



Draft Technical Memorandum

Prepared For: Middle Ocmulgee Water Planning Council and
Georgia Environmental Protection Division

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Subject: **Management Practices Selection**
Section 6 Supplemental Document
Middle Ocmulgee Regional Water Plan

Introduction

Section 6 of the Middle Ocmulgee Water Development and Conservation Plan (Regional Water Plan)¹ briefly discusses the management practices selection process and presents the water management practices recommended by the Middle Ocmulgee Water Planning Council (Council). This Technical Memorandum provides the detailed decision-making process, including management practices ranking and prioritization, that the Council followed to evaluate and select these practices. All tables referenced in the memorandum are listed at the end of the document.

Background

The Comprehensive State-wide Water Management Plan (State Water Plan) provided the primary guidance to Regional Councils on selecting recommended region-specific management practices to be included in their respective Plans. The State Water Plan categorizes the management practices based water quantity issues (demand, return, and supply) and water quality issues (enhanced water quality standards/monitoring and enhanced pollution management). In addition, the Georgia Environmental Protection Division (EPD) provided the following guidance documents throughout the planning process:

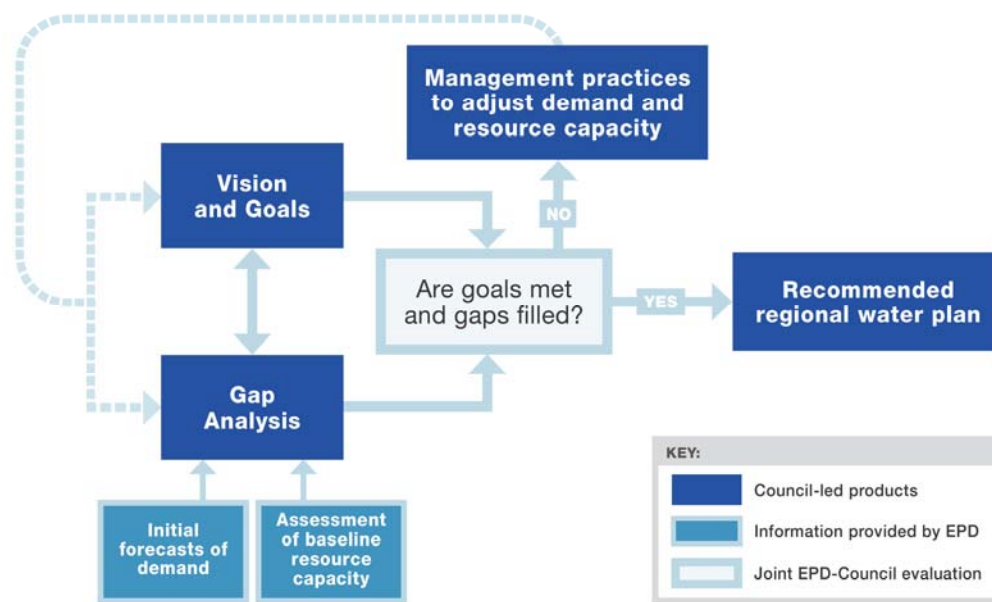
- *Regional Water Planning Guidance*² (July 2009)
- *Additional Guidance for Regional Water Plan*² (memo dated May 19, 2010)
- *Draft Water Conservation Guidance*³ (referred to as CM6 Guidance)
- *Detailed Guidance for Evaluating Practices to Manage Demands*⁴ (referred to as "Detailed Guidance", September 21, 2010)

The Council and its Planning Contractor (PC) used these resources and customized the processes described within the various guidance documents for evaluation of water resource gaps and management practices in the Middle Ocmulgee Region.

Process Overview

The management practices were selected to address water resource gap or issues identified in Resource Assessments⁵ conducted by EPD and the Vision and Goals defined by the Council. The Council selected the recommended management practices through a process that used input from the Technical Committee, council members, EPD, local governments, and the general public. This management practice selection process was based on an iterative process (see Figure 1) detailed in the *Regional Water Planning Guidance*.

Figure 1. Regional Water Planning Process



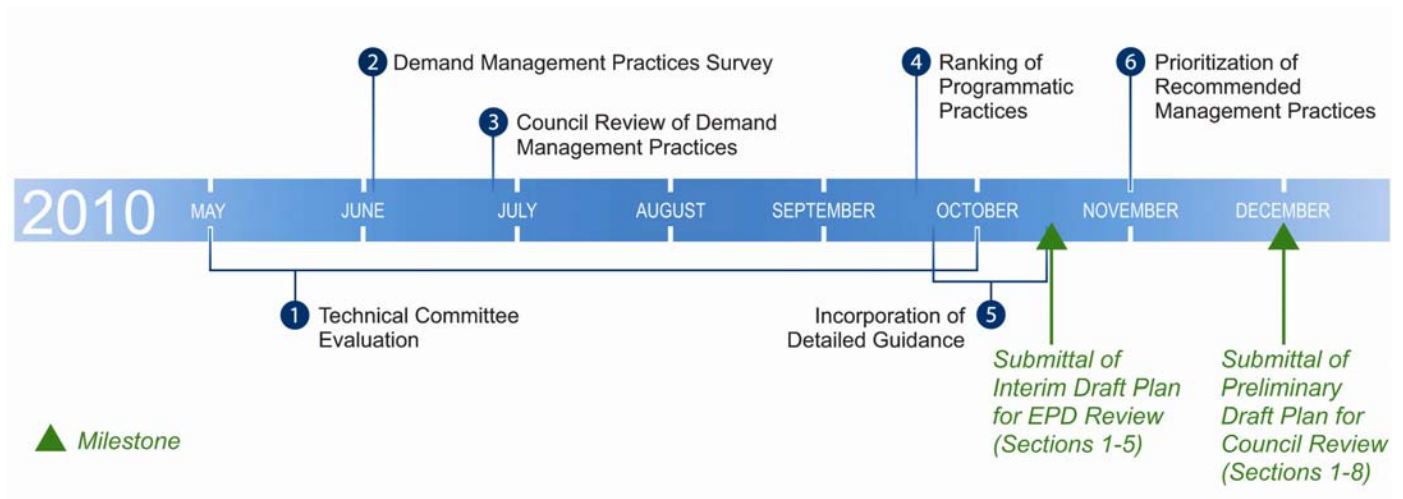
The concept of management practices was initially introduced in 2009, over the course of several Council meetings; however, the bulk of the work on management practices selection was conducted in 2010, after the Resource Assessments for future demand conditions were completed by EPD. The Council’s Technical Committee led the iterative development, review, and revision of all water quantity and quality management practices to be included in the Region’s Water Plan. The full Council reviewed these recommendations in subsequent council meetings, using the region’s Vision and Goals and EPD’s guidance documents as guidelines. Comments received from the general public and local governments during the planning process have been incorporated as appropriate in finalizing the selection. Figure 2 illustrates the interactive nature of the planning process among the Council, the Council’s Technical Committee, EPD and public/local governments.

Figure 2. Management Practices Decision Making Process



Figure 3 is a timeline featuring the major steps and milestones completed in 2010 related to management practice selection. Descriptions of the steps shown in the timeline are detailed below.

Figure 3. Council Management Practices Selection Process



1. Technical Committee Evaluation

In May 2010, the Council's Technical Committee began the discussion of management practices by examining an initial list (Table 1) of potential water quantity and quality management practices based on those categories outlined in the State Water Plan. In the subsequent committee meetings (June through September 2010), the committee continued to discuss and refine the initial list, producing a detailed list of management practices that included expanded descriptions and examples. The PC revised the detailed list based on additional input received from the committee, other council members, and stakeholders.

2. Demand Management Practices Survey

In order to facilitate a sound decision-making process, it was important to ensure that the Council had a clear understanding of demand management practices. Prior to Council Meeting 6 (CM6), the PC conducted a survey of Council members to gauge comprehension of the demand management practices listed in the CM6 Guidance. The survey results (see Table 2) showed that Council needed further discussion on the tiered approach and the initial Tier 2 and 3 practices.

3. Council Review of Demand Management Practices

The tiered approach and the initial Tier 2 and 3 practices listed in the CM6 Guidance were both discussed at CM6 (June 30, 2010). The PC provided an overview of possible water conservation measures and discussed the definitions of the four tiers of measures in EPD's CM6 Guidance with the full Council. The Council also broke into small groups by sector (municipal, industrial, and agricultural) for further discussion on water conservation management practices. In the small group discussions, Council members were asked to suggest additional practices not mentioned in the CM6 Guidance and to recommend practices for consideration by entities in the region. The results of these discussions were documented in the meeting summary for CM6 ⁶.

4. Ranking of Management Practices

At Council Meeting 7 (CM7) (September 22, 2010), Council members ranked the regional importance of programmatic management practices (including demand, water supply, and water quality) as low (1), medium (2), and high (3). The average ranking of each management practice was calculated from these individual rankings and the results are detailed in Table 3.

The Council chose not to rank infrastructure management practices (such as construction of reservoirs, groundwater wells, or treatment facilities) because the necessary type of infrastructure or facility will be determined based on the availability of water resources (generally surface water north of the Fall Line and groundwater south of the Fall Line) and the available assimilative capacity of streams for potential discharges. Each entity may conduct detailed feasibility studies that evaluate its individual issues and resources to determine appropriate management practices. Management practices not ranked by the Council are listed in Table 4.

5. Incorporation of *Detailed Guidance*

EPD made the *Detailed Guidance* (also known as Water Conservation Guidance) available to the Council after the CM7 ranking of programmatic management practices. The Detailed Guidance provided further details and updated tiered conservation practices listed in CM6 Guidance. The PC held two conference calls with the Council's Technical Committee to discuss the additional information listed in the *Detailed Guidance* and its incorporation into the plan under development. In the first call on September 29, the PC reviewed the background of the *Detailed Guidance* and asked each of the Technical Committee members to review the guidance/accompanying tier worksheets for their sectors and to provide comments during a subsequent conference call. During the second call on October 7, the Technical Committee went over the 25 conservation goals and each one of the Tier 2 and Tier 3 practices and commented in detail. As a result, the management practice table in the draft Regional Water Plan was restructured (to incorporate water conservation practices by tier instead of listing individual practices) in the October 15 draft plan submitted for EPD review.

6. Prioritization of Recommended Management Practices

After multiple discussions and considering feedback from stakeholders and EPD, the Council decided to prioritize the recommended management practices so that stakeholders can focus their efforts on the most important and pressing water resource issues. The recommended management practices were divided into two groups: 1) priority management practices; and 2) additional management practices (for details, see Table 6-1 in Section 6 of the Regional Water Plan).

The priority management practices were selected to address water resource gaps and existing regulations. The Middle Ocmulgee Region has no water quantity/availability gap, but does have potential water quality (assimilative capacity) gaps. Therefore, the region only needs to address the Tier 1 demand management practices required by the Water Stewardship Act (SB370) and Tier 2 practices that EPD plans to address in upcoming rules and regulations. These Tier 1 and Tier 2 practices are included as priority management practices. Tier 3 practices are listed in the additional management practices (Table 6-1 of the Regional Water Plan) for entities to consider if they wish to further reduce future water demand and improve efficiency. Tier 4 practices are not required for the Middle Ocmulgee Region because no potential water quantity gap exists and, therefore, are not included in the Regional Water Plan.

The Technical Committee evaluated and refined the language of the recommended Tier 2 and Tier 3 practices, but did not rank them; the Council believed that the benefits would differ throughout the region. Instead, individual counties, utilities, and permittees may decide which demand management practices will be best suited for their service area and customers.

Further Recommendations

The Council recognizes the diverse needs and interests of the stakeholders in the region. Development or updating of local water and wastewater master plans is recommended as a priority practice for identifying specific local needs and issues not examined in detail in the high-level Regional Water Plan. The Council stated repeatedly that it is important for entities within the region to

conduct their own master planning following Regional Water Plan recommendations. Water users/permittees are encouraged to conduct detailed studies at the local level, evaluate the cost and operational implications of these recommended practices, and implement them when they are required to meet projected future needs and to close or minimize predicted/potential water resources gaps.

References

1. Regional Water Plan - Council Review Draft (Working Draft), December 2010, EPD
http://www.middleocmulgee.org/documents/MOC_WDCP_council_review_draft_120810.pdf
2. Regional Water Planning Guidance and Additional Guidance for Regional Water Plan (memo dated May 19, 2010), EPD
http://www.georgiawaterplanning.org/pages/technical_guidance/regional_planning_guidance.php
3. CM6 Guidance, June 2010, EPD
http://www.georgiawaterplanning.org/documents/DetailedGuidanceforEvaluatingPracticestoManageDemand-WebDocument_000.pdf, page 37 to 46
4. Detailed Guidance For Evaluation Practices to Manage Demand, September 2010, EPD
http://www.georgiawaterplanning.org/documents/DetailedGuidanceforEvaluatingPracticestoManageDemand-WebDocument_000.pdf
5. Resource Assessments (Baseline and Future Conditions), EPD
http://www.middleocmulgee.org/pages/resource_assessments/index.php
6. Council Meeting 6 (June 30, 2010) Summary, EPD/Jacobs
http://www.middleocmulgee.org/documents/07222010_MO_CM6_Mtg_Summary_000.pdf

List of Tables

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Table 1: Management Practice Initial List By Category

WATER QUANTITY MANAGEMENT PRACTICES		
	OBJECTIVE	MEANS
Return Management	Increase return to river	Decrease septic tank system usage Decrease land application system usage Increase centralized treatment facilities
Demand Management	Reduce Water Waste and Loss	Use more efficient fixtures/equipment Use water system metering to reduce unaccounted for water Reduce non-revenue water Retrofit golf course facilities using conservation BMPs Implement education and outreach programs
	Decrease outdoor water use	Irrigation meters Full cost accounting Adopt conservation rate structures Provide voluntary landscaper certification
Supply Management	Increase supplies	Expand existing surface water reservoirs Build new supplies – surface or ground water
	Allow interbasin supply management	Interconnect supply systems Interbasin transfers
	Increase water reuse	Increase non-potable, indirect potable, direct potable
WATER QUALITY MANAGEMENT PRACTICES		
	OBJECTIVE	MEANS
Enhanced Pollution Management	Decrease runoff rates	Reduce impervious surfaces Retrofit old stormwater facilities
	Improve water quality	Protect sensitive land/environmental areas Implement OSSMS maintenance outreach programs Establish a CMOM for collection system Establish a Pollution prevention program for MS4 and collection system
	Allow water quality trading	Establish a water trading program
Enhanced Water Quality Standards and Monitoring	Improve water quality	Use advanced treatment at centralized treatment facilities Use constructed wetlands for effluent polishing
	Manage water quality	Adopt statewide/regional/local monitoring programs Coordinate environmental planning Implement source water protection measures Implement education and outreach program

Table 2: Demand Management Practice Understanding Survey Results

1. The SWP lists several conservation practices appropriate for municipal water providers to use when demonstrating the implementation of conservation (SWP, Section 8, implementation action 2(a)iii(1)). Some or all of these practices may be included in the WDCP. <u>Please check your level of understanding for the following.</u>			
	Understand Fully	Needs Further Discussion	Response Count
1. Conduct regular water system audits and adopt a water loss control program.	63.6% (14)	36.4% (8)	22
2. Implement conservation-oriented rate structures.	81.8% (18)	18.2% (4)	22
3. Adopt a water loss control program.	54.5% (12)	45.5% (10)	22
4. Meter all water uses.	72.7% (16)	27.3% (6)	22
5. Adopt a meter calibration, repair and replacement program.	81.8% (18)	18.2% (4)	22
6. Adopt a program to collect information on water use by the largest	59.1% (13)	40.9% (9)	22
7. Enforce current outdoor water use schedule.	90.9% (20)	9.1% (2)	22
8. Meter water reuse and report reuse on a regular basis.	40.9% (9)	59.1% (13)	22
9. Conduct reuse feasibility studies.	31.8% (7)	68.2% (15)	22
10. Consider the use of gray water.	54.5% (12)	45.5% (10)	22
11. Consider programs to replace or retrofit inefficient plumbing fixtures.	86.4% (19)	13.6% (3)	22
12. Update water conservation plans on a regular basis.	77.3% (17)	22.7% (5)	22
		Comments	1
		answered question	22
		skipped question	0





2. The SWP lists several conservation practices appropriate for permitted industrial water users to use when demonstrating the implementation of conservation (SWP, Section 8, implementation action 2(a)iii(2)). Some or all of these practices may be included in the WDCP. Please check your level of understanding for the following.

	Understand Fully	Needs Further Discussion	Response Count
1. Conduct facility-specific audits every three years or when processes change.	63.6% (14)	36.4% (8)	22
2. Measure all water withdrawals.	63.6% (14)	36.4% (8)	22
3. Measure or estimate water reuse and report reuse.	50.0% (11)	50.0% (11)	22
4. Adopt maintenance and repair programs for pipelines, intakes and discharge structures.	95.5% (21)	4.5% (1)	22
5. Install rain or moisture sensor shut-off devices for irrigation systems.	90.9% (20)	9.1% (2)	22
6. Irrigate landscapes in compliance with outdoor water use schedule.	86.4% (19)	13.6% (3)	22
7. Conduct reuse feasibility studies.	45.5% (10)	54.5% (12)	22
8. Consider the use of gray water.	63.6% (1)	36.4% (1)	2
9. Update water conservation plans on a regular basis.	85.7% (18)	14.3% (3)	21
		Comments	0
		answered question	22
		skipped question	0

3. Non-farm water withdrawal permittees and drinking water providers are required to report information on the implementation of conservation practices (SWP, Section 8, implementation action 2(c)i-v)). Please check your level of understanding for the following.

	Understand Fully	Needs Further Discussion	Response Count
1. Provide data and information regarding implementation of water conservation plans and progress towards goals.	63.6% (14)	36.4% (8)	22
2. Include measurable outcomes in terms of reduced or maintained water production or usage.	50.0% (11)	50.0% (11)	22
3. Evaluation of the impact conservation efforts may have on consumptive use of water for the region.	36.4% (8)	63.6% (14)	22
4. Schedule for implementing water conservation practices or achieving goals.	59.1% (13)	40.9% (9)	22
		<i>answered question</i>	22
		<i>skipped question</i>	0

4. Please rate the topic you are most interested in for the CM#6 workgroups.

	Response Percent	Response Count
Municipal Water Providers 	42.9%	9
Industrial and Commercial Water Users 	23.8%	5
Agricultural Water Users/Landscape Water Users/Golf Courses 	42.9%	9
Energy Users 	14.3%	3
<i>answered question</i>		21
<i>skipped question</i>		1

If you are an expert in any of the fields listed for Tier Three: Please note it here including your name and a brief description of your experience.

	Response Count
	2
<i>answered question</i>	2
<i>skipped question</i>	20

Table 3: Management Practices Evaluated through Ranking Process

Management Practice	Total Voters	Percentage			Count			Average Score
		Low (1)	Med (2)	High (3)	Low (1)	Med (2)	High (3)	
WATER QUANTITY PRACTICES								
Develop/Implement Additional <u>Industrial</u> Water Conservation & Efficiency Programs	14	29%	43%	29%	4	6	4	2.0
Develop/Implement Additional <u>Agricultural</u> Water Conservation & Efficiency Programs	13	38%	23%	38%	5	3	5	2.0
Develop/Implement Additional <u>Commercial Landscape</u> Water Conservation & Efficiency Programs	13	31%	31%	38%	4	4	5	2.1
Develop/Implement Additional <u>Municipal</u> (domestic and commercial) Water Conservation & Efficiency Programs	14	7%	57%	36%	1	8	5	2.3
Encourage Conservation-Oriented Rate Structures	12	17%	25%	58%	2	3	7	2.4
Promote Full-Cost System Accounting	13	8%	38%	54%	1	5	7	2.5
Develop/Update Local Water Master Plans - Update every 5 years	13	15%	0%	85%	2	0	11	2.7
WATER QUALITY PRACTICES								
Evaluate Water Quality Trading	15	53%	33%	13%	8	5	2	1.6
Promote/Support Maintenance for Homeowners with OSSMSs (Septic Tanks)	13	46%	46%	8%	6	6	1	1.6
Establish a Stormwater Utility	14	36%	43%	21%	5	6	3	1.9
Develop/Update Local Stormwater Master Plan	15	33%	47%	20%	5	7	3	1.9
Develop Education Programs for Homeowners with OSSMSs (Septic Tanks)	15	27%	47%	27%	4	7	4	2.0
Promote Coordinated Environmental Planning	15	13%	60%	27%	2	9	4	2.1
Adopt Stormwater Management Standards for New Development	13	15%	38%	46%	2	5	6	2.3
Develop/Update Local Wastewater Master Plan	14	14%	36%	50%	2	5	7	2.4
Develop and Implement Stormwater Public Education and Outreach	15	13%	27%	60%	2	4	9	2.5
Develop and Implement Watershed Assessment/Protection Plan Measures	14	14%	21%	64%	2	3	9	2.5
Develop Commercial/Industrial Pollution Prevention Programs	14	0%	50%	50%	0	7	7	2.5
Develop Programs to Protect Sensitive Land	14	7%	29%	64%	1	4	9	2.6
Reduce Runoff from Impervious Surfaces	13	8%	15%	77%	1	2	10	2.7

Note: The table is presented as ranked by the Middle Ocmulgee Council at Council Meeting 7 (September 22, 2010). Some of the recommended management practices in the draft Plan may have been modified based on input received by the Council and stakeholders.

Table 4: Management Practices (NOT Ranked)

Management Practices (not Evaluated through Ranking Process)
WATER QUANTITY - INFRASTRUCTURE
Maximize Existing Surface Water Reservoir Storage
Evaluate New Surface Water Storage Reservoirs
Investigate New Groundwater Sources
Evaluate System Interconnections for Water Supply
Expand Existing Water Treatment Plant
Construct Water Treatment Plant (New)
Promote and Evaluate Beneficial Reuse
Investigate Interbasin Transfers
WATER QUALITY - INFRASTRUCTURE
Upgrade Existing Wastewater Treatment Facilities
Construct Advanced Wastewater Treatment Facilities
Decrease Use of Land Application Systems (LAS) in Urban Areas
Decrease Use of On-Site Sewage Management Systems (OSSMS)/Septic in Urban Areas
Evaluate Constructed Treatment Wetlands (Beneficial Reuse)

Note: The Middle Ocmulgee Council chose not to rank infrastructure management practices because the necessary type of infrastructure or facility will be determined based on the availability of water resources (generally surface water north of the Fall Line and groundwater south of the Fall Line) and the available assimilative capacity of streams for potential discharges. Each entity may conduct detailed feasibility studies that evaluate its individual issues and resources to determine appropriate management practices.