

**COMPREHENSIVE WATERSHED MANAGEMENT  
WATER USE TRACKING PROJECT**

**Requirements Traceability Matrix**



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## Requirements Traceability Matrix

### 1 Introduction

#### 1.1 Requirements Management

One of the six software development best practices<sup>1</sup> identified by the Rational Unified Process and the first of six key process areas<sup>2</sup> identified by the Software Engineering Institute's Capability Maturity Model (CMM) Level 2: Repeatable is requirements management. According to CMM, the purpose of requirements management is to establish and maintain a common understanding between the customer and the project development team regarding the customer's requirements that must be addressed by the software project in order for the project to be successful. Typically, requirements are organized into one of the following two categories:

- Business and functional requirements
- Non-functional requirements

Business and functional requirements are user-specified functions, tasks, or behaviors that the proposed system must support. Within the software engineering process utilized by the Water Use Tracking (WUT) Project Development Team, use cases are used to capture business and functional requirements in order to ensure that these requirements drive the software engineering effort through design, implementation, and validation. For this reason, this software engineering process is frequently characterized as a use case driven process and implicit in this process is the understanding that the use cases themselves document the business and functional requirements of the proposed software system. For purposes of requirements management and traceability, however, business and functional requirements are also documented in a Requirements Traceability Matrix and mapped within this matrix to the use cases that comprise the Use Case Model. The capability to map these requirements increases the likelihood that upon the customer acceptance of a software solution that supports all the use cases within the Use Case Model, the project development team will have delivered a software product that fulfills the customer's needs.

In contrast to business and functional requirements, non-functional requirements are system requirements that cannot be readily traced to specific use cases within the Use Case Model but are nonetheless critical to the overall success of the software project. In general, there

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<sup>1</sup> The six software best practices defined by the Rational Unified Process are: develop software iteratively, manage requirements, use component-based architectures, visually model software, verify software quality, and control changes to software.

<sup>2</sup> The six key process areas for CMM Level 2: Repeatable are: Requirements Management, Software Project Planning, Software Project Tracking and Oversight, Software Subcontract Management, Software Quality Assurance, Software Configuration Management.

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are two types of non-functional requirements, qualitative and general systems. The first type of non-functional requirements are actually constraints upon the various functions, tasks, or behaviors that constitute the system's business and functional requirements and are, thus, commonly considered to be the qualitative aspects of the proposed software system.

Qualitative systems requirements include considerations like:

- Usability
- Reliability
- Performance
- Supportability
- Performance Measures

The other type of non-functional requirements is general systems requirements typical to most software engineering projects. No specific general systems requirements were gathered during the requirement workshops. However, these topics will be covered in the Software Architecture Document created during the Elaboration Phase of the project. General systems requirements include considerations like:

- Security
- Relational Database Management System
- Backup and Recovery and Disaster Recovery
- User Documentation and Training

Because non-functional requirements cannot be traced to specific use cases within the use case model or, in some cases like security, apply to all use cases within the use case model, these requirements are typically not documented in the Requirements Traceability Matrix. Rather, non-functional requirements are documented and managed through a separate deliverable called a Supplementary Specification.

## 1.2 Purpose

The purpose of the WUT Requirements Traceability Matrix (RTM) is to document and manage the business and functional requirements for the WUT Project. The WUT RTM provides a master list of business and functional requirements organized into a number of meaningful features, each of which is a set of logically related requirements. Within the matrix, each requirement is mapped to one or more use cases within the WUT Use Case Model that supports the requirement. Once all requirements are mapped to a use case, SWFWMD is guaranteed that all business and functional requirements will be supported by the WUT software system. The WUT RTM



also provides a means to scope the WUT project for success by prioritizing the features and/or requirements associated with each feature across the various releases of the WUT system.

As more detailed and precise information is learned about the water use permitting analysis and reporting business processes throughout the WUT Project life cycle, the WUT RTM will need to be updated to refine existing requirements statements and to capture new business and functional requirements as they are identified. Keeping the WUT RTM updated is a critical success factor because it provides one of the primary mechanisms for measuring and ensuring the success of the WUT Project. That is, the mapping of business and functional requirements to use cases ensures that these requirements drive the software engineering effort through design, implementation, and testing as a result of the use case realization process utilized by the WUT Project Development Team. Once all the use cases within the WUT Use Case Model have been implemented, then all the business and functional requirements have been satisfied and the WUT Project will have completed successfully.

### 1.3 Water Use Tracking RTM Overview

The current version of the WUT RTM is organized into three sections:

- Requirements for the Initial Release of the WUT System
- Requirements Identified for a Possible Subsequent Release of the WUT System
- Requirements that have been deleted by the original requester

The first section identifies the set of business and functional requirements that will be supported in the initial release of the WUT system and the second section is comprised of the balance of the requirements that will be prioritized by the WUT Project Manager for a possible subsequent release of system. Within the first section, the requirements are organized into a number of features, each of which is a logically related set of requirements. Within each feature, the requirements are documented and managed within a matrix or table comprised of the following columns:

- **Req ID** – A unique identifier for each requirement
- **Requirement Statement** – Individual WUT business and functional requirement statements
- **Use Case** – A unique name that identifies the WUT Use Case that supports the requirement

## 2 Functional Requirements by Category

### 2.1 SWUCA

Req ID	Requirement Statement	Use Case
EW10	Track estimated future water supply sources for the following categories defined in Table 8 in Section 5, Regional Water Supply Planning Component, page 61 in the Southern Water Use Caution Area Recovery Strategy: <ul style="list-style-type: none"> <li>• Public Supply Conservation – 35 mgd</li> <li>• Existing permitted and not fully used surface water – 15 mgd</li> <li>• Alternative potable supplies under construction or design – 27 mgd</li> <li>• Surficial and Intermediate Aquifers – 35 mgd</li> <li>• Non-residential reclaimed water offset – 35 mgd</li> <li>• Non-public supply conservation (includes FARMS) – 45 mgd</li> <li>• Groundwater quantities available when land use changes – 50 mgd</li> <li>• Groundwater quantities available when lands acquired for conservation – 10 mgd</li> </ul>	<ul style="list-style-type: none"> <li>• View Report</li> </ul>
EW11a SR18 RW1	Track the relocation of active water use within the SWUCA.	<ul style="list-style-type: none"> <li>• View Net Benefit Summary</li> <li>• View Report</li> </ul>
EW11b RW16 SR20 SR21 SR22 SR23	Track the movement of lapsed quantities in an area, including: <ul style="list-style-type: none"> <li>• Which permit and well obtained the lapsed quantities.</li> <li>• Where the lapsed quantities are located.</li> <li>• Why the quantities are lapsed (i.e. expired, cancelled, retired).</li> <li>• What MFL zone the lapsed quantities are in.</li> </ul>	<ul style="list-style-type: none"> <li>• View Lapsed or Project Quantities Summary</li> <li>• View Report</li> <li>• View Use of Lapsed Quantities</li> </ul>
JY4 SR7	Report on the history of irrigation water conserving credits, including the balance, how much earned, and how much used, and drought quantities. Know who uses them and who has accumulated them, and be able to report on an individual basis, by a geographic area, or aggregate the data.	<ul style="list-style-type: none"> <li>• View Water Use Permit</li> <li>• View Report</li> </ul>
RW13	Track and report on the history of permitted data, such as use type, irrigated	<ul style="list-style-type: none"> <li>• View Water Use Permit</li> </ul>



Req ID	Requirement Statement	Use Case
RW18 SR32	acres, and pumpage (one use would be to know whether expired permits have had quantities reallocated).	<ul style="list-style-type: none"> <li>• View Withdrawal Pumpage Information</li> </ul>
RW14 SR8	Track and measure alternative source projects (note: some of these may be included in table 8): <ul style="list-style-type: none"> <li>• Surface water or stormwater projects.</li> <li>• Reclaimed water (reuse water).</li> <li>• Augmented surface water (reservoirs, harvesting of high flows (floodwaters).</li> <li>• ASR (Aquifer storage recovery)</li> <li>• Desalination.</li> <li>• Conservation (defined as a beneficial reduction of water use resulting in:               <ul style="list-style-type: none"> <li>○ modification of water use practices,</li> <li>○ reduction of unaccounted-for losses, or</li> <li>○ installation and maintenance of low volume water use systems, processes, fixtures, or devices.</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• View Map</li> <li>• View Report</li> <li>• View Use of Quantities Associated With District Projects</li> </ul>
RW28 RW20 SR4 SR6	View the spatial impact of a person's application with other active applications on-line so the applicant or evaluator has a visual of who else is available to compete for quantities with. Also include application and permit data on-line, either with scanned documents or access to database. The historical data should also be available, but viewing restrictions for certain legal documents has to be followed. Be able to query by geographic area or permit number.	<ul style="list-style-type: none"> <li>• View Map</li> <li>• View Water Use Permit Search</li> <li>• View Report</li> </ul>
RW30a	Create heat map indicating who was over-pumping, who was not over-pumping, or who was using their water credits.	<ul style="list-style-type: none"> <li>• View Map</li> </ul>
RW30b	Heat map for water quality. Add the District WUPnet sentinel wells on this map - those are the District wells that have been in existence the longest time and we have the best data with. So if we bring them up in an area we know we have reliable data.	<ul style="list-style-type: none"> <li>• View Map</li> </ul>
SR12a	Report on the permits that have been relocated by a permit holder.	<ul style="list-style-type: none"> <li>• View Net Benefit Summary</li> </ul>



Req ID	Requirement Statement	Use Case
		<ul style="list-style-type: none"> <li>• View Report</li> <li>• View Change in Use Type or Owner</li> </ul>
SR12b SR13 SR26a EW12	Track the impact that water use has to the set MFL levels. In particular, compare the affects of the new or modified use to the actual flow and level of the water body or aquifer to make sure the actual level will not go below the MFL level. Types of things to check are: <ul style="list-style-type: none"> <li>• New applications, renewals, or modifications.</li> <li>• Relocated uses.</li> <li>• Change of use type.</li> <li>• Lapsed quantities.</li> <li>• Retired permits (some are lapsed - some are not).</li> </ul>	<ul style="list-style-type: none"> <li>• View Net Benefit Summary</li> <li>• View Change in Use Type or Owner</li> <li>• View Use of Lapsed Quantities</li> <li>• View Water Withdrawal Credit</li> <li>• View Land Use Information</li> <li>• View Lapsed or Project Quantities Summary</li> </ul>
SR14 SR26b EW2 SR15	Track net benefit changes. Some things involved are: <ul style="list-style-type: none"> <li>• Relocated permits</li> <li>• Permits with a change of use</li> <li>• Old and new locations</li> <li>• Lapsed quantities</li> <li>• Reclaimed water (not in database yet)</li> <li>• Projects</li> <li>• Amount of net benefit gained or lost from the change</li> <li>• New permits that came from an older permit due to a new benefit gain</li> </ul>	<ul style="list-style-type: none"> <li>• View Net Benefit Summary</li> <li>• View Change in Use Type or Owner</li> <li>• View Use of Lapsed Quantities</li> <li>• View Water Withdrawal Credit</li> <li>• View Land Use Information</li> <li>• View Lapsed or Project Quantities Summary</li> </ul>
SR16	Report the net benefit amount in MGD for: <ul style="list-style-type: none"> <li>• Change of permitted location or use</li> <li>• Land use change</li> <li>• Use of lapsed quantities</li> <li>• Water withdrawal credit (replacement, reclaimed water)</li> </ul>	<ul style="list-style-type: none"> <li>• View Net Benefit Summary</li> <li>• View Change in Use Type or Owner</li> <li>• View Use of Lapsed Quantities</li> <li>• View Water Withdrawal Credit</li> <li>• View Land Use Information</li> <li>• View Lapsed or Project Quantities Summary</li> </ul>
SR17	Mark those permits that have a land use change so the quantities can be relocated to the public supply utility.	<ul style="list-style-type: none"> <li>• View Change in Use Type or Owner</li> <li>• View Report</li> </ul>





Req ID	Requirement Statement	Use Case
SR19	Create layer that includes "cones of depression" for the MFL information, which will indicate the area of influence to an MFL.	<ul style="list-style-type: none"> <li>View Map</li> </ul>
SR24 SR25	Report on any water use amounts sold or given from one permit to another permit, especially reclaimed water (reclaimed water can be taken away, depending on the contract. It is kind-of-like “leasing” the water, but can be taken away).	<ul style="list-style-type: none"> <li>View Net Benefit Summary</li> <li>View Water Withdrawal Credit</li> </ul>
SR28	For mitigation of MFL impacts, report on the improvement percentage amount, where it was located, the cost, how the decrease was obtained and what impacts it had.	<ul style="list-style-type: none"> <li>View Mitigation of MFL Impacts</li> </ul>
SR29 SR9	Report on how much water was made available through the District's water resource development projects. Elements of the report should be: <ul style="list-style-type: none"> <li>Source of benefit (aquifer or surface water).</li> <li>The locations of the alternative sources.</li> <li>What permits are using the quantities generated by the projects, and what project they are getting the water from.</li> </ul>	<ul style="list-style-type: none"> <li>View Mitigation of MFL Impacts</li> <li>View Use of Quantities Associated With District Projects</li> <li>View Map</li> </ul>
SR3	Report on the permit duration (To track expiration dates for those looking for someone to compete with).	<ul style="list-style-type: none"> <li>View Report</li> <li>View Water Use Permit Search</li> </ul>
SR31	Should allow comparison to adjacent districts GIS layers to permit GIS layer to access adjacent data.	<ul style="list-style-type: none"> <li>View Map</li> <li>Maintain Quicklinks</li> </ul>
SR5	Report on competing applications (including ones that are in modification or expiring).	<ul style="list-style-type: none"> <li>View Report</li> <li>View Water Use Permit Search</li> </ul>
SW20	Supply the Regulatory requirements of MFL data: <ul style="list-style-type: none"> <li>What water levels are in relationship to MFL so you know who has to mitigate or how much excess flow there is.</li> <li>Need the historic and current levels so applicant knows how much to mitigate or what is available.</li> </ul>	<ul style="list-style-type: none"> <li>View Report</li> </ul>
TW9	Be able to determine the availability of alternative use supplies, such as reclaimed water and desalination.	<ul style="list-style-type: none"> <li>View Map</li> </ul>
SR2	Report the Reservation from use amounts allocated to certain participants.	<ul style="list-style-type: none"> <li>View Water Use Permit Search</li> </ul>



## 2.2 Water Use Permits

Req ID	Requirement Statement	Use Case
EW14	Track ownership of wells or permits over the life of the withdrawal point so the relocated quantities can be traced from owner to owner. Quantities that are relocated will have certain restrictions placed on them, as well as any quantities that remain on the original permit. For permits that have multiple withdrawal points, we need the ability to track ownership of specific withdrawal points over time.	<ul style="list-style-type: none"> <li>• View Report</li> <li>• View Water Use Permit</li> </ul>
EW21	Be able to look at permitted quantities, actual quantities (pumpage), and the resources it uses (Water Management DB)	<ul style="list-style-type: none"> <li>• View Water Use Permit</li> <li>• View Report</li> </ul>
EW9	Ability to track requested and permitted quantities.	<ul style="list-style-type: none"> <li>• View Water Use Permit</li> </ul>
JY1	Identify when a standby permit is reactivated due to the loss of alternative quantities.	<ul style="list-style-type: none"> <li>• View Net Benefit Summary</li> <li>• View Water Withdrawal Credit</li> </ul>
RW19	Have a heat map that shows permit information for specific time periods. You should be able to input a geographic area (whether by county, department, or entire District area), select the time period(s) you want, and select one of two views: permits issued or active permits in that time period, and produce the map show the locations. On a high-level view, you need to be able to see the locations with the predominate use type reflected on the map itself, and include a graph or chart showing the total number of permits, predominate use shown by %, and the time period involved. If you click on it, bring up the permit details, such as name, permit number, issue date, expire date, use type, wuca, and average quantities.	<ul style="list-style-type: none"> <li>• View Map</li> <li>• View Report</li> </ul>
RW27	Automate some of the requests that Jim Whalen receives. The majority of request are related to permitted and pumpage quantities, both at the permit level and well level. They are usually sorted temporally or geographically.	<ul style="list-style-type: none"> <li>• View Water Use Permit</li> <li>• View Report</li> <li>• View Withdrawal Pumpage Information</li> <li>• View Well Construction Information</li> <li>• View Resource Information</li> <li>• View Crop Report Information</li> </ul>



Req ID	Requirement Statement	Use Case
		<ul style="list-style-type: none"> <li>• View Land Use Information</li> <li>• View Compliance Information</li> </ul>
RW29	Ability for public utilities and internal staff to find existing permits in or near their service area so they can spatially see what water is available, or may become available, when they plan for their future growth and water resources. They will need to view the use type (interested mainly in agricultural and mining), owned acres, and the current permittee's contact information.	<ul style="list-style-type: none"> <li>• View Map</li> <li>• View Water Use Permit Search</li> </ul>
RW37 TW4	Analyze permits using a soils type GIS layer. Have a second soils layer based on the soil types indicated on the permittees compliance to conditions.	<ul style="list-style-type: none"> <li>• View Map</li> </ul>
RW4	Ability to have printable and customizable maps	<ul style="list-style-type: none"> <li>• View Map</li> </ul>
RW46a	Identify when the District or another governmental agency purchases land, a link should be available to show if there is a permit on that area so it can be retired.	<ul style="list-style-type: none"> <li>• View Map</li> </ul>
RW46b	Need to know how water use changes when land use changes.	<ul style="list-style-type: none"> <li>• View Report</li> <li>• View Land Use Information</li> </ul>
RW6 SW17 RW26a	Have an easy way to query data by various fields: <ul style="list-style-type: none"> <li>• Issue date</li> <li>• Expiration date</li> <li>• Use type or other commodity</li> <li>• Predominate use</li> <li>• Pumpage reports</li> <li>• Permitted quantities</li> <li>• Permit status (active/delete/app/permit)</li> </ul>	<ul style="list-style-type: none"> <li>• View Water Use Permit Search</li> </ul>
SW18	Ability to pull a well package that provides a view of water use at a particular time that is then plugged into models used to generate water use amounts. The data would include wells, land elevation, aquifer, and total and cased depths.	<ul style="list-style-type: none"> <li>• Generate Well Package</li> </ul>
SW24	The ability to associate permitted quantities, pumpage quantities, and use	<ul style="list-style-type: none"> <li>• View Water Use Permit</li> </ul>



Req ID	Requirement Statement	Use Case
SW25	code data at the well level.	<ul style="list-style-type: none"> <li>View Withdrawal Pumpage Information</li> </ul>
TW12	Track changes in land use and how it affects water availability.	<ul style="list-style-type: none"> <li>View Report</li> <li>View Land Use Information</li> </ul>
TW16	Need historical data for Water Use Permits including their spatial representations (polygons)	<ul style="list-style-type: none"> <li>View Map</li> </ul>

### 2.3 Water Use

Req ID	Requirement Statement	Use Case
EW1	Must be able to track trends in land use and water use changes. These include several means by which a proposed new withdrawal that impacts an MFL waterbody can achieve a "Net Benefit," including the provisions for relocated, lapsed, and water withdrawal credits.	<ul style="list-style-type: none"> <li>View Report</li> <li>View Land Use Information</li> </ul>
EW4 EW5 EW7	Ability to track water use over time and negotiate reasonable new water use based on water use pumpage trends.	<ul style="list-style-type: none"> <li>View Withdrawal Pumpage Information</li> <li>View Report</li> </ul>
RW15	Track by withdrawal source – what aquifer or USGS water body are general and Individual permits pumping from.	<ul style="list-style-type: none"> <li>View Water Use Permit Search</li> <li>View Map</li> </ul>
RW33	Have map be able to show quantity of pumpage. Hover over or click a point in the map and see the average rolling 12, peak month, and max month compared to the pumpage of the well. Also get the cumulative quantities for an area you enter manually.	<ul style="list-style-type: none"> <li>View Report</li> </ul>
RW49	Provide the ability for applicants or District staff to compare the percentage a permit is over-pumping, based on use type, against the regional average for the same use type. The region would be the area that fell within the buffer distance entered, and the time of interest would also be entered.	<ul style="list-style-type: none"> <li>View Report</li> <li>View Withdrawal Pumpage Information</li> </ul>
SW11	Need to know what aquifer is being pumped from. There are permitting constraints in ETB MIA that no additional water from the Floridan Aquifer can be pumped, but it is allowed from Intermediate aquifer.	<ul style="list-style-type: none"> <li>View Withdrawal Pumpage Information</li> </ul>



Req ID	Requirement Statement	Use Case
SW15 SW9	Select water use data temporally or with geographic overlays, which can be from another layer or graphics on the page. Also be able to place it in an Excel spreadsheet.	<ul style="list-style-type: none"> <li>View Map</li> </ul>
SW21	Select water use based on predominant use, use types, and regions they fall in. The predominant use would be agricultural, industrial, mining & dewatering, public supply, and recreational. Each predominate use is further broken down into more detailed categories, such as melons or citrus for the agricultural predominate use. This needs historical data for trend analysis.	<ul style="list-style-type: none"> <li>View Report</li> <li>View Water Use Permit Search</li> </ul>
SW6	Generate monthly reports for Board Packet that shows the difference in quantities permitted every month for specified geographic areas (i.e., counties, MIA, etc.).	<ul style="list-style-type: none"> <li>View Report</li> </ul>
TW1	Establish relationships between inputs (i.e. rainfall) and pumpage data. (Note: In response to one of Kurt's comments regarding the amount of pumping in areas in relationship to amount of rainfall and irrigation system efficiency.)	<ul style="list-style-type: none"> <li>View Report</li> </ul>
TW10 TW11	Show the intensity of water use in a geographic area on a color-coded map.	<ul style="list-style-type: none"> <li>View Map</li> </ul>
TW15	Identify different types of water use, such as groundwater, surface water, and re-use.	<ul style="list-style-type: none"> <li>View Water Use Permit</li> </ul>
TW8	Know how much water has been permitted and how much has been used based on land use over time.	<ul style="list-style-type: none"> <li>View Report</li> </ul>

## 2.4 Water Management Database

Req ID	Requirement Statement	Use Case
EW13	Support extraction or reporting of data for ad-hoc geographic areas by using spatial queries such as graphics or polygon buffering. The ability to aggregate the data must be there and any type of polygon should be able to be used.	<ul style="list-style-type: none"> <li>View Map</li> </ul>
RW22 RW23 RW24 RW48	Track aquifer level changes, lake level changes, rainfall level changes, and stream flow changes by area over time (i.e. monthly).	<ul style="list-style-type: none"> <li>View Report</li> </ul>
RW25	Create layer that shows the Developments of Regional Impacts (DRI) and their status. This layer will be plugged into the new model for population projections and water supply demand projections.	<ul style="list-style-type: none"> <li>View Map</li> </ul>
RW45	Identify what lakes are stressed, when they became stressed, and if/when they came off stressed list.	<ul style="list-style-type: none"> <li>View Report</li> <li>View Map</li> </ul>

## 2.5 Compliance

Req ID	Requirement Statement	Use Case
RW10 RW9b	Track pumpage oddities. Two examples are: A. Permittees that have consistent pumpage readings even when some of the data is missing. Use this information to predict whether they are in compliance in spite of the missing data. B. Permittees that enter zero on their pumpage reports.	<ul style="list-style-type: none"> <li>View Report</li> <li>View Withdrawal Pumpage Information</li> <li>View Compliance Information</li> <li>View Resource Information</li> <li>View Water Use Permit Search</li> </ul>
RW34 RW9a	Track permittees not submitting conditional/pumpage reports, and generate a map showing their locations.	<ul style="list-style-type: none"> <li>View Map</li> <li>View Compliance Information</li> <li>View Resource Information</li> </ul>
TW13 TW14	Obtain report of those out of compliance of permit conditions by over-pumping their allowable quantities. Show how much over pumping is done,	<ul style="list-style-type: none"> <li>View Map</li> <li>View Report</li> </ul>



Req ID	Requirement Statement	Use Case
	and have option to select by time period or by area. Need to break down to a permit-by-permit basis, but also show the whole thing on a map.	<ul style="list-style-type: none"> <li>View Compliance Information</li> </ul>

## 2.6 Minimum Flows and Levels

Req ID	Requirement Statement	Use Case
EW6	<p>Need a protocol to assess how the actual flow and levels (AFL) compare to the established minimum flows and levels (MFL), including general trending information and whether waterbody-specific criteria are being met. There are 3 major provisions to track:</p> <ul style="list-style-type: none"> <li>Minimum aquifer level - The saltwater intrusion MFL is met when the moving 10-year AFL is at or above the MFL for five consecutive years. The MFL is not met when the 10-year moving AFL in the reference wells is below the MFL for two consecutive years.</li> <li>Minimum flows on the upper Peace River - The MFL is met when the MFL's are at or above the established MFL for three consecutive years. Once the MFL has been considered met, if it is followed by two years where the MFL is not met within a rolling ten-year period, then the AFL shall be considered below the MFL. A determination of whether AFL's are meeting the established MFL is made at each one of the established minimums (Bartow, Ft. Meade and Zolfo Springs).</li> <li>Minimum lake levels - The proposed MFL is achieved when the long-term P50 is at or above the MFL and the long-term P10 is at or above the High Minimum Lake Level for five consecutive years. Once in compliance, MFL is not met when the long-term P50 is below the MFL for two or more consecutive years or the long-term P10 is below the High Minimum Lake Levels for two or more consecutive years.</li> </ul>	<ul style="list-style-type: none"> <li>View Report</li> </ul>
SW19 SR34	Use system to publish a chart or graph that compares the MFL to a running average of AFL's. This should reflect how the AFL's are moving along the MFL line and indicate how different resources impact the MFL. The	<ul style="list-style-type: none"> <li>View Report</li> </ul>



Req ID	Requirement Statement	Use Case
	resources to include are pumpage, new projects, and rainfall. It will probably be run on a monthly basis.	

## 2.7 Water Estimates

Req ID	Requirement Statement	Use Case
EW19	Ability to add estimated quantities for unmetered permits, which is found in the Water Estimates Database.	<ul style="list-style-type: none"> <li>Maintain Water Use Estimates</li> </ul>

## 2.8 External Data

Req ID	Requirement Statement	Use Case
RW42	Provide access to population data in system that are aggregated to appropriate geographic areas (services areas, counties, etc.)	<ul style="list-style-type: none"> <li>View Map</li> </ul>

## 2.9 Crop Reports

Req ID	Requirement Statement	Use Case
SW26	The ability to access crop report information spatially and temporally.	<ul style="list-style-type: none"> <li>View Crop Report Information</li> <li>View Map</li> </ul>

## 2.10 Data Integration

Req ID	Requirement Statement	Use Case
RW2 SW16	Link between Water Use Permits (WUP), Environmental Resource Permits (ERP), and Well Construction Permits. One use would be as a means of notifying appropriate District staff when pertinent land use changes. (i.e. want to know if an ERP is issued or applied for a subdivision where permit has been issued for a farm.)	<ul style="list-style-type: none"> <li>View Report</li> <li>View Map</li> </ul>





### 3 Requirements Identified for a Possible Subsequent Release of the WUT System

Req ID	Requirement Statement
RW11	Calculate water quality trends by geographic area.
SR11	Compare the population reported to the Bureau of Economic and Business Research (BEBR) report.
RW47	Ability to provide external customers a means to query and view application information and locations by entering spatial, temporal, or data specific information. Current applications satisfying the criteria would be viewed immediately; future applications would be e-mailed.
RW21	Create a consistent grid to analyze data through time, including population, water use, etc).
EW16	Use GIS layers to analyze how salt-water intrusion is affecting water quality, etc. Layer would need to be updated either quarterly or annually.
RW41	Develop a link between pumpage, water quality, and water levels (both of MFL's and other water bodies). The permittee has to stop pumping when certain levels are reached: <ul style="list-style-type: none"> <li>• Augment lake when water levels are too high.</li> <li>• Pump water when chlorides concentrations too high.</li> <li>• Pump more out of well to pond &amp; from pond to golf course.</li> <li>• Use more ground water when allowed to, when also q's for surface water.</li> </ul>
SW22 SW4 SW5 SW3	Need tool to be able to estimate water use (now being done in SAS). To do this estimate, you need to be able to query the water use data with various variables, such as time period, use types, withdrawal type (groundwater or surfacewater), and geographic areas. Once the initial query is complete, you need to be able to refine the resulting data set. An example is when you select active permits in a time period. If a permit expired inside of the time period, the refine tool would help determine if that permit would or would not be a part of the result set, perhaps by determining at what point in the time line it expired.
RW5	Capture crop report data and link it with the corresponding use quantities, so you can observe changing crop patterns, see where land has shifted out of crops, and track water use per planted acre per crop to see patterns in water use by geography. The accumulation (or depletion) of credits by geographic area could point out potential problems in permitting in specific geographic areas. It may point to soil type or local cultural practice problems. Link to requirement JY4/SR7, the report of water credits used and earned.
SR33	Report compliance on a permit (not wells). Crop reports on permits (not wells) (I think this was a requirement to report this data some how at a well level).



Req ID	Requirement Statement
SR1	Report the Reservation from use amounts associated with some surface water.
JY5 RW32 J6	<p>Provide the ability to obtain data necessary to determine and access the population estimates for an area or on a permit-by-permit basis. Needs to accommodate how it is determined now and how it will be determined under the SWUCA 2 rules. This would include:</p> <ul style="list-style-type: none"> <li>• Seasonal residential report based on AHCA hospital report (determine seasonal populations).</li> <li>• Block group and "place" level Census Transportation Planning Package data on total workers in Parts A and B for calculating net service area commuter populations (the planned highway and road construction - to see commuter data and areas of growth).</li> <li>• Census group and block data (total and by age), housing units, household, and group quarters population.</li> <li>• Zip code tabulation areas (ZCTA) by age.</li> <li>• Public Supply Service areas.</li> <li>• Development of Regional Impact (DRI).</li> </ul> <p>(Note: To calculate projections for service area population and water supply demand the new model needs the DRI's and Road Construction layers.)</p>
SR10	<p>Report the per capita daily water figures for the permitted amount, reported amount and adjusted number for per utility. The formula for adjusted gross capita is:</p> $\frac{WD + IM - EX - TL - SU - EM}{Population}$ <p>where:</p> <p>WD = ground water &amp; surface water withdrawals  IM = water imported/bought from another supplier  EX = Water exported/sold to other suppliers  TL = treatment loss (typically R/O or sand filtration  SU = Significant uses  EM = Environmental mitigation, if required as a District permit condition.  Population = Functional population</p>
RW44	Access well construction data for domestic wells using locational data, such as GPS or section, township, and range.
EW8	The external users need to be able to click on an area and obtain data for the surrounding area, such as lapsed quantities, historical use, and adjacent permits. Need to support decision-making on the applicant's part, especially when their



Req ID	Requirement Statement
	request does not meet the MFL requirements.
JY2	<p>Make the following property appraiser data available so you can improve the ability to project service area populations in inter-Census years in several ways:</p> <ul style="list-style-type: none"> <li>• Provide a more discreet and up-to-date count of housing units in a utility service area.</li> <li>• Help determine when a DRI is completed.</li> <li>• Match commercial properties by the connection data provided by utilities.</li> <li>• Use lot sizes, where available, to determine its role in household water use compared to other variables in research projects.</li> <li>• There may be other data of use as well (wells, pools, etc).</li> </ul>

#### 4 Requirements Deleted by Original Requester

Req ID	Requirement Statement
JY3	Make Traffic Analysis Zone (TAZ) layers available.
RW3	Establish a link between public supply service area delineation and census delineation and data.
RW31	Eliminate permits from the over-pumpage report that have been analyzed for the over-pumpage, and deemed OK.
RW36	Have access to water use estimate report, including utility imports and exports (in annual report – not sure if in electronic form), per/capital rates, treatment reports, and unaccounted water usage.
RW38	Analyze permits based on a seasonal high groundwater GIS layer.
RW39	Analyze permits based on seasonal high wetlands GIS layers.
RW40	Provide the ability to calculate the annual averages using the actual number of days between meter readings.
RW7	The date the meter was installed.
RW8	Identify who read the meter.
SR27	Report on the modeling done to determine the impacts
TW2	Incorporate AGMOD (or results of AGMOD) into system.
SR30	The system should be able to show a permit holder that is trying to cheat the system by looking at the reported pumpage of the permits in the surrounding areas. (e.g. if one permit is at or below average while several of the other permits are



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<b>Req ID</b>	<b>Requirement Statement</b>
	way above normal, maybe the actual amount for that permit is not be reported properly).