



Georgia's State Water Plan

Upper Oconee Council Meeting 5

March 24, 2010

Agenda

Objectives:

- 1) Review Water Demand Forecasts
- 2) Discuss Resource Assessment Results
- 3) Initiate Management Practice Selection Process.

8:30–9:00 a.m.	Registration
9:00–9:15 a.m.	Welcome and Meeting Overview <i>Chairman, Richard Bentley</i>
9:15–10:45 a.m.	Review of Water Demand Forecasts <i>Brian Skeens, CH2M HILL</i> <i>-Municipal Demands</i> <i>-Industrial Demands</i> <i>-Agricultural Demands (Report from Ag Sub-Committee)</i> <i>-Energy Demands</i>
10:45--11:00 a.m.	Break
11:00 a.m-12:30 pm.	Review of Resource Assessments <i>Doug Baughman, CH2M HILL</i> <i>-Surface Water Quantity</i> <i>-Ground Water Availability</i> <i>-Water Quality</i>
12:30–1:15 p.m.	Lunch <i>Discussion on Resource Assessment Findings and Implication for Management Practices</i>

Upper Oconee Council Meeting 5
March 24, 2010
Agenda, Continued

- 1:15-2:00 p.m. Review of Management Practice Selection Process
Doug Baughman/Brian Skeens - CH2M HILL
-Water Quantity Example
-Water Quality Example
- 2:00-2:30 p.m. Discuss Approach for Development of Management Practices
- 2:30-2:45 p.m. Review Outline of Water Conservation and Development Plan
- 2:45-3:00 p.m. Elected Official and Public Comments
(Also provided after each major topic area)
- 3:00-3:15 p.m. Wrap Up/Council Meeting 5 Evaluation



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Water and Wastewater Forecasting Results

March 2010

Forecasts of water and wastewater demands, along with the resource assessments, form the basis for water planning in Georgia. The State Water Plan requires the preparation of water and wastewater demand forecasts for the following water use sectors: Municipal, Industrial, Agricultural and Energy. The draft forecasts being provided for Council consideration and use in management practice selection are being developed in 10 year increments through 2050.

Municipal (Residential, Commercial and Light Industrial) Water and Wastewater

Draft Municipal water and wastewater demand forecasts were prepared for the *Residential*, *Commercial* and *Light Industrial* water use categories. These categories are termed "*Municipal*" to distinguish from heavy water-using industries, which are forecasted separately as "Industrial" and described below. The calculation of draft municipal water and wastewater demand forecasts utilize both population projections and a water use rate, which in most cases uses 2005 as the base year. These draft forecasts are aggregated by county for the planning period through 2050.

To provide Councils with a starting point for the selection management practices, the draft municipal demand forecasts have been disaggregated among relevant categories. These include water source (groundwater and/or surface water) public supply versus self supply for water, and centralized versus septic for wastewater.

The methodology and input for the draft municipal demand forecasts, such as baseline water use rates (per capita water use rate), were presented to the Councils and to the Municipal Ad Hoc groups in 2009. Feedback was incorporated into these draft March 2010 results and they will be shared with the Municipal Ad Hoc groups prior to presentation at Council Meeting 5. Feedback will be used to revise the forecasts for water use after Council Meeting 5.

The county-level population projections used to forecast municipal water and wastewater demand were developed by the Governor's Office of Planning and Budget (OPB) through contract with the Carl Vinson Institute of Government at the University of Georgia, and are expected to be officially released by OPB during the month of March, 2010. These projections considered comments received on the draft population projections released in 2009. Further questions or comments on these population projections should be directed to the Governor's Office of Planning and Budget.

Industrial Water and Wastewater

In order to prepare industrial water and wastewater demand forecasts for Georgia, the State's major water-using industries were identified and draft industrial water and wastewater demand forecasts were developed using approaches refined by the industrial ad hoc group. Whenever possible, based on input from members of the industrial ad hoc group, product based forecasting methods were used. For example, the carpet manufacturing industry has provided a detailed alternate method. For industries where product based forecasting was not possible, industry-specific workforce projections were used to project the rate of future growth in water use within the industry. These draft

forecasts are aggregated by region for each industry sector for the planning period. To provide the Council with a starting point for the selection of management practices, the draft industrial demand forecasts have been disaggregated among relevant categories, such as the ratio of land application to point discharge for wastewater disposal.

The methodologies described above as well as input EPD has received from industrial users have been presented and discussed with the Councils and also with Industrial Ad Hoc group in 2009. These draft March 2010 results will also be shared with the Industrial Ad Hoc group prior to presentation at Council Meeting 5. Feedback will be used to revise the forecasts for use in the selection of management practices after Council Meeting 5.

The region-specific industry workforce projections that were used for this forecasting were developed by the Carl Vinson Institute of Government at the University of Georgia, under contract to Georgia EPD. These projections reflect comments received from the draft workforce projections numbers released in 2009.

Agricultural Water

Draft forecasts of water use for agricultural irrigation include forecasts of agriculture irrigation water use for the planning period by county and region. For each county, the forecasts list the acres irrigated by crop, and also show irrigation water use under dry, medium, and wet climate conditions. The draft forecasts also indicate whether the source is surface water or groundwater.

Input on the draft forecasts of water use for agricultural irrigation was incorporated into the development of these draft forecasts in 2009, and the draft forecasts have been available on www.georgiawaterplanning.org since prior to Council Meeting 3. Comments included the request to include non-permitted agricultural uses such as plant nurseries and specialty crops in the irrigation water forecasts. These uses are currently being incorporated into the draft Agricultural Forecasts and will be ready for Council use in early 2010.

Current water uses for non-permitted agriculture uses, such as golf course irrigation and livestock production, is being compiled for Council use, but forecasting of the future water needs is not being performed for this first round of regional water planning due to the lack of available data.

Forecasts of water use for agricultural irrigation were developed by the University of Georgia, College of Agricultural and Environmental Sciences, under contract to Georgia EPD.

Energy Water Use

Forecasts of future water needs for electrical energy production are in the process of being developed. The process includes using the population projections developed by OPB and information on the historical relationship between population growth and energy consumption in Georgia to project future energy needs. Then, to forecast the water needed to meet the future energy needs in Georgia, a power ad hoc group is working with EPD to identify the mix of most likely future fuel sources, and likely placement of new and expanded production facilities.

The draft energy water forecasts will be completed in the summer of 2010. Until then, Councils can begin the work of selecting management practices using current electrical energy water demands and short term (~10 year) forecasts of new and expanded facilities from the power ad hoc group.

Draft March 2010 Municipal Water Demand Forecasts for the Upper Oconee (UOC) Water Planning Region

UOC1. Municipal Per Capita Water Use Rate

COUNTY	Public Supplied ¹	Base Year	Self Supplied ²
Baldwin	140	2005	75
Barrow	170	2005	75
Clarke	157	2006	75
Greene	122	2005	75
Hancock	151	2005	75
Jackson	111	2005	75
Laurens	156	2005	75
Morgan	164	2005	75
Oconee	142	2006	75
Putnam	125	2005	75
Walton	112	2005	75
Washington	271	2005	75
Wilkinson	132	2005	75

¹ Based on "Water Use in Georgia 2005" (USGS) or input from local water providers

² Based on data from "Water Use in Georgia 2005" for residential wells or input from local water providers

UOC2. Total Municipal Water Demand (mgd), Average Annual Demand (AAD)

COUNTY	2010	2020	2030	2040	2050
Baldwin	6.66	7.43	8.18	8.90	9.64
Barrow	9.49	13.33	18.46	23.48	28.00
Clarke	18.39	20.22	22.34	24.58	26.99
Greene	1.81	2.28	2.78	3.28	3.69
Hancock	1.17	1.22	1.24	1.28	1.34
Jackson	7.22	9.72	13.02	17.41	23.22
Laurens	5.80	6.51	7.20	7.86	8.52
Morgan	2.25	2.82	3.46	4.15	4.79
Oconee	3.98	5.47	7.35	9.84	13.25
Putnam	2.21	2.56	2.90	3.24	3.60
Walton	8.67	11.09	14.03	16.68	19.00
Washington	3.86	4.15	4.31	4.43	4.63
Wilkinson	1.15	1.16	1.14	1.14	1.13
Grand Total	72.68	87.95	106.41	126.28	147.81

These draft forecasts are for discussion and use in regional water planning only. They reflect an application of current management practices into the future. As such, Councils may opt to adjust this current application.

3/17/2010

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UOC2.1 Total Public Supply Water Demand (mgd), AAD

COUNTY	2010	2020	2030	2040	2050
Baldwin	6.62	7.39	8.13	8.85	9.59
Barrow	6.83	9.63	13.39	17.09	20.46
Clarke	18.37	20.20	22.32	24.56	26.96
Greene	1.51	1.90	2.33	2.75	3.11
Hancock	0.91	0.95	0.97	1.01	1.06
Jackson	6.97	9.38	12.57	16.81	22.43
Laurens	4.08	4.61	5.12	5.63	6.14
Morgan	1.47	1.84	2.28	2.75	3.20
Oconee	2.95	4.06	5.47	7.36	9.94
Putnam	1.58	1.84	2.09	2.34	2.61
Walton	5.52	7.09	9.00	10.73	12.26
Washington	3.12	3.37	3.52	3.64	3.83
Wilkinson	0.92	0.93	0.92	0.92	0.91
Grand Total	60.87	73.20	88.11	104.44	122.50

UOC2.2 Public Supply Surface Water Demand (mgd), AAD

COUNTY	2010	2020	2030	2040	2050
Baldwin	6.62	7.39	8.13	8.85	9.59
Barrow	6.83	9.63	13.39	17.09	20.46
Clarke	18.37	20.20	22.32	24.56	26.96
Greene	1.13	1.43	1.74	2.06	2.33
Hancock	0.91	0.95	0.97	1.01	1.06
Jackson	6.94	9.33	12.51	16.73	22.33
Laurens	3.43	3.87	4.30	4.73	5.15
Morgan	1.47	1.84	2.28	2.75	3.20
Oconee	0.00	0.00	0.00	0.00	0.00
Putnam	1.58	1.84	2.09	2.34	2.61
Walton	5.52	7.09	9.00	10.73	12.26
Washington	0.00	0.00	0.00	0.00	0.00
Wilkinson	0.00	0.00	0.00	0.00	0.00
Grand Total	52.81	63.57	76.73	90.85	105.95

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UOC2.3 Public Supply Groundwater Demand (mgd), AAD

COUNTY	2010	2020	2030	2040	2050
Baldwin	0.00	0.00	0.00	0.00	0.00
Barrow	0.00	0.00	0.00	0.00	0.00
Clarke	0.00	0.00	0.00	0.00	0.00
Greene	0.38	0.48	0.58	0.69	0.78
Hancock	0.00	0.00	0.00	0.00	0.00
Jackson	0.03	0.04	0.06	0.08	0.11
Laurens	0.65	0.74	0.82	0.90	0.98
Morgan	0.00	0.00	0.00	0.00	0.00
Oconee	2.95	4.06	5.47	7.36	9.94
Putnam	0.00	0.00	0.00	0.00	0.00
Walton	0.00	0.00	0.00	0.00	0.00
Washington	3.12	3.37	3.52	3.64	3.83
Wilkinson	0.92	0.93	0.92	0.92	0.91
Grand Total	8.06	9.63	11.38	13.59	16.55

UOC2.4 Self Supply Groundwater Demand (mgd), AAD

COUNTY	2010	2020	2030	2040	2050
Baldwin	0.04	0.04	0.05	0.05	0.05
Barrow	2.66	3.70	5.07	6.39	7.54
Clarke	0.02	0.02	0.02	0.02	0.03
Greene	0.30	0.37	0.45	0.53	0.59
Hancock	0.26	0.27	0.27	0.27	0.28
Jackson	0.25	0.34	0.45	0.60	0.79
Laurens	1.72	1.90	2.07	2.23	2.38
Morgan	0.79	0.97	1.18	1.40	1.60
Oconee	1.03	1.41	1.88	2.49	3.32
Putnam	0.63	0.72	0.81	0.90	0.99
Walton	3.14	4.00	5.03	5.95	6.74
Washington	0.74	0.78	0.79	0.79	0.81
Wilkinson	0.23	0.23	0.22	0.22	0.21
Grand Total	11.81	14.76	18.30	21.84	25.31

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3/17/2010

Draft March 2010 Municipal Wastewater Demand Forecasts for the Upper Oconee (UOC) Water Planning Region

UOC3. Total Municipal Wastewater Produced (mgd), max monthly demand

COUNTY	2010	2020	2030	2040	2050
Baldwin	5.48	6.12	6.73	7.33	7.93
Barrow	7.86	11.04	15.29	19.46	23.21
Clarke	18.61	20.47	22.62	24.88	27.32
Greene	1.63	2.05	2.50	2.95	3.32
Hancock	1.01	1.05	1.07	1.10	1.16
Jackson	6.29	8.47	11.45	15.30	20.42
Laurens	5.34	5.99	6.63	7.24	7.85
Morgan	1.98	2.48	3.05	3.66	4.22
Oconee	3.11	4.31	5.82	7.86	10.66
Putnam	1.90	2.20	2.49	2.79	3.09
Walton	7.62	9.75	12.34	14.68	16.72
Washington	3.62	3.89	4.04	4.16	4.35
Wilkinson	1.03	1.04	1.02	1.02	1.01
Grand Total	65.49	78.85	95.05	112.43	131.27

UOC3.1 Municipal Septic Wastewater (mgd), max month

COUNTY	2010	2020	2030	2040	2050
Baldwin	3.34	3.73	4.10	4.47	4.84
Barrow	5.73	8.04	11.12	14.13	16.83
Clarke	7.37	8.11	8.96	9.86	10.82
Greene	0.86	1.07	1.31	1.54	1.74
Hancock	0.93	0.97	0.99	1.02	1.07
Jackson	4.23	5.69	7.10	9.49	12.66
Laurens	2.88	3.22	3.54	3.85	4.16
Morgan	1.57	1.96	2.41	2.88	3.33
Oconee	2.84	3.74	4.81	6.16	7.91
Putnam	1.36	1.58	1.78	1.99	2.21
Walton	4.94	6.31	7.98	9.47	10.77
Washington	0.71	0.75	0.76	0.77	0.78
Wilkinson	0.84	0.84	0.83	0.83	0.82
Grand Total	37.60	46.01	55.70	66.46	77.92

UOC3.2 Municipal Septic Wastewater (% of wastewater flow)

COUNTY	2010	2020	2030	2040	2050
Baldwin	61%	61%	61%	61%	61%
Barrow	73%	73%	73%	73%	73%
Clarke	40%	40%	40%	40%	40%
Greene	53%	53%	52%	52%	52%
Hancock	92%	92%	92%	92%	92%
Jackson	67%	67%	62%	62%	62%
Laurens	54%	54%	53%	53%	53%
Morgan	79%	79%	79%	79%	79%
Oconee	91%	87%	83%	78%	74%
Putnam	72%	72%	72%	72%	71%
Walton	65%	65%	65%	65%	64%
Washington	20%	19%	19%	18%	18%
Wilkinson	81%	81%	81%	81%	81%
Grand Total	57%	58%	59%	59%	59%

These draft forecasts are for discussion and use in regional water planning only. They reflect an application of current management practices into the future. As such, Councils may opt to adjust this current application.

3/17/2010

UOC3.3 Municipal Centralized Wastewater (mgd), max month

COUNTY	2010	2020	2030	2040	2050
Baldwin	2.14	2.39	2.63	2.86	3.10
Barrow	2.13	3.00	4.17	5.33	6.38
Clarke	11.24	12.36	13.66	15.02	16.50
Greene	0.77	0.97	1.19	1.40	1.59
Hancock	0.08	0.08	0.08	0.09	0.09
Jackson	2.07	2.78	4.35	5.81	7.76
Laurens	2.46	2.78	3.09	3.39	3.70
Morgan	0.41	0.52	0.64	0.77	0.90
Oconee	0.27	0.56	1.01	1.70	2.75
Putnam	0.54	0.62	0.71	0.79	0.88
Walton	2.68	3.44	4.36	5.21	5.95
Washington	2.91	3.14	3.28	3.39	3.57
Wilkinson	0.19	0.19	0.19	0.19	0.19
Grand Total	27.89	32.84	39.36	45.97	53.35

UOC3.4 Municipal Centralized Wastewater (% of wastewater flow)

COUNTY	2010	2020	2030	2040	2050
Baldwin	39%	39%	39%	39%	39%
Barrow	27%	27%	27%	27%	27%
Clarke	60%	60%	60%	60%	60%
Greene	47%	47%	48%	48%	48%
Hancock	8%	8%	8%	8%	8%
Jackson	33%	33%	38%	38%	38%
Laurens	46%	46%	47%	47%	47%
Morgan	21%	21%	21%	21%	21%
Oconee	9%	13%	17%	22%	26%
Putnam	28%	28%	28%	28%	29%
Walton	35%	35%	35%	35%	36%
Washington	80%	81%	81%	82%	82%
Wilkinson	19%	19%	19%	19%	19%
Grand Total	43%	42%	41%	41%	41%

These draft forecasts are for discussion and use in regional water planning only. They reflect an application of current management practices into the future. As such, Councils may opt to adjust this current application.

3/17/2010

Draft March 2010 Industrial Water and Wastewater Demand Forecasts
for the Upper Oconee (UOC) Water Planning Region

UOC4. Total Industrial Water Demand (mgd) (AAD)

NAICS	Industry	2010	2020	2030	2040	2050
0	Other Industrial	0.28	0.34	0.41	0.49	0.59
212	Mining	0.00	0.00	0.00	0.00	0.00
311	Food - Food Manufacturing	3.91	4.42	4.59	4.77	4.99
312	Food - Beverage and Tobacco	0.00	0.00	0.00	0.00	0.00
313	Textiles - Textile Mills	1.25	1.50	1.73	1.90	2.06
314	Textiles - Textile Product Mills	1.04	1.24	1.44	1.57	1.71
315	Apparel	0.00	0.00	0.00	0.00	0.00
321	Wood Products Manufacturing	0.08	0.09	0.10	0.10	0.10
322	Paper	15.31	15.79	16.37	17.02	17.78
324	Petroleum	0.00	0.00	0.00	0.00	0.00
325	Chemicals	0.40	0.50	0.60	0.70	0.80
326	Rubber	0.00	0.00	0.00	0.00	0.00
327	Stone and Clay	36.08	41.84	47.59	53.35	59.11
331	Primary Metals	0.00	0.00	0.00	0.00	0.00
332	Fabricated Metal Products	0.00	0.00	0.00	0.00	0.00
335	Electrical Machinery	0.00	0.00	0.00	0.00	0.00
336	Automotive Manufacturing	0.00	0.00	0.00	0.00	0.00
	TOTAL	58.34	65.72	72.83	79.89	87.14

UOC5. Total Industrial Wastewater Produced (mgd), max monthly demand

NAICS	Industry	2010	2020	2030	2040	2050
315	Apparel	0.000	0.000	0.000	0.000	0.000
336	Automotive Manufacturing	0.000	0.000	0.000	0.000	0.000
325	Chemicals	0.368	0.468	0.563	0.654	0.747
335	Electrical Machinery	0.000	0.000	0.000	0.000	0.000
332	Fabricated Metal Products	0.000	0.000	0.000	0.000	0.000
312	Food - Beverage and Tobacco	0.000	0.000	0.000	0.000	0.000
311	Food - Food Manufacturing	3.518	3.975	4.131	4.296	4.488
212	Mining	0.000	0.000	0.000	0.000	0.000
0	Other Industrial	0.000	0.000	0.000	0.000	0.000
322	Paper	14.886	15.359	15.924	16.548	17.288
324	Petroleum	0.000	0.000	0.000	0.000	0.000
331	Primary Metals	0.000	0.000	0.000	0.000	0.000
326	Rubber	0.000	0.000	0.000	0.000	0.000
327	Stone and Clay	46.002	53.343	60.684	68.025	75.365
313	Textiles - Textile Mills	1.640	1.959	2.267	2.480	2.701
314	Textiles - Textile Product Mills	0.623	0.744	0.862	0.942	1.027
321	Wood Products Manufacturing	0.217	0.260	0.303	0.353	0.415
	TOTAL	67.25	76.11	84.73	93.30	102.03

March 2010 Draft Municipal and Industrial Water and Wastewater Forecasts

Definitions

For the purposes of these forecasts, the following definitions are used.

Centralized = water supplied or wastewater treated by a system that combines multiple users, such as a water/wastewater utility

Industrial = water supplied or wastewater treated by Georgia's largest water using industries. This includes individually permitted systems, and, where industrial water use data was readily available, systems that are supplied by a centralized system (like a utility)

Municipal = water used for or wastewater from domestic (residential), commercial, and light industrial uses, not otherwise forecasted in the industrial forecasts. Includes both "public" and "self-supply".

Public = water or wastewater services provided by a centralized entity, often a public utility, but also including privately-owned utilities. This does not include water supplied to an individual entity from an onsite well (self-supply).

Self-supply = water supplied to an individual entity, such as a house or business, from an individual well.

Septic = Onsite sewerage treatment that may include systems that service a single or small number of units, usually from a single entity. A common example is a septic tank with drainfield for disposal

The logo features a blue outline of the state of Georgia on the left, with a horizontal blue brushstroke extending to the right across the page. The text "Georgia's State Water Plan" is positioned to the right of the outline, with "Georgia's" in a smaller font and "State Water Plan" in a larger, bold font, all in blue.

Georgia's State Water Plan

Draft Water Resource Assessments

"If Georgia is to develop water resource plans that will allow continued sustainable use and enjoyment of the state's water resources, the state must first define the capabilities and current use of these water resources."

- Georgia Comprehensive State-wide Water Management Plan (2008) -

As described in the State Water Plan, resource assessments are evaluations of the capacity of water resources to meet demands for water supply and wastewater discharge without unreasonable impacts.

In January and February 2010, EPD conducted Joint Meetings of the Regional Water Planning Councils to: 1) deliver the preliminary results of the draft baseline resource assessments to the regional water planning councils; and, 2) provide representatives of each council with the first opportunity to exchange information with representatives of the other councils with whom they share water resources.

Preliminary Results of Draft Baseline Resource Assessments

- Groundwater availability
 - indicate that for all of the areas evaluated there is more groundwater available than is withdrawn to meet current demands
 - exceptions are seen in areas on the coast affected by saltwater intrusion and portions of the Lower Flint River basin (which are currently subject to special permitting provisions)
- Surface water availability
 - indicate that in much of the state there is sufficient water to meet current demands for offstream, consumptive water use and instream flow targets, even during dry periods
 - in some parts of the state, instream flow targets and current offstream needs cannot be fully met during dry periods
- Surface water quality
 - indicate that many of the water bodies evaluated are likely to be able to assimilate additional wastewater discharge (although downstream effects will have to be evaluated)
 - for some waterbodies, high levels of treatment may be required for additional wastewater discharges
 - non-point sources are a large source of nutrients and are likely causing higher values of chlorophyll-a in lakes

Technical Questions

If Councils identify the need for more detailed technical information on the resource assessment methodologies (i.e., what was done, how, and why those choices were made), EPD will provide the information as requested by each Council in a manner consistent with the 2010 project schedule.

Council Meetings

Each Council will conduct meetings in 2010 to: 1) evaluate how future water and wastewater demands can be met without unreasonable impacts; 2) select management practices; and, 3) draft an initial recommended regional water plan.

The preliminary results of the draft baseline resource assessments provide a starting point for each Council to consider how to meet the vision and goals for the region's water resources. Each Council will use the draft resource assessments along with the draft water demand forecasts to select the management practices that will be used in the region.

To evaluate how future water and wastewater demands can be met without unreasonable impacts, EPD will run the resource assessment models with the water demand forecasts and specific inputs on management practices from each Council. For example, a Council may determine the anticipated locations of additional groundwater withdrawals and the volume of groundwater desired for a location.

Each Council will coordinate the selection of management practices with other councils and evaluate the fiscal impacts and impacts on shared water resources of the management practices with input from local government representatives.

Submission of Comments

In the first quarter of 2010, EPD will release a synopsis of each draft water resource assessment for public comment via www.georgiawaterplanning.org and the ten regional websites. The public comment period will be open for at least sixty days from the time of posting. During that time, the detailed technical report associated with each draft water resource assessment will also be released. EPD will consider all comments, provide responses and make necessary revisions to the draft water resource assessments.

Refinements and adjustments to the draft water resource assessments are expected and will be based on input from Council members, interested groups, the general public and the scientific and engineering advisory panel.

Councils will use preliminary drafts of the baseline water resource assessments to begin the initial selection of management practices.

Regional Water Plan Table of Contents

Notes:

1. This draft represents a document incorporating comments and input by EPD staff, planning contractor (or PC) staff, and other consultant staff;
2. This table of contents represents the layout and organization for a 50-75 page document with associated appendices and technical attachments. The recommended number of pages for each chapter is provided in {brackets};
3. The target audiences for the plans are EPD, GEFA, the Councils and implementing entities;
4. Numbered sections and sub-sections reflect minimum plan content; asterisks (*) reflect required content that must be included somewhere in that section or sub-section, and bullets reflect suggested content; and
5. In cases where required content is required in the State Water Plan, the Section of the Plan is indicated.

EXECUTIVE SUMMARY {8 pages}

A comprehensive overview of the Regional Water Plan that includes the major findings and recommendations.

1. INTRODUCTION {7 pages}

Overview of the background and purpose of the State Water Plan from a state-wide perspective. Includes the vision of the State Water Plan and how that related to the development of the WDCPs.

The majority of this section (1.1 – 1.3) will contain consistent background material developed by EPD and/or one consultant with Region-specific additional material developed by Councils and PCs.

1.1. The Significance of Water Resources in Georgia

Outlines the overarching vision for sustainable water use in Georgia created in the State Water Plan.

1.2. Statewide Priorities

Provides statewide overview of water issues and identifies interregional trends. Overview of priorities and requirements for Regional Water Plans

from the State Water Plan. Includes a discussion of existing State laws or rules impacting water use.

1.3.State and Regional Water Planning Process

Overview of the relationship between the State Water Plan and other plans, regulations, and agencies. Explain the Regional Water Planning process and formation. (Note: a list of Council members is provided in the Acknowledgement page.)

- * Outline the steps and meetings to coordinate with neighboring water planning regions (14.7.c.ii).

1.4.The XYZ Regional Vision and Goals

A Region-specific section discussing Council formation, highlighting the governance structure, and presenting any responsibilities that are unique to the region.

- * Water quantity and quality management objectives (14.7.c.viii).

2. THE XYZ WATER PLANNING REGION {8 pages}

Section 2 gives a general overview of the region's economy, population, land use, and municipalities, and provides an understanding of the unique characteristics within the water planning region.

- * Local Governments, Municipalities and Jurisdictions in Region (14.7.c.i).

2.1.History and Geography

Includes a description of municipal boundaries, watersheds, cities, water bodies, physiographic region, unique history or physical features.

2.2.Characteristics of Region

Provide a brief overview of current population and major employers. Include discussion of special population considerations, such as those from universities or military bases. Overview existing land use including unique major land uses or physical features.

2.3.Local Policy Context

Includes discussion on existing rules that impact water use specific to the region. Describes important aspects of Comprehensive Planning and

other policy in the region as it relates to water resources. Note: state regulations highlighted in Section 1.2.

3. WATER RESOURCES OF THE XYZ REGION {12 pages}

Overview of the baseline resource assessment results.

3.1. Major Water Use in Region (14.7.c.iii)

Includes a summary of permitted and unpermitted water uses.

3.2. Resource Assessments (14.7.c.iv)

Includes a brief overview of the resource assessment methodology. Note: A description of the resource assessment methodologies will be provided by EPD and/or a consultant. These methodology descriptions will be common for all plans. The bulk of the sub-section, however, will include a consolidated summary of each resource assessment completed by the PCs.

3.2.1. Surface Water Quality (Assimilative Capacity)

3.2.2. Surface Water Quantity

3.2.3. Groundwater Quantity/Quality

3.3. Ecosystem Conditions and Instream Uses

Include (where applicable) discussion on:

- Wildlife and Fisheries Resources (such as sport fisheries - public fishing areas and major reservoir and river fisheries)
- Nongame Wildlife (reference information from WRD and State Wildlife Action Plan or SWAP – species or habitats of concern in that region)
- Priority Conservation Areas and Activities
- Recreational Uses (unique/notable water-based recreational areas or recreational flow requirements or flow regimes)

4. FORECASTING FUTURE WATER RESOURCE NEEDS {10 pages}

Summary of the projections by time period with a brief summary of the projection methodology. Begin each sub-section with a brief description of methodology. NOTE: One summary methodology common to all Regional Water Plans will be provided by EPD and/or contractor with region-specific modifications as necessary.

- * Forecasts of 10-, 20-, 30-, 40- year population expectations, water demands, wastewater returns, land surface types and distribution, and employment characteristics (14.7.c.v).
- * Forecasted uses of water bodies for water supply, wastewater discharge, and stormwater flows for each forecast period (14.7.c.vi).

4.1. Municipal Forecasts

- Population Projections
- Water Forecasts
- Wastewater Forecasts

4.2. Industrial Forecasts

- Employment Projections
- Water Forecasts
- Wastewater Forecasts

4.3. Agriculture Forecasts

- Agricultural Crop Irrigation
- Other Commodity Sectors
- Results

4.4. Thermoelectric Power Forecasts

- Results

4.5. Total Water Demand Forecasts

Provides a summary of the total water and wastewater demand for the water planning region.

- Water Overall Results
- Wastewater Overall Results

5. COMPARISON OF AVAILABLE WATER RESOURCE CAPACITIES AND FUTURE NEEDS {7 pages}

Outlines the process for comparing resource capacities and any identified future water use challenges that influence the selection of water management practices.

- * Comparison of the forecasts with the resource assessments (14.7.c.vii).

5.1. Groundwater Availability Comparisons

5.2. Surface Water Availability Comparisons

5.3. Surface Water Quality Comparisons (Assimilative Capacity)

6. ADDRESSING WATER NEEDS AND REGIONAL GOALS {13 pages}

Describes the selection of water management practices that address any gaps identified during the resource comparisons with a focus on sustainable water use.

6.1. Identifying Water Management Practices

- Existing Plans and Practices
- Selection of Management Practices and Evaluation Criteria
- Coordination Between Regions
- * Challenges and uncertainties in water planning – includes proposals for addressing data and information needs (14.7.c.xi).

6.2. Selected Water Management Practices for the XYZ Region

Description/final list of selected water management practices and their implications (14.7.c.ix). Management practices may include recommendations for future data collection efforts (14.7.c.xi).

6.2.1. Near-term Water Management Practices

6.2.2. Long-term Water Management Practices

6.2.3. Interregional Implications of Selected Management Practices

6.3. Fiscal Implications

Planning level costs of the selected water management practices as well as funding sources and options (14.7.c.xiv).

7. IMPLEMENTING WATER MANAGEMENT PRACTICES {7 pages}

Summary of the water management practices and long-term implementation within the water planning region.

7.1. Implementation Responsibility

Overall summary of permittees and GEFA grant/loan recipients who are responsible for implementation of water management practices.

7.2. Implementation Schedules

Summary of the water management practices, timeframe for implementation (near-term and long-term), areas of the water planning region where the water management practice applies, and the specific permittees responsible for implementation.

7.3. Alignment with Other Plans

Overall comparison of consistencies and differences between the Regional Water Plan and other regional and local plans (14.7.c.x).

7.4. Recommendations to State

Recommendations for actions by the State that support implementation of the Regional Water Plan (14.7.c.xiii). Recommendations may include those related to future data collection (14.7.c.xi).

8. MONITORING AND REPORTING PROGRESS {3 pages}

8.1. TBD Benchmarks (14.7.c.xii)

8.2. TBD

8.3. TBD

Bibliography

Glossary

Appendices

- A.** Population and Employment Forecasts
- B.** Implementation Details
- C.** Public Participation
- D.** Coordination with Partnering Agencies
 - a. DCA
 - b. State Wildlife Action Plan

Supporting State Water Plan Documents or TM's

- 1.** Process of Water Development and Conservation Plan Development [TM]
- 2.** Visioning and Goal Setting Process [TM]
- 3.** Forecasting Methodology [TM]
- 4.** Gap Analysis [TM]
- 5.** Management Practice Selection Process [TM]
- 6.** Process for Benchmark Selection [TM]