



Georgia's
State Water Plan

Industrial Water and Wastewater Demand Forecasts

www.georgiawaterplanning.org

Demand Forecasting Categories

- **Agricultural** – Major forecasts complete; evaluating if/how to incorporate smaller use/unpermitted sectors
- **Energy** – Forecasts under development with assistance from power/energy companies
- **Municipal** – Includes residential, commercial, and light industrial water use
- **Industrial** – Major water using industries

Preliminary Forecasts

Forecasts are:

- Based on the continuation of current trends and practices into the future
- Excluding any new management practice that may alter demands
- Not intended to establish the efficiency of water use
- Basis for regional water planning, not for making individual permit decisions

Reminder: To ensure confidentiality, specific industry data will not be presented

Major Water-Using Industries in Georgia

Industry	SIC Code	NAICS Code	Industry	SIC Code	NAICS Code
Mining	14	212	Petroleum	29	324
Food	20	311	Rubber	30	326
		312			
Textiles	22	313	Stone and Clay	32	327
		314			
Apparel	23	315	Primary Metals	33	331
Paper	26	322	Fabricated Metal Products	34	332
Chemicals	28	325	Electric Machinery	36	335

Additional Industry Categories

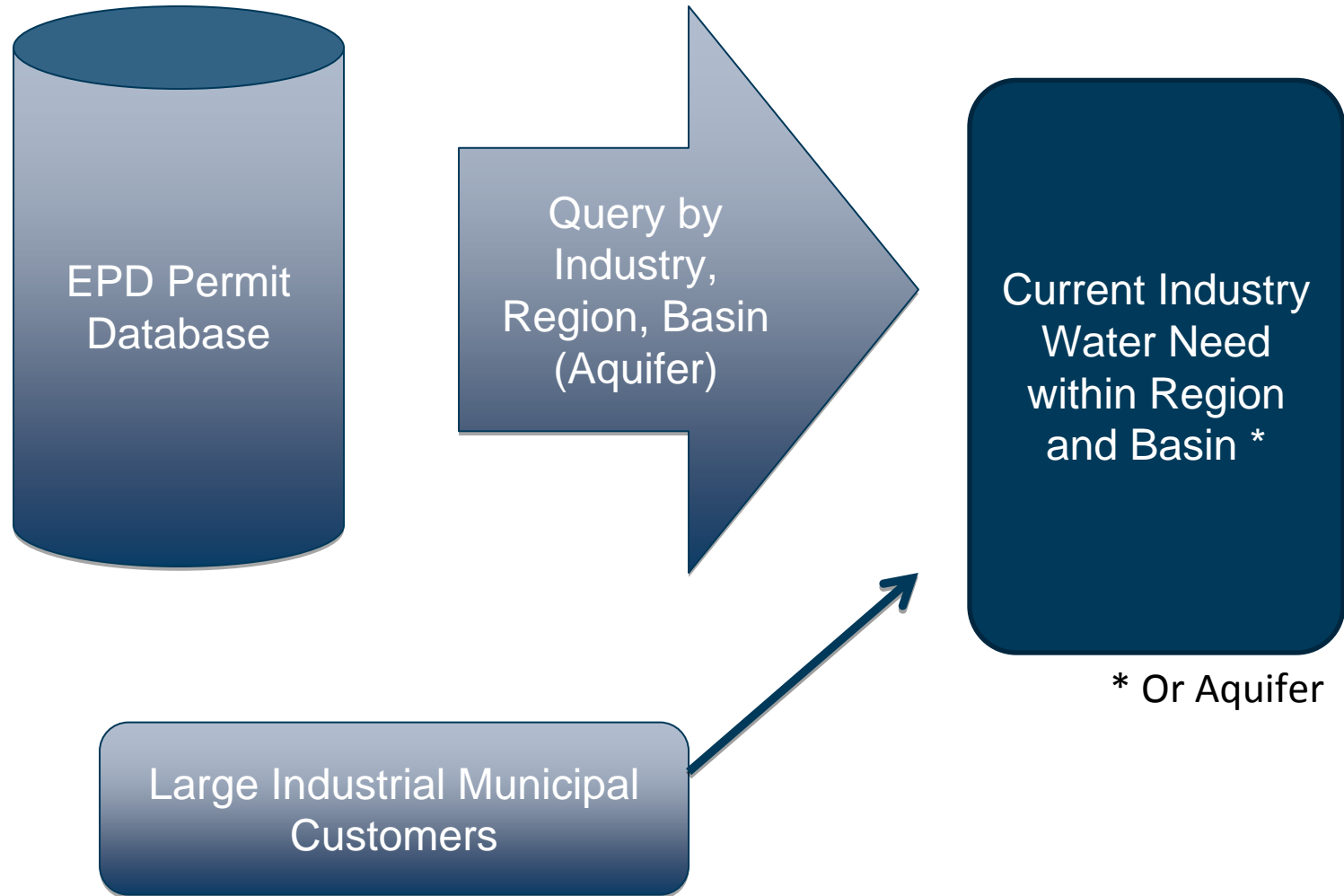
Automotive Manufacturing (NAICS 336)

Added to reflect its large employment role but not necessarily a large water user

Other Industries

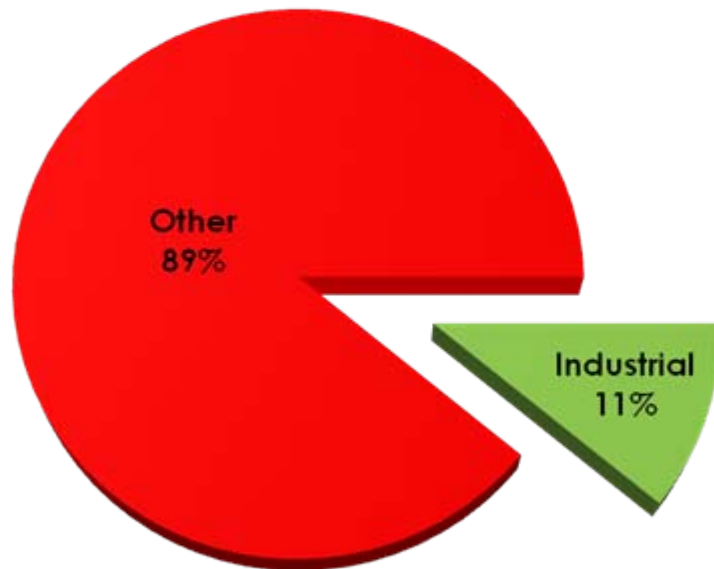
Other industries may be removed from Municipal category to address anomalies (e.g., large industrial park accounted for in industrial)

Industrial Water Needs (Withdrawals) by Basin



Industrial Water Withdrawal Percentages

Industrial Water Withdrawals
as a Percent of Total
Withdrawals in Georgia



Combined Withdrawals of 13
Major Industries as a Percent
of Total Industrial Withdrawal
in Georgia



Regional Industrial Water Demand by NAICS Code

NAICS	Category	Ground Water	Surface Water	Municipal Supplied	Total MGD
0	Other Industrial	-	-	-	-
212	Mining	PENDING			
311	Food- Food Manufacturing	PENDING			
312	Food- Beverage and Tobacco	PENDING			
313	Textiles- Textile Mills	-	2.2	-	2.3
314	Textiles- Textile Product Mills	PENDING			
315	Apparel	-	-	-	-
322	Paper	-	-	-	-
324	Petroleum	-	-	-	-
325	Chemicals	-	-	-	-
326	Rubber	-	-	-	-
327	Stone and Clay	PENDING			
331	Primary Metals	-	0.1	-	0.1
332	Fabricated Metal Products	-	-	-	-
335	Electrical Machinery	-	-	-	-
336	Automotive Manufacturing	-	-	-	-
	Total	0.1	2.3	-	2.4

Water Need (Withdrawals) Increases at Employment Rate of Growth



* Or Aquifer

- Without production data, water need is a function of employment
- Except for efficiency improvements, water need will remain constant if employment does not grow (i.e., water need will not decrease)
- The projection of future water need may be adjusted for industry production if adequate, credible data are publicly available

Projecting Future Growth

- Water use by NAICS category increases at the same rate as NAICS employment (growth estimates completed by CVIOG)
- If NAICS employment decreases, then NAICS water use remains the same
- Other Industries: if not NAICS identified, increases with total employment
- Percent of category water by source remains the same

Regional Employment Growth Rates

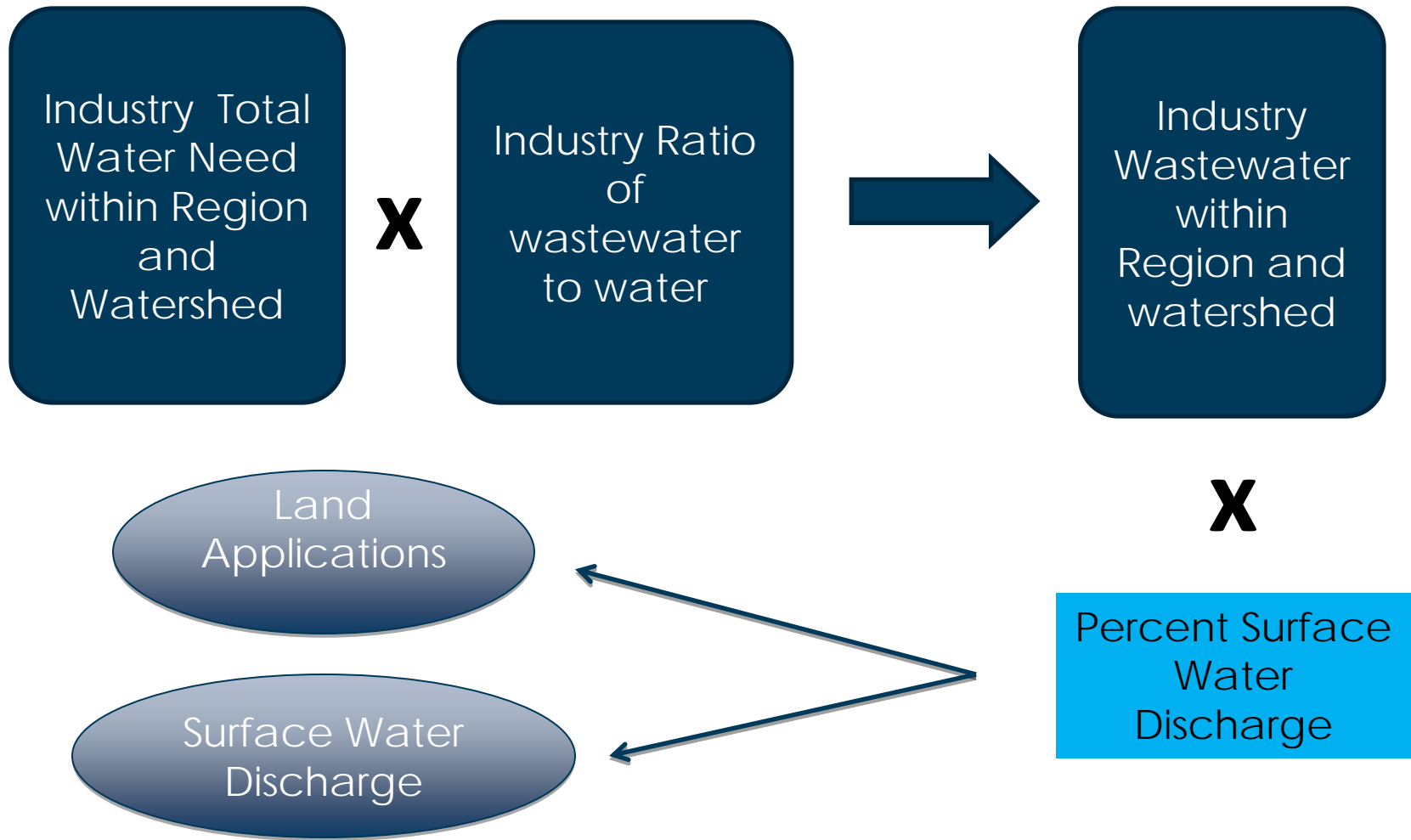
Employment Percent Growth

NAICS	Industry	2005-10	2010-15	2015-20	2020-25	2025-30	2030-35	2035-40	2040-45	2045-50
0	Other Industrial	2.15%	0.00%	0.98%	1.29%	0.78%	0.92%	0.97%	0.96%	0.99%
212	Mining	0.00%	0.00%	5.65%	0.00%	0.19%	0.24%	0.26%	0.26%	0.28%
311	Food- Food Manufacturing	2.88%	0.00%	1.98%	0.79%	0.35%	0.30%	0.28%	0.27%	0.29%
312	Food- Beverage and Tobacco	0.96%	0.00%	6.24%	0.51%	0.23%	0.25%	0.26%	0.27%	0.28%
313	Textiles- Textile Mills	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
314	Textiles- Textile Product Mills	5.02%	0.00%	1.79%	0.43%	0.23%	0.25%	0.26%	0.26%	0.28%
315	Apparel	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
322	Paper	0.00%	0.00%	0.00%	1.63%	0.26%	0.24%	0.25%	0.26%	0.28%
324	Petroleum	0.00%	6.47%	2.41%	0.10%	0.25%	0.27%	0.28%	0.28%	0.30%
325	Chemicals	6.47%	0.00%	3.03%	2.79%	1.25%	0.76%	0.53%	0.41%	0.37%
326	Rubber	0.00%	1.50%	1.68%	1.38%	0.03%	0.26%	0.31%	0.33%	0.36%
327	Stone and Clay	4.79%	0.67%	0.00%	2.63%	0.00%	0.00%	0.12%	0.22%	0.28%
331	Primary Metals	0.16%	0.00%	0.00%	4.17%	1.57%	0.52%	0.32%	0.28%	0.28%
332	Fabricated Metal Products	0.00%	0.00%	0.00%	1.20%	0.17%	0.33%	0.39%	0.43%	0.47%
335	Electrical Machinery	4.80%	0.00%	0.00%	2.74%	1.41%	1.18%	0.99%	0.84%	0.74%
336	Automotive Manufacturing	10.80%	0.00%	10.10%	3.57%	0.00%	0.00%	0.00%	0.00%	0.00%

Region Industrial Water Demand Forecast

NAICS	Category	Surface Water		Groundwater		Municipal		Total	
		2010	2050	2010	2050	2010	2050	2010	2050
0	Other Industrial	-	-	-	-	-	-	-	-
212	Mining	PENDING							
311	Food- Food Manufacturing	PENDING							
312	Food- Beverage and Tobacco	PENDING							
313	Textiles- Textile Mills	2.2	2.2	-	-	-	-	2.2	2.2
314	Textiles- Textile Product Mills	PENDING							
315	Apparel	-	-	-	-	-	-	-	-
322	Paper	-	-	-	-	-	-	-	-
324	Petroleum	-	-	-	-	-	-	-	-
325	Chemicals	-	-	-	-	-	-	-	-
326	Rubber	-	-	-	-	-	-	-	-
327	Stone and Clay	PENDING							
331	Primary Metals	0.1	0.1	-	-	-	-	0.1	0.1
332	Fabricated Metal Products	-	-	-	-	-	-	-	-
335	Electrical Machinery	-	-	-	-	-	-	-	-
336	Automotive Manufacturing	-	-	-	-	-	-	-	-
	Total	2.3	2.3	0.1	0.1	-	-	2.4	2.4

Regional Industrial Wastewater Demand



Region Industrial Wastewater Forecast

NAICS	Category	Surface Discharge		Land Application		Total MGD	
		2010	2050	2010	2050	2010	2050
0	Other Industrial	-	-	-	-	-	-
212	Mining	PENDING					
311	Food - Food Manufacturing	PENDING					
312	Food - Beverage and Tobacco	PENDING					
313	Textiles - Textile Mills	1.9	1.9	-	-	1.9	1.9
314	Textiles - Textile Product Mills	PENDING					
315	Apparel	-	-	-	-	-	-
322	Paper	-	-	-	-	-	-
324	Petroleum	-	-	-	-	-	-
325	Chemicals	-	-	-	-	-	-
326	Rubber	-	-	-	-	-	-
327	Stone and Clay	PENDING					
331	Primary Metals	0.1	0.1	-	-	0.1	0.1
332	Fabricated Metal Products	-	-	-	-	-	-
335	Electrical Machinery	-	-	-	-	-	-
336	Automotive Manufacturing	-	-	-	-	-	-
	Total	2.1	2.1	-	-	2.1	2.1

Industry Stakeholder Input

- EPD convened a meeting of industry representatives on August 18, 2009
- Representatives of the carpet, mining, pulp & paper, and food manufacturing industries provided information relative to future water use in the state for those industries
- Industry water forecasts will be compared with information provided by these industries
- Differences between the forecasts will be discussed with industry representatives

Completing Industrial Water/Wastewater Forecasts – Next Steps

- Sharing results with the industry ad hoc group and public (via website)
- Soliciting any additional input and making modifications where warranted
- Reconfirming results with industry ad hoc group
- Completing forecasts for regional councils

Municipal Water Next Steps

- Re-convene 'expanded' regional ad hoc groups to further refine county and municipal gpcd's and transient population considerations (*early December, '09*)
- Develop preliminary municipal water forecasts (*January-February, '10*)
- Hold 'presentation of preliminary forecasts' meeting (*early February, '10*)
- Refine forecasts (*February, '10*)

One Last Item...Per Capita

County	USGS 2005 Per Capita	Preliminary Adjusted Per Capita
Carroll	141	
Chattahoochee	72	94
Clay	141	
Haralson	84	
Harris	430	135
Heard	129	
Muscogee	174	
Quitman	74	79
Randolph	179	
Stewart	51	167
Troup	206	Pending