terms of marginally increased levels of regulatory activity by Authority staff. Permit holders would be responsible for additional reporting requirements added to any other record keeping responsibilities pursuant to EAA rules.

6.0 SUMMARY OF FINDINGS

The Chapter 711 Final Rules adopted the concept of Interruptible Rights, and the Proposed Implementation Rules add provisions that are necessary to implement, manage, track and monitor the transfer and withdrawal of those Interruptible Rights. The Proposed Implementation Rules result in impacts to the Authority, to the regulated community, and to the Aquifer, springflows, and Aquifer-related endangered species. This Rules Assessment revisited assumptions made in the December 2003 Rules Assessment.

The Final Rules assessed in December 2003 did not explicitly state whether or not Interruptible and Uninterruptible Rights could be severed and utilized or transferred separately. The December 2003 Rules Assessment assumed the rights could be utilized or transferred separately in order to estimate a maximum potential market value for Interruptible Rights. The conclusions drawn herein are intended to clarify how impacts would differ from those stated in the December 2003 Rules Assessment subsequent to EAA's clarifications and articulations in the Proposed Implementation Rules (rather than as a result of any policy change by EAA). Impacts on the regulated community of the Proposed Implementation Rules would include: (1) the prohibition of the separate lease or sale of Interruptible Rights, as the Proposed Implementation Rules would require that all transfers of rights must be in a fixed proportion of Uninterruptible and Interruptible Rights; (2) the loss of the ability to exclusively withdraw Interruptible Rights in the early part of a year in which the Aquifer is above the index well trigger levels; and (3) as a result of the reduced utility and flexibility in the use of Interruptible Rights implied by (1) and (2) above, the potential value of these rights to the regulated community would likely be less than that estimated in the December 2003 Rules Assessment of the Chapter 711 Final Rules. These Proposed Implementation Rules would have a particularly negative impact on the cost of Aquifer storage and recovery (ASR) projects by greatly limiting the ability of ASR sponsors to buy or lease relatively less expensive Interruptible Rights separately from more expensive Uninterruptible Rights.

Impacts on the Aquifer and Aquifer-related resources from the clarifications in the Proposed Implementation Rules would include a lesser degree of probability of Aquifer withdrawals of Uninterruptible and Interruptible Rights compared to the withdrawals anticipated in the December 2003 Rules Assessment – a benefit for Aquifer levels, springflows and Aquifer-related endangered species. The mandatory proportional withdrawal of Interruptible and Uninterruptible Rights would mean that only in those years in which the Aquifer level remained above the index well trigger levels for the entire year could permittees withdraw all of their Interruptible and Uninterruptible Rights (assuming withdrawals did not cause index wells to drop

below trigger levels). Between 1980 and 2003, index well J-17 remained above 665 feet msl for the whole year in 1981, 1987, 1993, and 2003. Between 1980 and 2003, index well J-27 remained above 865 msl for all years except 1985, 1991, and 1997 and some Interruptible Rights could be withdrawn for part of each of those years. An additional report by the South Central Texas Water Advisory Committee (2000) determined through modeling that term permits would be available for withdrawal some of the time even with other regulatory controls in place to protect springflows.

Several sections of the Proposed Implementation Rules deal specifically with concerns raised in response to the Chapter 711 Final Rules and the lack of specificity about record keeping for Interruptible Rights. Combined Interruptible/Uninterruptible Rights lend more predictability to withdrawal scheduling and reporting. Reporting requirements specify that reporting forms should show withdrawals for the entire year and month-to-month broken down by Uninterruptible and Interruptible Rights withdrawals. These same breakdowns should be reflected on the Quarterly Scheduled Withdrawal Amount forms, for those permit holders with Interruptible Rights. This is not a new requirement to submit a schedule, but for additional information to be portrayed on that schedule. The required reporting on quarterly withdrawals applies to all initial regular permit holders year-round. This does increase the "paperwork" requirements for permit holders, with a greater negative effect on smaller businesses and farms. Interruptible Rights can only be withdrawn if a Notice of Cessation is not in effect. The additional notification requirements will have the greatest effect on the Authority, who will have to receive, monitor, and process these reports, but they will also add a fairly large amount of paperwork to permittees preparing these reports.

As the effects of the Proposed Implementation Rules become apparent it may become necessary to provide more regulatory and administrative definition for purposes of monitoring compliance. This requirement may create the need for additional staff beyond the two identified in the Strategic Plan. In the event the Proposed Implementation Rules are adopted as Final Rules, it would be prudent to update the Strategic Plan to reflect these changes.

There are two basic areas of concern in the context of intergovernmental issues. The first is the potential for reducing the cost-effectiveness of large-scale municipal water storage projects by linking Interruptible and Uninterruptible Rights compared to the assumptions in the 2003 Rules Assessment. The second and related concern is the apparent difficulty agricultural users will encounter when they attempt to sell surplus water to public entities, given the linkage of Interruptible and Uninterruptible Rights.

The key change in these Proposed Implementation Rules for carrying out the Final Chapter 711 Final Rules is the mandatory proportionality of Uninterruptible and Interruptible Rights with respect to their transfer and withdrawal. Assumptions made in the December 2003 Rules Assessment that Interruptible Rights could be transferred and withdrawn separately would no longer be valid if these Proposed Rules are adopted by the Authority. The requirement of fixed proportionality between Uninterruptible and Interruptible Rights would, if adopted: (1) substantially reduce the utility and flexibility of Interruptible Rights withdrawals under regular permits; (2) preclude the development of a market (and therefore a determination of price) for separate Interruptible Rights; (3) slightly increase the regulatory burden on the Authority and the regulated community (the increased regulatory burden would probably be less, however, than if Interruptible Rights were to remain separate) ; (4) likely reduce total annual withdrawals under regular permits below the potential withdrawal level under existing rules; and (5) provide a modest benefit to Aquifer levels, springflows and endangered species habitat as a result of these reduced withdrawals.

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APPENDIX A

PROPOSED IMPLEMENTATION RULES:

CHAPTER 702 (GENERAL DEFINITIONS);
CHAPTER 709 (FEES), SUBCHAPTER D (AQUIFER MANAGEMENT FEES);
CHAPTER 711 (GROUNDWATER WITHDRAWALS), SUBCHAPTERS E (GROUNDWATER WITHDRAWAL PERMITS), F (STANDARD GROUNDWATER WITHDRAWAL CONDITIONS), G (GROUNDWATER AVAILABLE FOR PERMITTING; PROPORTIONAL ADJUSTMENT; EQUAL PERCENTAGE REDUCTION), L (TRANSFERS), AND M (METERS; ALTERNATIVE MEASURING METHODS; AND REPORTING)
CHAPTER 715 (COMPREHENSIVE WATER MANAGEMENT PLAN IMPLEMENTATION), SUBCHAPTERS A (DEFINITIONS) AND D (DEMAND MANAGEMENT AND CRITICAL PERIOD MANAGEMENT RULES)

EDWARDS AQUIFER AUTHORITY
RULEMAKING

Title: **EDWARDS AQUIFER AUTHORITY RULES**

Ch. 702 (General Definitions)

Ch. 709 (Fees), Subchapter D (Aquifer Management Fees)

Ch. 711 (Groundwater Withdrawals), Subchapters E (Groundwater Withdrawal Permits), F (Standard Groundwater Withdrawal Conditions), G (Groundwater Available for Permitting; Proportional Adjustment; Equal Percentage Reduction), L (Transfers), and M (Meters; Alternative Measuring Methods; and Reporting)

Ch. 715 (Comprehensive Water Management Plan Implementation), Subchapters A (Definitions) and D (Demand Management and Critical Period Management Rules)

Rule Type: **Proposed Implementation Rules (PRs)**

Prepared By: Darcy Alan Frownfelter, General Counsel
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Approved By: Gregory M. Ellis, General Manager

Date Prepared: May 12, 2004

Effective Date: _____ __, 200_
Board approves FRs: _____ __, 200_
Permits Committee approves FRs: _____ __, 200_
GM approves FRs: _____ __, 200_
Public Hearing on PRs: _____ __, 200_
GM determines: Assessment needed: May 12, 2004
Board approves PRs: May 11, 2004 (sent to GM for assessment and public comment)
Permits Committee approves PRs: Apr. 27, 2004
GM approves PRs: Apr. 22, 2004

CHAPTER 702. GENERAL DEFINITIONS

Section

§ 702.1 General Definitions

. . .

(b) The following words and terms, when used in any rule of the Authority, shall have the following meanings, unless the context clearly indicates otherwise:

. . .

~~(34) Interruptible - When referring to a groundwater withdrawal permit, the conditioning of the right to withdraw groundwater from the Aquifer that makes the right subject to complete cessation, temporary curtailment, or reduction of the amount of groundwater that may be withdrawn from the Aquifer based upon the measurement of a water level at an index well, or as otherwise required by Chapter 715 of the Authority's rules (Comprehensive Water Management Plan Implementation).~~

. . .

NOTE: Following definitions to be renumbered as necessary.

CHAPTER 709. FEES

Subchapter D. Aquifer Management Fees

Section

. . .

. . .

§ 709.19 Adoption and Assessment

(a) Not later than December 31st of each year, the general manager shall, pursuant to this subchapter, calculate and assess an Aquifer management fee for the succeeding year.

. . .

(f) Aquifer management fees shall be assessed without regard to whether groundwater withdrawals are Interruptible or Uninterruptible pursuant to § 711.174 (Equal Percentage Reduction of initial regular permits) and § 711.176(b)(6) (Groundwater Withdrawal Amounts for initial regular permits; Interruptible Withdrawals of Phase-2 Proportional Amounts) of the Authority's rules.

§ 709.21 Billing and Collection

(a) All persons authorized for Aquifer use under interim authorization status pursuant to § 1.17 of the Act and the rules of the Authority, or under a final groundwater withdrawal permit issued by the board, and all unauthorized users of the Aquifer, are required to pay to the Authority an Aquifer management fee as assessed pursuant to this subchapter.

. . .

(i) The general manager shall bill and collect Aquifer management fees under this section without any distinction between groundwater withdrawal permit rights classified as Interruptible or Uninterruptible pursuant to § 711.164 (Groundwater Available for Permitted Withdrawals for Initial and Additional Regular Permits) and § 711.176(b)(6) (Groundwater Withdrawal Amounts for initial regular permits; Interruptible Withdrawals of Phase-2 Proportional Amounts) of the Authority's rules.

. . .

§ 709.25 User Contracts

In order to encourage water conservation, the general manager may contract with any non-agricultural user for the user to commit to Aquifer use less than an amount to which the user would otherwise be authorized, as follows:

(a) Except as otherwise set forth in subsection (b) below, not later than September 30th of the year preceding the calendar year for which a user contract will be effective, the general manager may contract with any non-agricultural user for the user to commit to Aquifer use less than an amount to which the user would otherwise be authorized. The Authority shall assess Aquifer management fees for the reduced amount of contracted Aquifer use. Aquifer management fees under this subsection shall be assessed without any distinction between groundwater withdrawal permit rights classified as Interruptible or Uninterruptible pursuant to § 711.164 (Groundwater Available for Permitted Withdrawals for Initial and Additional Regular Permits) and § 711.176(b)(6) (Groundwater Withdrawal Amounts for initial regular permits; Interruptible Withdrawals of Phase-2 Proportional Amounts) of the Authority's rules. A user contract shall be effective on a calendar year basis and may not have a term of greater than a one-year period.

(b) For any non-agricultural user who, through a transfer approved by the Authority, obtains interim authorization status or a final groundwater withdrawal permit, the general manager may, within 30 days of the date the transfer is approved, contract with such user for the user to commit to Aquifer use less than an amount to which the user would otherwise be authorized during the year in which the transfer is approved. Such a user contract shall terminate at the end of the year in which the transfer was approved and the contract was executed. If the transfer is approved later than September 30 in a given year, the general manager may, within 30 days of the date the transfer is approved, enter into a similar contract with the user for the subsequent calendar year. The Authority shall assess Aquifer management fees for the reduced amount of contracted Aquifer use. Aquifer management fees under this subsection shall be assessed without any distinction between groundwater withdrawal permit rights classified as Interruptible or Uninterruptible pursuant to § 711.164 (Groundwater Available for Permitted Withdrawals for Initial and Additional Regular Permits) and § 711.176(b)(6) (Groundwater Withdrawal Amounts for initial regular permits; Interruptible Withdrawals of Phase-2 Proportional Amounts) of the Authority's rules.

(c) In calculating the amount of groundwater withdrawal permit rights which is contracted for under this section, the Authority shall allocate all groundwater withdrawal permit rights contracted for as Interruptible and Uninterruptible in the same proportion as the Interruptible and Uninterruptible amounts authorized in the initial regular permit pursuant to § 711.176(b)(6) of this chapter (Groundwater Withdrawal Amounts for initial regular permits; Interruptible Withdrawals of Phase-2 Proportional Amounts).

(d) The Authority shall not approve a user contract which does not allocate the water contracted for as Interruptible and Uninterruptible in the same proportion as the Interruptible and Uninterruptible amounts authorized in the initial regular permit pursuant to § 711.176(b)(6) of this chapter (Groundwater Withdrawal Amounts for initial regular permits; Interruptible Withdrawals of Phase-2 Proportional Amounts).

CHAPTER 711. GROUNDWATER WITHDRAWALS

Subchapter E. Groundwater Withdrawal Permits

Section

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§ 711.98 initial regular permits

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(i) ~~If in effect, i~~initial regular permits may be interrupted ~~in accordance with the following rules:~~

~~(1) the demand management and critical period management rules~~ pursuant to § 711.176(b)(6) (Groundwater Withdrawal Amounts for initial regular permits; Interruptible Withdrawals of Phase-2 Proportional Amounts) and subchapter D (Interruptible Withdrawals; Demand Management and Critical Period Management Rules) of chapter 715 ~~of the Authority's rules~~ (Comprehensive Water Management Plan Implementation).

§ 711.100 Additional Regular Permits

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(g) ~~If in effect, a~~Additional regular permits may be interrupted ~~in accordance with the demand management and critical period management rules~~ pursuant to subchapter D (Interruptible Withdrawals; Demand Management and Critical Period Management Rules) of chapter 715 ~~of the Authority's rules~~ (Comprehensive Water Management Plan Implementation).

§ 711.102 Term Permits

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(d) ~~If in effect, t~~Term permits shall be interrupted in accordance with the following Aquifer conditions ~~rules~~:

(1) for wells completed in the San Antonio Pool, the level of the Aquifer ~~for the San Antonio Pool~~ is equal to or less than 665 feet above msl as measured at well J-17; and

(2) for wells completed in the Uvalde Pool, the level of the Aquifer ~~for the Uvalde Pool~~ is equal to or less than 865 feet above msl as measured at well J-27~~; or~~

~~(3) the demand management and critical period management rules~~ pursuant to ~~subchapter D (Demand Management and Critical Period Management Rules) of chapter 715 of the Authority's rules (Comprehensive Water Management Plan Implementation)~~.

. . .

(h) By January 15, 2008, and by January 15 of each year thereafter, the board by order shall determine the total quantity of groundwater that may be withdrawn from each pool of the Aquifer for that calendar year pursuant to term permits. At any time by order of the board this determination may be revised as appropriate based upon actual Aquifer conditions to be consistent with chapter 715 of the Authority's rules (Comprehensive Water Management Plan Implementation). The Board shall not authorize the issuance of any term permits at any time prior to January 15, 2008.

Subchapter F. Standard Groundwater Withdrawal Permit Conditions

Section

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§ 711.134 Standard Conditions

Any groundwater withdrawal permit issued by the Authority is subject to and the permittee shall comply with the following conditions:

. . .

(10) the interruption of the right to withdraw and beneficially use groundwater from the Aquifer pursuant to subchapter D (Interruptible Withdrawals; Demand Management and Critical Period Management Rules) of chapter 715 of the Authority's rules (Comprehensive Water Management Plan Implementation);

Subchapter G. Groundwater Available for Permitting; Proportional Adjustment; Equal Percentage Reduction

Section

§ 711.164 Groundwater Available for Permitted Withdrawals for Initial and Additional Regular Permits

(a) Except as provided by subsection (c), unless increased pursuant to § 1.14(d) of the Act and Subchapter K of this chapter (Additional Groundwater Supplies), the amount of groundwater from the Aquifer that the board may permit to be withdrawn on an Uninterruptible basis pursuant to initial regular permits, and additional regular permits for the period from the effective date of these rules through December 31, 2007, shall not exceed 450,000 acre-feet for each calendar year under the following Aquifer conditions:

(1) for wells completed in the San Antonio Pool, whenever the water level of the Aquifer as measured at well J-17 is equal to or greater than 650 feet above msl;

(2) for wells completed in the Uvalde Pool, whenever the water level of the Aquifer as measured at well J-27 is equal to or greater than 845 feet above msl.

Such withdrawals shall be subject to the requirements, limitations, and possible interruptions imposed by subchapter D (Interruptible Withdrawals; Demand Management and Critical Period Management Rules) of chapter 715 of the Authority's rules (Comprehensive Water Management Plan Implementation).

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§ 711.172 Proportional Adjustment of initial regular permits

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(d) Proportionality. An adjustment is proportional when the ~~adjustment of the maximum historical use of an~~ initial ~~regular permit maintains a constant ratio in relation to the adjustment of the maximum historical use of all other permits~~Phase-1 and Phase-2 Proportional Adjustment Factors, if used, are applied uniformly pursuant to subsection (g).

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§ 711.176 Groundwater Withdrawal Amounts for initial regular permits; Interruptible Withdrawals of Phase-2 Proportional Amounts

. . .

(b) If the aggregate maximum historical use of all applicants to be issued initial regular permits exceeds the amount of groundwater available for permitting in § 711.164(a) of this chapter (Groundwater Available for Permitted Withdrawals for Initial and Additional Regular Permits), then an applicant shall receive an ~~i~~Initial ~~r~~Regular ~~p~~Permit authorizing the withdrawal of groundwater from the Aquifer in the following amount):

. . .

(6) if the applicant qualifies for an irrigator or historical average minimum, a PA-2 amount is calculated pursuant to § 711.172(g)(7) and (8) of this chapter (Proportional Adjustment of initial regular permits), and the applicant's irrigator or historical average minimum (or where an irrigator applicant qualifies for both minimums, the greater of the two) is greater than the applicant's PA-2 amount, then in an amount equal to the applicant's PA-2 amount. In such a case, the difference, in acre-feet, between the applicant's PA-2 amount and the applicable minimum may, through December 31, 2007, be withdrawn on an Interruptible basis by the applicant only under the following Aquifer conditions:

(A) for wells in the San Antonio Pool, whenever the water level of the Aquifer as measured at well J-17 is greater than 665 feet above msl, pursuant to the requirements and limitations contained in subchapter D (Interruptible Withdrawals; Demand Management and Critical Period Management Rules) of chapter 715 of the Authority's rules (Comprehensive Water Management Plan Implementation); or

(B) for wells in the Uvalde Pool, whenever the water level of the Aquifer as measured at well J-27 is greater than 865 feet above msl, pursuant to the requirements and limitations contained in subchapter D (Interruptible Withdrawals; Demand Management and Critical Period Management Rules) of chapter 715 of the Authority's rules (Comprehensive Water Management Plan Implementation).

Subchapter L. Transfers

Section

§ 711.320 Definitions

The following words and terms, when used in this subchapter, shall have the following meanings, unless the context clearly indicates otherwise:

. . .

(2) groundwater withdrawal amount - The amount of groundwater from the Aquifer, in acre-feet per annum, which is authorized to be withdrawn under an initial regular permit issued by the board, or pursuant to interim authorization status, under § 711.70 of this chapter (Interim Authorization Groundwater Withdrawal Amounts).

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§ 711.340 Conversion of Base Irrigation Groundwater

(a) The portion of an initial regular permit, or an application for an initial regular permit, constituting base irrigation groundwater may be converted to a regular permit, or an application, for unrestricted irrigation groundwater by filing an application to convert base irrigation groundwater consistent with § 707.428 of the Authority's rules (Applications to Convert Base Irrigation Groundwater).

(b) In calculating the portion of base irrigation groundwater of an initial regular permit subject to § 711.176(b)(6) of this chapter (Groundwater Withdrawal Amounts for initial regular permits; Interruptible Withdrawals of Phase-2 Proportional Amounts) to be converted to unrestricted irrigation groundwater, the converted groundwater withdrawal amount shall be allocated as Interruptible and Uninterruptible in the same proportion as the Interruptible and Uninterruptible amounts authorized in the initial regular permit pursuant to § 711.176(b)(6).

(c) The Authority shall allocate the amount of groundwater authorized to be withdrawn pursuant to a conversion of an initial regular subject to § 711.176(b)(6) approved prior to the effective date of these rules between Interruptible and Uninterruptible groundwater withdrawal amounts in the same proportion as the Interruptible and Uninterruptible amounts authorized in the initial regular permit pursuant to § 711.176(b)(6).

. . .

§ 711.366 Transfer of Interruptible and Uninterruptible Withdrawal Amounts

(a) In calculating the amount of groundwater authorized to be withdrawn pursuant to a transfer of an initial regular permit subject to § 711.176(b)(6) of this chapter (Groundwater Withdrawal Amounts for initial regular permits; Interruptible Withdrawals of Phase-2 Proportional Amounts), transferred groundwater withdrawal amounts shall be allocated as Interruptible and Uninterruptible in the same proportion as the Interruptible and Uninterruptible amounts authorized in the initial regular permit pursuant to § 711.176(b)(6).

(b) The Authority shall allocate the amount of groundwater authorized to be withdrawn pursuant to a transfer of an initial regular permit subject to § 711.176(b)(6) approved prior to the effective date of these rules between Interruptible and Uninterruptible groundwater withdrawal amounts in the same proportion as the Interruptible and Uninterruptible amounts authorized in the initial regular permit pursuant to § 711.176(b)(6).

(c) The Interruptible and Uninterruptible groundwater withdrawal amounts in an initial regular permit may not be transferred separately or in a proportion different from the proportion of Interruptible and Uninterruptible amounts authorized in the initial regular permit pursuant to § 711.176(b)(6).

Subchapter M. Meters; Alternative Measuring Methods; and Reporting

Section

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711.414 Meter Reading; Groundwater Use Reporting

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§ 711.414 Meter Reading; Groundwater Use Reporting

(a) Every permittee, or person with interim authorization status, shall accurately read the meter on a monthly and on an annual basis and shall file the results with the Authority by way of a written Annual Groundwater Use Report on a form prescribed by the Authority. The annual groundwater use report form prescribed by the Authority shall provide spaces to report withdrawals for both the entire year and on a month-by-month basis and, for reports submitted by holders of initial regular permits, shall provide spaces to identify Interruptible and Uninterruptible groundwater withdrawal amounts on an annual and month-by-month basis. Every permittee, or person with interim authorization status, shall assure that the Annual Groundwater Use Report reflects the withdrawals made during the preceding calendar year and shall include information on the amount of withdrawals made on both an annual and on a month-by-month basis.

CHAPTER 715. COMPREHENSIVE WATER MANAGEMENT PLAN IMPLEMENTATION

Subchapter A. Definitions

Section

§ 715.1 Definitions

The following words and terms, when used in this chapter, shall have the following meanings unless the context clearly indicates otherwise:

. . .

(25) Quarterly Scheduled Withdrawal Amount - The amount of groundwater that a person plans to and, assuming appropriate Aquifer and springflow conditions, is authorized to withdraw for each quarter, as stated in the person's ~~demand management and critical period~~quarterly withdrawal schedule filed with the Authority pursuant to subsection (c) of § 715.204 (Authorized Withdrawals; ~~Demand Management and Critical Period~~ Quarterly Withdrawal Schedules) of this chapter. For those authorized to withdraw pursuant to interim authorization status or pursuant to a groundwater withdrawal permit other than an initial regular permit, and for those authorized to withdraw pursuant to an initial regular permit that does not include any Interruptible portion, the Quarterly Scheduled Withdrawal Amount shall consist of a single number for each quarter. For those authorized to withdraw pursuant to an initial regular permit that includes an Interruptible portion, the Quarterly Scheduled Withdrawal Amount shall consist of two components, the "Interruptible Quarterly Scheduled Withdrawal Amount" and the "Uninterruptible Quarterly Scheduled Withdrawal Amount."

Subchapter D. Interruptible Withdrawals; Demand Management and Critical Period Management Rules

Section

§ 715.200 Purpose

The purpose of this subchapter is twofold: (1) to implement §§ 1.14(b) and (f), 1.16(e) and 1.19 of the Act which require the Authority to implement a permitting program while honoring the legislative intent of the Act to issue permits at the minimum levels specified while protecting the Aquifer and honoring the 450,000 acre-feet cap; and (2) to implement §§ 1.14(h), 1.25, and 1.26 of the Act, which requires that the Authority prepare and implement a management plan for critical periods and implement and enforce certain water management practices. These rules are intended to authorize the maximum aggregate withdrawals from the Aquifer from wells with groundwater withdrawal permits, interim authorization status, or exempt well status balanced against the Authority's Aquifer management strategy to slow the rate of decline of springflows in Comal or San Marcos Springs. Slowing the rate of decline of springflows will allow more time for the return of normal precipitation events resulting in the maintenance or increase of Aquifer levels which would concomitantly result in the maintenance or increase in spring levels.

§ 715.202 Applicability

(a) For those authorized to withdraw pursuant to interim authorization status or pursuant to a groundwater withdrawal permit other than an initial regular permit, t~~T~~his subchapter applies only to periods of time when a demand management period or critical period is in effect. For those authorized to withdraw pursuant to an initial regular permit, this subchapter applies year-round, regardless of whether a demand management or critical period is in effect.

(b) Except where expressly provided otherwise, ~~T~~this subchapter applies to the following persons or entities that withdraw or beneficially use groundwater from the Aquifer:
. . .

§ 715.204 Authorized Withdrawals; ~~Demand Management and Critical Period~~Quarterly Withdrawal Schedules

(a) During a demand management or critical period, groundwater from the Aquifer may be withdrawn only if:

. . .

(2) the groundwater is scheduled for withdrawal during the applicable quarter in a ~~demand management and critical period~~quarterly withdrawal schedule required to be filed with the Authority as provided in this section; ~~and~~

(3) the groundwater is withdrawn at no more than the applicable reduced rate mandated by § 715.218 (Interruption of Withdrawals During Demand Management and Critical Periods) of this chapter (the Adjusted Quarterly Withdrawal Amount)~~.~~; and

(4) for holders of initial regular permits, with respect to the portion of the total permit amount that is classified as an Interruptible withdrawal amount pursuant to § 711.176(b)(6) of the Authority's rules, there is no applicable Notice of Cessation in effect pursuant to §§ 715.211 or 715.2111 of the Authority's rules.

(b) For those authorized to withdraw pursuant to interim authorization status or pursuant to a groundwater withdrawal permit other than an initial regular permit, and for those authorized to withdraw pursuant to an initial regular permit that does not include any Interruptible portion, t~~T~~he volume of groundwater that may be withdrawn ~~by a permitted user, interim authorization user, or contractual user who directly withdraws groundwater from the~~ Aquifer ~~at an authorized point of withdrawal owned or operated by the contractual user based on a transfer of a groundwater withdrawal permit or interim authorization status,~~ from the Aquifer during a demand management or critical period~~,~~ for a quarter is the Quarterly Scheduled Withdrawal Amount ~~as required to be established under this section~~ adjusted by the interruption coefficient as determined by § 715.218 (Interruption of Withdrawals During Demand Management and Critical Periods) of this chapter. For those authorized to withdraw pursuant to an initial regular permit that includes an Interruptible portion, the volume of groundwater that may be withdrawn from the Aquifer during a demand management or critical period for a quarter is the Uninterruptible Quarterly Scheduled Withdrawal Amount adjusted by the interruption coefficient as determined by § 715.218 (Interruption of Withdrawals During Demand Management and Critical Periods) of this chapter.

(c) Each permitted user, interim authorization user, and contractual user who directly withdraws groundwater from the Aquifer at an authorized point of withdrawal owned or operated by the contractual user based on a transfer of a groundwater withdrawal permit or interim authorization status, shall file with the Authority a ~~demand management and critical period~~quarterly withdrawal schedule on a form to be provided by the Authority as follows:

(1) for municipal and industrial users, the quarterly withdrawal schedule shall be filed for a given year not later than 4:30 p.m. of the last business day on or before December 1 of ~~each~~the previous year; and

(2) for irrigation users, the quarterly withdrawal schedule shall be filed for a given year not later than 4:30 p.m. of the last business day on or before February 1 of ~~each~~ that year.

(d) The quarterly withdrawal schedule shall include the following information:

(1) the Initial Regular Permit application number or permit number for each groundwater withdrawal permit applied for or owned by the person or entity filing the quarterly withdrawal schedule, ~~and~~ the total volume of groundwater authorized to be withdrawn thereunder, and, for holders of initial regular permits, the portion, if any, of the total volume of groundwater authorized to be withdrawn that is classified as an Interruptible withdrawal right pursuant to § 711.176(b)(6) of the Authority's rules;

(2) the Initial Regular Permit Application number or groundwater withdrawal permit number for which the person or entity filing the withdrawal schedule is the transferee, including the effective date of the transfer, the pool from which the transfer was made, ~~and~~ the total volume of groundwater authorized to be withdrawn pursuant to the transfer, and, for transferees of initial regular permits, the portion, if any, of the total volume of groundwater authorized to be withdrawn that is classified as an Interruptible withdrawal right pursuant to § 711.176(b)(6) of the Authority's rules;

. . .

(e) For a holder of an initial regular permit that qualifies for an Interruptible withdrawal amount pursuant to § 711.176(b)(6), the Quarterly Scheduled Withdrawal Amounts identified by the permit holder for each quarter pursuant to subsection (d)(3), above, shall, by the Authority, be automatically allocated between the permit holder's Interruptible and Uninterruptible groundwater withdrawal amounts in the same proportion as the Interruptible and Uninterruptible amounts authorized in the permit, and the permit holder may not withdraw more than the quarterly amount allocated for either Interruptible or Uninterruptible withdrawals in any quarter.

[Example: Smith holds a 400 acre-feet initial regular permit, of which 360 acre-feet are classified as Uninterruptible and 40 acre-feet are classified as Interruptible. Smith submits a quarterly withdrawal schedule with the following Quarterly Scheduled Withdrawal Amounts:

Quarter 1 – 50 acre-feet;

Quarter 2 – 150 acre-feet;

Quarter 3 – 150 acre-feet; and

Quarter 4 – 50 acre-feet.

During each quarter, Smith will be unable to withdraw more than the following amounts in each category:

Quarter 1 – 45 acre-feet in Uninterruptible withdrawals and 5 acre-feet in Interruptible withdrawals;

Quarter 2 – 135 acre-feet in Uninterruptible withdrawals and 15 acre-feet in Interruptible withdrawals;

Quarter 3 – 135 acre-feet in Uninterruptible withdrawals and 15 acre-feet in Interruptible withdrawals; and

Quarter 4 – 45 acre-feet in Uninterruptible withdrawals and 5 acre-feet in Interruptible withdrawals.]

(~~e~~f) A quarterly withdrawal schedule generally may not be amended. However, a quarterly withdrawal schedule may be amended ~~when a demand management or critical period is in effect unless~~ when the following conditions are met:

(1) a demand management or critical period is in effect;

(2) during a quarter in which a demand management or critical period is in effect, the person seeking to amend his ~~demand management and critical period~~quarterly withdrawal schedule is the recipient (transferee) of an intra-pool transfer of groundwater;

(~~2~~3) at the time of the transfer, the groundwater withdrawal right transferred is authorized to be withdrawn by the transferor during the quarter in which the transfer occurs pursuant to the transferor's ~~demand management and critical period~~quarterly withdrawal schedule; and

(~~3~~4) the transferor's ~~demand management and critical period~~quarterly withdrawal schedule is also amended to reduce his authorized withdrawal amount by the amount of the transfer.

§ 715.206 Transfers

A permitted user, interim authorization status user, or contractual user may, during a demand management or critical period, withdraw groundwater from the Aquifer pursuant to a transfer of a groundwater withdrawal permit or interim authorization status only under the following circumstances:

(1) if the transfer is an inter-pool transfer, the transfer was approved in accordance with § 711.358 (Effective Date of Transfers) of the Authority's rules on or before December 1 of the year immediately preceding the year in which the demand management or critical period ~~was~~ is in effect, and the groundwater was scheduled for withdrawal in a quarterly withdrawal schedule pursuant to § 715.204 (Authorized Withdrawals; ~~Demand Management and Critical Period~~Quarterly Withdrawal Schedules); or

(2) if the transfer is an intra-pool transfer and the groundwater was scheduled by the transferor for withdrawal in the same quarter in a quarterly withdrawal schedule pursuant to § 715.204 (Authorized Withdrawals; ~~Demand Management and Critical Period~~ Quarterly Withdrawal Schedules).

§ 715.208 Groundwater Carryforwards Generally Prohibited; Irrigation Carryforwards

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(c) Scheduled groundwater not actually withdrawn during a quarter may be withdrawn later in the same year:

(1) for Interruptible withdrawals, when there is no applicable Notice of Cessation in effect pursuant to §§ 715.211 or 715.2111 of the Authority's rules; and

(2) for Uninterruptible withdrawals, if the withdrawals occur during a period of the year when no demand management or critical period is in effect under §§ 715.212 or 715.216 of the Authority's rules.

§ 715.210 Monthly and Quarterly Groundwater Withdrawal Reports

(a) At any time when a demand management or critical period is in effect, ~~E~~each permitted user, interim authorization user, and contractual user who directly withdraws groundwater from the Aquifer at an authorized point of withdrawal owned or operated by the contractual user based on a transfer of a groundwater withdrawal permit or interim authorization status, must file monthly groundwater withdrawal reports with the Authority containing withdrawal data in weekly increments ~~when a demand management or critical period is in effect~~. These monthly reports must be filed on the form prescribed by the Authority and contain the following information:

. . .

(b) Those authorized to withdraw pursuant to initial regular permits must, every quarter, file quarterly groundwater withdrawal reports with the Authority containing withdrawal data in quarterly increments. This obligation to file quarterly reports applies regardless of whether a demand management or critical period is in effect. These quarterly reports must be filed on the form prescribed by the Authority and contain the following information:

(1) the person's name, address, and telephone number;

(2) contact person and title;

(3) the reporting quarter;

(4) the total volume of groundwater withdrawn during the reporting quarter pursuant to Interruptible withdrawal rights, if any;

(5) the total volume of groundwater withdrawn during the reporting quarter pursuant to Uninterruptible withdrawal rights; and

(6) any other information requested by the general manager.

(~~b~~c) Monthly groundwater withdrawal reports must be filed with the Authority no later than ten business days after the end of the reported month ~~in which the week occ~~Uninterruptible Rights.

(d) Quarterly groundwater withdrawal reports must be filed with the Authority no later than ten business days after the end of the reported quarter.

§ 715.211 Cessation and Resumption of Interruptible Withdrawal Rights in the San Antonio Pool

This section shall only remain in effect through December 31, 2007. The holder of an initial regular permit that identifies a well or wells in the San Antonio Pool may generally withdraw the portion of that permit that is classified as an Interruptible withdrawal amount pursuant to § 711.176(b)(6), if any, when the water level of the Aquifer as measured at well J-17 is greater than 665 feet above msl, subject to the following and the other limitations in this subchapter:

(a) If, at 8:00 a.m. on any day during the calendar year, the level of the Aquifer in the San Antonio Pool drops to equal to or less than 665 feet above msl as measured at well J-17, the general manager shall issue a notice of cessation of Interruptible withdrawal rights ("Notice of Cessation – San Antonio Pool"). All withdrawal of Interruptible Rights in the San Antonio Pool shall cease by midnight of the 7th day after general manager's issuance of the Notice of Cessation – San Antonio Pool. Additional Notices of Cessation – San Antonio Pool need not be issued while a Notice of Cessation – San Antonio Pool remains in effect. Copies of the Notice of Cessation – San Antonio Pool shall be:

(1) immediately posted on the Authority's internet site;

(2) published, as soon as is possible, in a newspaper of general circulation throughout the Authority's jurisdiction; and

(3) published in at least three other newspapers within the San Antonio Pool jurisdiction of the Authority.

(b) If a Notice of Cessation – San Antonio Pool is then in effect, the general manager shall cancel the Notice of Cessation by issuing a notice of resumption of Interruptible withdrawal rights ("Notice of Resumption – San Antonio Pool") if, at 8:00 a.m., the level of the Aquifer in the San Antonio Pool rises to greater than 665 feet above msl as measured at well J-17. Interruptible withdrawal rights in the San Antonio Pool may resume at midnight on the 7th day after issuance by the general manager of the Notice of Resumption – San Antonio Pool. Copies of the Notice of Resumption – San Antonio Pool shall be:

(1) immediately posted on the Authority's internet site;

(2) published, as soon as is possible, in a newspaper of general circulation throughout the Authority's jurisdiction; and

(3) published in at least three other newspapers within the San Antonio Pool jurisdiction of the Authority.

§ 715.2111 Cessation and Resumption of Interruptible Withdrawal Rights in the Uvalde Pool

This section shall only remain in effect through December 31, 2007. The holder of an initial regular permit that identifies a well or wells in the Uvalde Pool may generally withdraw the portion of that permit that is classified as an Interruptible withdrawal amount pursuant to § 711.176(b)(6), if any, when the water level of the Aquifer as measured at well J-27 is greater than 865 feet above msl, subject to the following and the other limitations in this subchapter:

(a) If, at 8:00 a.m. on any day during the calendar year, the level of the Aquifer in the Uvalde Pool drops to equal to or less than 865 feet above msl as measured at well J-27, the general manager shall issue a notice of cessation of Interruptible withdrawal rights ("Notice of Cessation – Uvalde Pool"). All withdrawal of Interruptible Rights in the Uvalde Pool shall cease by midnight of the 7th day after general manager's issuance of the Notice of Cessation – Uvalde Pool. Additional Notices of Cessation – Uvalde Pool need not be issued while a Notice of Cessation – Uvalde Pool remains in effect. Copies of the Notice of Cessation – Uvalde Pool shall be:

(1) immediately posted on the Authority's internet site;

(2) published, as soon as is possible, in a newspaper of general circulation throughout the Authority's jurisdiction; and

(3) published in at least one newspaper within the Uvalde Pool jurisdiction of the Authority.

(b) If a Notice of Cessation – Uvalde Pool is then in effect, the general manager shall cancel the Notice of Cessation by issuing a notice of resumption of Interruptible withdrawal rights ("Notice of Resumption – Uvalde Pool") if, at 8:00 a.m., the level of the Aquifer in the Uvalde Pool rises to greater than 865 feet above msl as measured at well J-27. Interruptible withdrawal rights in the Uvalde Pool may resume at midnight on the 7th day after issuance by the general manager of the Notice of Resumption – Uvalde Pool. Copies of the Notice of Resumption – Uvalde Pool shall be:

(1) immediately posted on the Authority's internet site;

(2) published, as soon as is possible, in a newspaper of general circulation throughout the Authority's jurisdiction; and

(3) published in at least one newspaper within the Uvalde Pool jurisdiction of the Authority.

§ 715.2112 Withdrawal of Interruptible Rights

A holder of an initial regular permit, a portion of which is classified as an Interruptible withdrawal amount pursuant to § 711.176(b)(6) of the Authority's rules, may only withdraw the Interruptible amount at times when there is no applicable Notice of Cessation in effect pursuant to §§ 715.211 or 715.2111 of the Authority's rules as follows:

(a) If no Notice of Cessation is in effect for an entire quarter, then the permit holder may withdraw up to the holder's entire Interruptible Quarterly Scheduled Withdrawal Amount for that quarter.

(b) If a Notice of Cessation is in effect for an entire quarter, then the permit holder may not withdraw any of the holder's Interruptible Quarterly Scheduled Withdrawal Amount for that quarter.

(c) If a Notice of Cessation is in effect for less than an entire quarter, then the permit hold may withdraw a portion of the permit holder's Interruptible Quarterly Scheduled Withdrawal Amount for that quarter (the "Adjusted Interruptible Quarterly Scheduled Withdrawal Amount"), calculated as follows:

Adjusted Interruptible Quarterly Withdrawal Amount =
Interruptible Quarterly Scheduled Withdrawal Amount x (1 - (number of days during quarter when Notice of Cessation is in effect / number of days in quarter))

. . .

§ 715.218 Interruption of Withdrawals During Demand Management and Critical Periods

(a) The interruption coefficients to be applied during a demand management or critical period to the Quarterly Scheduled Withdrawal Amounts or the Uninterruptible Quarterly Scheduled Withdrawal Amounts, whichever is applicable, ~~required to be scheduled~~ pursuant to ~~§ 715.204 (Authorized Withdrawals; Demand Management and Critical Period Withdrawal Schedules)~~ are as follows:

PERIOD	USER	~~= 500,000 AF/ANNUM CAP INTERRUPTION COEFFICIENT~~	450,000 AF/ANNUM CAP INTERRUPTION COEFFICIENT	400,000 AF/ANNUM CAP INTERRUPTION COEFFICIENT
Stage I Demand Management	Permitted users, interim authorization users, and contractual users, other than groundwater use for crop irrigation	~~0.10~~	0.05	0.05
	Permitted users, interim authorization users, and contractual users, with groundwater use for crop irrigation	~~0.00~~	0.00	0.00

PERIOD	USER	~~= 500,000 AF/ANNUM CAP INTERRUPTION COEFFICIENT~~	450,000 AF/ANNUM CAP INTERRUPTION COEFFICIENT	400,000 AF/ANNUM CAP INTERRUPTION COEFFICIENT
	Owners of exempt wells	~~0.00~~	0.00	0.00
Stage II Demand Management	Permitted users, interim authorization users, and contractual users, other than groundwater use for crop irrigation	~~0.15~~	0.10	0.10
	Permitted users, interim authorization users, and contractual users, with groundwater use for crop irrigation	~~0.00~~	0.00	0.00
	Owners of exempt wells	~~0.00~~	0.00	0.00
Stage III Critical Period	Permitted users, interim authorization users, and contractual users, other than groundwater use for crop irrigation	~~0.20~~	0.15	0.15
	Permitted users, interim authorization users, and contractual users, with groundwater use for crop irrigation	~~0.20~~	0.15	0.15
	Owners of exempt wells	~~0.00~~	0.00	0.00
Stage IV Critical Period	Permitted users, interim authorization users, and contractual users, other than groundwater use for crop irrigation	~~0.30~~	~~Effective January 1, 2004:~~ 0.23	N/A
	Permitted users, interim authorization users, and contractual users, with groundwater use for crop irrigation	~~0.30~~	~~Effective January 1, 2004:~~ 0.23	N/A
	Owners of exempt wells	~~0.00~~	0.00	N/A

(b) If one demand management or critical period is effective for an entire quarter, a user's Adjusted Quarterly Withdrawal Amount for that quarter shall be calculated as follows:

Adjusted Quarterly Withdrawal Amount = Quarterly Scheduled Withdrawal Amount (or Uninterruptible Quarterly Scheduled Withdrawal Amount, if applicable) x (1 - Interruption Coefficient)

(c) If a demand management or critical period is effective for less than an entire quarter and no demand management or critical period is effective for the remainder of the quarter, a user's Adjusted Quarterly Withdrawal Amount for that quarter shall be calculated as follows:

Adjusted Quarterly Withdrawal Amount = Quarterly Scheduled Withdrawal Amount (or Uninterruptible Quarterly Scheduled Withdrawal Amount, if applicable) x (1 - (Interruption Coefficient x (number of days in stage / number of days in quarter)))

(d) If two or more different demand management or critical periods are effective during a quarter, a user's Adjusted Quarterly Withdrawal Amount for that quarter shall be calculated as follows, using two or more interruption coefficients, as appropriate:

Adjusted Quarterly Withdrawal Amount = Quarterly Scheduled Withdrawal Amount (or Uninterruptible Quarterly Scheduled Withdrawal Amount, if applicable) x (1 – (Interruption Coefficient$_x$ x (number of days in stage x / number of days in quarter)) + (Interruption Coefficient$_y$ x (number of days in stage y / number of days in quarter)))