

# DOVER/PLANT CITY WATER USE CAUTION AREA REVIEW

PROGRAM COMPONENTS	PROGRAM COMPONENT SUMMARY	CITATIONS
<p style="text-align: center;"><u><b>Water Supply Mission Components</b></u></p>	<p>For more than 40 years, farmers in the Dover/Plant City area have pumped groundwater to protect crops during freeze events. During an 11-day freeze event in January 2010, area farmers pumped large quantities of groundwater to protect their crops. This combined pumping dropped the aquifer level 60 feet, which impacted approximately 750 residential wells, and contributed to more than 140 sinkholes being reported. Significant freeze events resulting in well failures and sinkholes have occurred three times over the past 10 years.</p>	
<p style="text-align: center;"><b>Goals</b></p> <ul style="list-style-type: none"> <li>• Resource (e.g. salt intrusion, potentiometric surface, MFLs, <b>Domestic wells, Freeze protection use and resource impacts, MALs, etc.)</b>)</li> <li>• Existing legal user protection</li> <li>• Future water resource development project water availability</li> </ul>	<p><b>Dover/Plant City Freeze Management Plan</b></p> <p>New rules for existing and future water use permit (WUP) holders with crops that require frost/freeze protection within the Dover/Plant City WUCA to ensure impacts from groundwater withdrawals do not worsen.</p> <p>Objective is to reduce groundwater withdrawals for frost/freeze protection by 20% by January 2020.</p> <p>Recovery strategy to meet Minimum Aquifer Level (MAL).</p> <p>Expand FARMS Program to increase incentives for alternative frost/freeze protection methods.</p> <p>Enhanced data collection.</p> <p>Investigation of crop protection withdrawal-related well complaints by permittees.</p> <p>Expand area where special well construction standards apply to prevent impacts to water wells from periodic high water use.</p>	<p><a href="#">Dover/Plant City Freeze Management Plan</a></p> <p><a href="#">Chapter 40D-2, F.A.C.</a></p> <p><a href="#">Applicants Handbook Part B, Rule 40D-80.075, F.A.C.</a></p> <p><a href="#">Chapter 40D-26, F.A.C.</a></p> <p><a href="#">Applicants Handbook Part B Section 3.9.4.3.3</a></p> <p><a href="#">Applicants Handbook Part B Section 3.9.4.4</a></p> <p><a href="#">Applicants Handbook Part B Section 3.9.4.5</a></p> <p><a href="#">Rule 40D-3.600, F.A.C.</a></p>
<p><b>Linkage to regional water supply plan</b></p> <ul style="list-style-type: none"> <li>• Limited water availability demonstrated</li> <li>• <b>Causal relationships documented</b></li> <li>• Analysis of alternatives and comparative performance of</li> </ul>	<p>SWFWMD's current regional water supply plan, dated 2010, pre-dates the establishment of the Dover/Plant City WUCA. The 2015 updated regional water supply plan will address the Dover/Plant City WUCA.</p> <p>FARMS program encourages alternatives to crop protection, such as tailwater recovery systems, stormwater systems, tunnels, covers, foam and heaters (and others supported by IFAS documentation); cost share for projects that reduce groundwater withdrawals for frost/freeze protection in Dover/Plant City WUCA increased from 50% to 75%.</p>	<p><a href="#">Section 373.0363, F.S. Subsection (4)(b)</a></p> <p><a href="#">Chapter 40D-26, F.A.C.</a></p> <p><a href="#">Applicants Handbook Part B Section 3.9.4.3.3</a></p>

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<p>options</p> <ul style="list-style-type: none"> <li>• Strategy (long-term) developed considering scientific and socio-economic issues</li> <li>• Water supply development and water resource development projects linkage</li> <li>• Funding</li> <li>• Others</li> </ul>		
<p><b>Related to minimum flow / level recovery strategy</b></p>	<p>MAL is the 10 ft. potentiometric surface elevation (NGVD 1929) at District Well DV-1 Suwannee. This is the level at which further withdrawals will cause significant harm.</p> <p>Minimum Aquifer Level Protection Zone (MALPZ) is the area within the 30 ft. drawdown contour that resulted from the January 2010 frost/freeze event. It is the most impacted area where the greatest concentration of withdrawal impacts have occurred (i.e., well complaints and sinkholes)</p> <p>Notice of Recovery Strategy is required in all WUPs</p>	<p><a href="#">Rule 40D-8.626, F.A.C.</a></p> <p><a href="#">Applicants Handbook Part B Section 3.9.4.7.1</a></p>
<p><b>Geographic area</b></p>	<p>256 square miles within the Dover / Plant City area in Hillsborough County.</p> <p>Portions of the area also lie in Northern Tampa Bay WUCA and/or SWUCA.</p>	<p><a href="#">Rule 40D-2.801, F.A.C. Subsection (3)(d)</a></p> <p><a href="#">Applicants Handbook Part B Section 3.9.4</a></p>
<p><b>Monitoring Program</b></p> <ul style="list-style-type: none"> <li>• Hydrologic</li> <li>• Biologic</li> <li>• Linkage to recovery strategy</li> <li>• Linkage to water shortage trigger</li> <li>• Compliance with goal</li> <li>• Methodology</li> </ul>	<p>WUP rules enhance data collection by requiring as a permit condition flow meters and automated meter reading devices on all withdrawal points for permits --</p> <ul style="list-style-type: none"> <li>- with crops that utilize frost/freeze protection quantities; and</li> <li>- for groundwater quantities to provide supplemental irrigation for a use that typically requires crop protection and where such protection could be achieved through groundwater withdrawals, but alternative protection methods are proposed.</li> </ul> <p>Flow Meter Reimbursement Program provides cost share reimbursement for flow meter equipment and installation, if the meters would not be required but for the new WUP rules.</p>	<p><a href="#">Applicants Handbook Part B Section 3.9.4.4</a></p> <p><a href="#">Applicants Handbook Part B Section 3.9.4.4.2</a></p>

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	<p>Flow meter equipment is then equipped with SWFWMD-funded automated meter reading telemetry that reports real-time water use, which enables improved monitoring of groundwater pumping for frost/freeze irrigation.</p> <p>Permit holders are responsible for maintenance and replacement of meters.</p> <p>SWFWMD is expanding its data collection network by drilling additional monitoring wells to more accurately track the cone of depression associated with withdrawals during crop establishment and frost/freeze events.</p>	<p><a href="#">Well Construction and Aquifer Performance Testing for the Dover-Plant City</a></p> <p><a href="#">Dover/Plant City Freeze Management Plan</a></p>
<b><u>Regulatory Program Components</u></b>		
<p><b>Source restricted (“capped”)</b></p> <ul style="list-style-type: none"> <li>• Surface water</li> <li>• Ground water</li> <li>• Method to cap defined</li> </ul>	<p>“Restricted allocation area” – identifies Dover/Plant City WUCA as having additional requirements and restrictions per Section 3.9 of A.H. Part B.</p>	<p><a href="#">Applicants Handbook Part B Section 3.2.1.C</a></p>
<p><b>Existing legal user (ELU) rights</b></p> <ul style="list-style-type: none"> <li>• Renewal and modification programs</li> <li>• New program(s) and ELU</li> <li>• Offset projects for ELU</li> </ul>	<p>If no increase in permitted crop protection quantities or change in “use type” associated with crop protection, renewals/modifications are evaluated to determine compliance with conditions set forth in 40D-2.301 and A.H.; Existing impacts for crop protection are evaluated the same as new quantities. However, existing impacts to MALPZ and MAL will not be the basis for permit denial.</p> <p>Existing and new permittees within Dover/Plant City WUCA must investigate and resolve crop protection-related well complaints.</p> <p>New well construction standards apply within Dover/Plant City WUCA.</p> <p>Mitigation process for impacts to ELU (e.g., if well pump no longer operates) caused by permittee withdrawing ground water for crop establishment or protection.</p>	<p><a href="#">Applicants Handbook Part B Section 3.9.4.2.2</a></p> <p><a href="#">Applicants Handbook Part B Sections 3.9.4.5 &amp; 3.9.4.6</a></p> <p><a href="#">Rule 40D-3.600, F.A.C.</a></p> <p><a href="#">Applicants Handbook Part B Section 3.9.4.8</a></p>
<b>New allocations of water</b>	<p>“New quantities” in Dover/Plant City WUCA means groundwater for crop protection that is not currently authorized to be used by the applicant or not currently authorized to be used for the intended use, including</p>	<p><a href="#">Rule 40D-2.021, F.A.C. Subsection (9)</a></p>

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<ul style="list-style-type: none"> <li>• Including re-allocation strategy (aka resource redistribution or terminated base condition water)</li> <li>• Threshold limit</li> <li>• Modeling criteria</li> </ul>	<p>modifications of existing permits to increase quantities, and/or change the Permit Use Type.</p> <p>New quantities for crop protection are evaluated for design event of 21 hrs of irrigation, followed by 6 hrs of non-irrigation, 13 hrs of irrigation, 11 hrs of non-irrigation, and 14 hrs of irrigation. Drawdown shall not exceed 0.0 ft. within or at boundary of MALPZ, in addition to requirement in Rule 40D-2.301.</p> <p>If there is an impact to MAPLZ, option to mitigate impact through “Net Benefit” (i.e., offset predicted impact of proposed withdrawal, <u>plus</u> provide an additional positive effect within MAPLZ equal to or greater than 20% of predicted negative impact). Two options:                      (1) Mitigation Plus Recovery (retiring from use the historically used groundwater quantity) or (2) Groundwater Replacement Credit (offset groundwater withdrawals with alternative water supplies).</p> <p>For permits in effect as of June 16, 2011, new permit condition requires investigation of well complaints.</p>	<p><a href="#">Applicants Handbook Part B</a> Section 3.9.4.2.1</p> <p><a href="#">Applicants Handbook Part B</a> Section 3.9.4.2.6</p> <p><a href="#">Applicants Handbook Part B</a> Section 3.9.4.6</p>
<p style="text-align: center;"><b>Conservation</b></p> <ul style="list-style-type: none"> <li>• Relationship to ELU</li> <li>• Drought credit system</li> <li>• Plan required, with progress reporting</li> <li>• Use class specific</li> <li>• Detailed requirements</li> </ul>	<p>WUP applicants for annual average quantities of 100,000 gpd or greater for agriculture water use are required to submit a conservation plan that insures efficiency of use and provides for increasing efficiencies through water conservation practices.</p> <p>Individual WUPs for less than 100,000 gpd annual average quantities are required to implement certain water conservation measures (e.g., limit daytime irrigation, leak detection and repair program, schedule improvements)</p> <p>All WUP applicants for 100,000 gpd annual average quantities or greater that include crop protection, or have groundwater withdrawal with potential to impact MAPLZ are required to investigate alternatives to groundwater for crop protection. Use of alternatives is required if technically, economically and environmentally feasible.</p>	<p><a href="#">Applicants Handbook Part B</a> Section 2.4.3.2.1</p> <p><a href="#">Applicants Handbook Part B</a> Section 2.4.3.2.1.4</p> <p><a href="#">Applicants Handbook Part B</a> Section 3.9.4.3.3.</p>
<p style="text-align: center;"><b>Supplemental irrigation allocation</b></p>	<p>New and existing permittees within the Dover/Plant City WUCA that have WUP for –</p> <ul style="list-style-type: none"> <li>- use of groundwater for crop protection; or</li> <li>- 100,000 gpd annual average quantities or greater from groundwater; or</li> </ul>	<p><a href="#">Applicants Handbook Part B</a> Section 3.9.4.4</p>

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<ul style="list-style-type: none"> <li>• Allocation and actual usage</li> <li>• Metering</li> <li>• Crop reporting</li> <li>• Frost / freeze and market conditions</li> </ul>	<p>- groundwater quantities to provide crop protection quantities to be used or withdrawn from any combination of sources, which if withdrawn from groundwater alone, would have a potential impact to MAPLZ; or</p> <p>- groundwater quantities to provide supplemental irrigation for a use that typically requires crop protection and where such protection could be achieved through groundwater withdrawals, but alternative protection methods are proposed</p> <p>are required to meter withdrawal quantities from each facility, including backup and standby facilities, and provide meter readings through automated meter reading devices provided by SWFWMD.</p>	<p><a href="#">Applicants Handbook Part B</a> Section 3.9.4.4.2</p>
<p><b>Competition</b></p>		
<p><b>Redistribution of existing allocations</b></p>	<p>A permittee with existing permitted impacts in the MAPLZ as of June 16, 2011, may modify WUP to relocate to a different property all or a portion of the used and unused reasonable-beneficial permitted quantity.</p>	<p><a href="#">Applicants Handbook Part B</a> Section 3.9.4.2.3</p>
<p><b>Alternative water supply program</b></p>	<p>Applicants for WUPs with 100,000 gpd or more are required to evaluate use of alternative water supply (AWS). If applicant in Dover/Plant City WUCA, demonstrates that AWS are vulnerable to being insufficient or unavailable, the WUP will put non-AWS on standby status.</p> <p>AWS can be used to demonstrate "Net Benefit" through Groundwater Replacement Credit</p>	<p><a href="#">Applicants Handbook Part B</a> Sections 2.1.1 &amp; 2.1.1.4</p> <p><a href="#">Applicants Handbook Part B</a> Section 3.9.4.2.6</p>
<p><b>Permit duration</b></p>	<p>Generally 20 years, unless pre-existing adverse impacts are being addressed through a minimum flow and recovery strategy that must be eliminated by the 10<sup>th</sup> year.</p>	<p><a href="#">Rule 40D-2.321, F.A.C.</a></p> <p><a href="#">Applicants Handbook Part B</a> Section 1.5</p>
<p><b>Prohibited use class(es) identified</b></p> <ul style="list-style-type: none"> <li>• E.g. Aesthetic</li> </ul>	<p>Irrigation for unimproved pasture will not be approved.</p>	<p><a href="#">Applicants Handbook Part B</a> Section 2.4.3.1.11</p>
<p><b>Program adopted as a "package"</b></p> <ul style="list-style-type: none"> <li>• "Self-destruct" clause</li> </ul>		