



CALL-IN INSTRUCTIONS



US Army Corps
of Engineers®

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AGENDA



US Army Corps
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- Meeting Guidelines and Introductions
- Summary of last meeting
- Industrial Manufacturing Water Use
- Projection Methods
- Open Discussion
- Upcoming Meeting Schedule



FEEDBACK



US Army Corps
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1. DURING THE MEETING:

Please use the Chat Box feature to enter questions.

2. AT THE END OF THE MEETING:

Time for open discussion and questions.

3. AFTER THE MEETING:

Please send any input to: scwatermodels@clemson.edu

Find meeting materials at: www.scwatermodels.com

<https://www.clemson.edu/public/water-assessment/index.html>

Speaker:

- HC HOLLY CARPENTER (me)
- HC HOLLY CARPENTER (Host)



WEBEX QUICK START SCREEN



HC HOLLY CARPENTER's Personal Room
Host: HOLLY CARPENTER
Meeting number: 967 985 438
Leave Meeting

Participants

Speaker:

- HC HOLLY CARPENTER (me)
- HC HOLLY CARPENTER (Host)

Audio Connection

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The meeting will call you.
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Chat

from HOLLY CARPENTER to everyone:
Hello, this is a test!

Send to: Everyone

Send

Notes

Save



INTRODUCTIONS



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Please enter the following in the “Chat” box
 (“Send to: Everyone”):

1. Your Name
2. Job Title
3. Organization

Example: Holly Carpenter, Project Manager, USACE Charleston District

STAKEHOLDER PARTICIPATION

- Is there anyone here who was absent from the previous meeting?
- Does anyone have specific knowledge or experience in industrial manufacturing water use?
- Final Draft of Water Demand Methods (TAC Sign-Off)

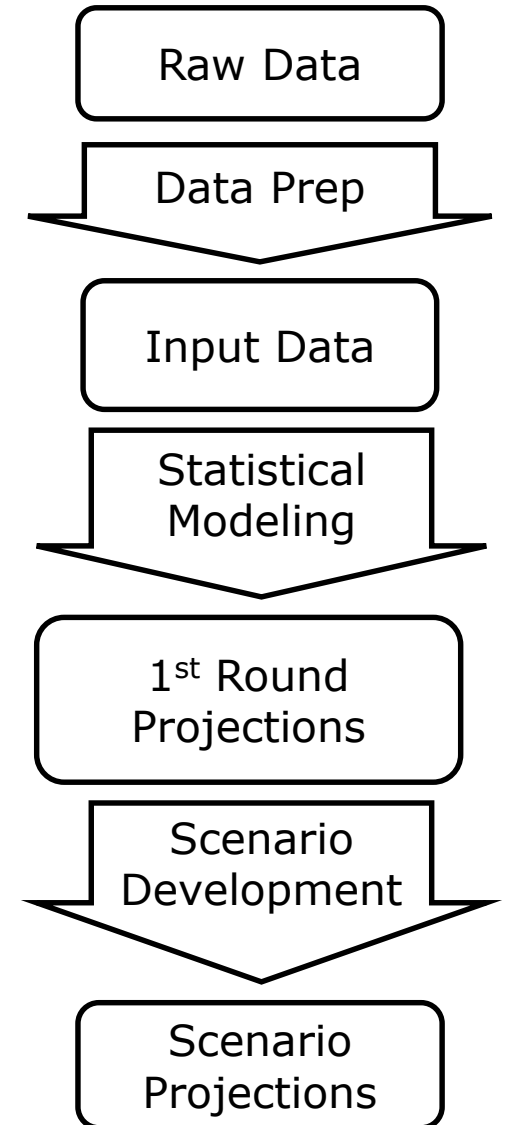
WATER DEMAND PROJECT

Scope

- Develop methods for 50 year water demand projection
- Categories of off-stream uses:
 - Power, Public Supply, Industry, Agriculture, Golf, Domestic
- Savannah basin pilot

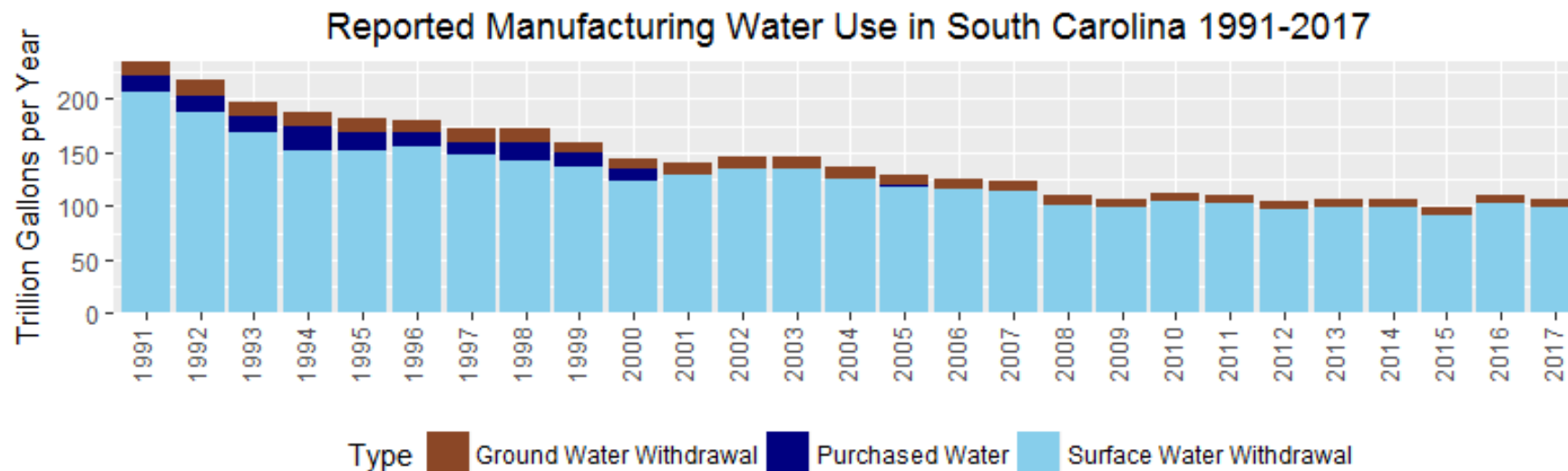
Timeline

- Methods Report in February
- Pilot Report in May

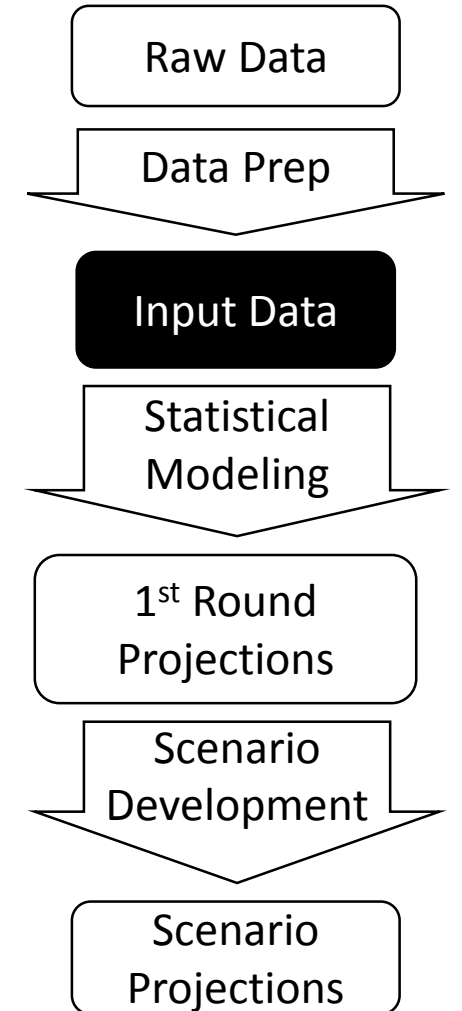


Manufacturing Water Use Data

1. Monthly withdrawals and discharges (SCDHEC)
2. Industry classifications (NAICS & SIC)
3. National level projections of output by 2-digit NAIC to 2050 (USEIA)
4. Economic Census GDP per sector per county 2012, 2017 pending (BLS)
5. Census of Employment & Wages (CEW, BLS)
6. Employment projections by 3-digit NAIC and multi-county area to 2026 (SCDEW)
7. Water use estimates per employee by 2-digit NAIC (IWR-Main)



Source: SCDHEC Water Use Database



Manufacturers in SC reporting withdraws of 1 Million Gallons per Day or more in 2017.

Name	County	Subsector	Average Use (MGD)						
			Intake Volume		Withdrawal		Discharge		
			Grnd	Srfc	2012	2017	2012	2017	
DAK Americas LLC-Columbia Site	Calhoun	Plastics	0%	100%	53.5	53.3	98.8	103.7	
International Paper Georgetown Mill	Georgetown	Paperboard	0%	100%	29.9	32.5	26.2	29.4	
INTERNATIONAL PAPER EASTOVER MILL	Richland	Paper	2%	98%	31.1	31.9	30.3	31.9	
KAPSTONE CHARLESTON KRAFT LLC	Charleston	Paperboard	0%	100%	26.5	28.8	26.8	29.4	
Resolute FP US Inc	York	Pulp	0%	100%	28.6	27.4	20	23.6	
Shaw Industries, Inc. Plant 8S	Lexington	Carpet	0%	100%	20.6	25.1	15.9	25	
Domtar Paper Company, LLC/Marlboro Mill	Marlboro	Paper	0%	100%	16	17.1	14.4	16.7	
WestRock CP, LLC/Florence Mill	Florence	Paperboard	0%	100%	16.9	16.3	12	11.6	
Sonoco Products Company/Hartsville Complex	Darlington	Paperboard	22%	78%	16.3	9.7	12.8	5.1	
Kimberly Clark Corporation Beech Island Mill	Aiken	Sanitary paper	1%	99%	6.4	9	5.1	10.6	
BP AMOCO CHEMICALS / COOPER RIVER PLANT	Berkeley	Chemical products	0%	100%	7.2	5.6	4.7	4.8	
3V Sigma USA	Georgetown	Chemical products	9%	91%	1.8	4.6	-	-	
NATION FORD CHEMICAL CO	York	Chemical products	0%	100%	2.5	4.4	2.4	4.3	
NUCOR STEEL BERKELEY PLANT	Berkeley	Steel	100%	0%	3	3.3	2.3	2.4	
ARCHROMA MARTIN PLANT	Allendale	Plastics	100%	0%	1.8	2	2.6	2.8	
Cooper River Partners LLC	Berkeley	Synthetic fibers	0%	100%	2.5	2	2.3	2.1	
MILLIKEN & CO - MAGNOLIA PLANT	Cherokee	Apparel	0%	100%	2.1	1.9	2.3	2.6	
DAK AMERICAS LLC COOPER RIVER PLANT	Berkeley	Plastics	0%	100%	0.7	1.5	1.1	1.1	
Wellman Plastics Recycling, LLC	Florence	Waste Management	100%	0%	2	1.4	-	-	
DSM Nutritional Products, LLC	Williamsburg	Nutritional Products	100%	0%	0.8	1.4	-	-	
MILLIKEN & CO PENDLETON FINISHING PLANT	Pickens	Apparel	0%	100%	1.3	1.4	1.3	1.9	
HOLCIM INC	Orangeburg	Cement	100%	0%	0.4	1.2	6	6.1	
Nan Ya Plastics Corporation	Florence	Plastics	100%	0%	-	1.2	-	-	
McCall Farms, Inc.	Florence	Food preserves	100%	0%	0.5	1	0.8	1.7	

Projection methods

Proposed Method

1. Average water use from 2015-2017.
2. Classify Industries by NAIC.
3. Assign USEIA projected annual growth rate.

Alternative Methods

- Assign SCDEW projected employment growth rate.
- Regression on water use by:
 - Employment and production
 - Season and weather

Projected Annual Growth Rate 2017-2050

Paper Products	0.7%
Wood Products	1.7%
Chemical Manufacturing	1.7%
Bulk Chemicals	1.6%
Inorganic	-0.1%
Organic	2.1%
Resin	1.6%
Plastics and Rubber Products	2.5%
Other Chemical Products	1.7%
Other Petroleum and Coal Products	-0.8%
Textile Mills and Products	-2.2%
Primary Metals Industry	1.0%
Iron and Steel Mills and Products	0.4%
Alumina and Aluminum Products	1.2%
Other Primary Metal Products	1.5%
Fabricated Metal Products	2.3%
Machinery	2.3%
Cement and Lime	1.9%
Food Products	1.7%
Miscellaneous Manufacturing	2.8%

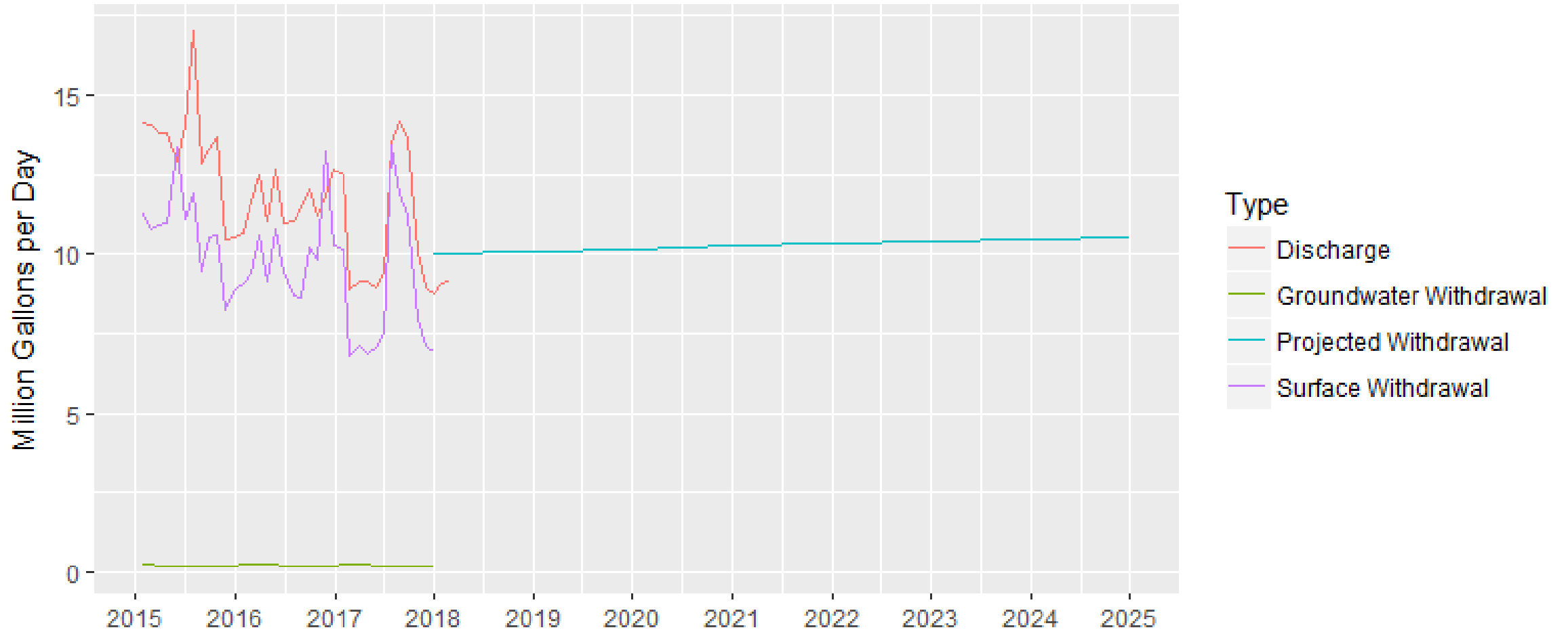
Source: U.S. Energy Information Administration

<https://www.eia.gov/outlooks/aeo/data/browser/#>

Accessed Aug 7, 2018

Reported Water Use and Draft Demand Projection

Kimberly Clark Beech Island Facility, 2015-2025



Open Discussion

More info: www.scwatermodels.com (updates coming August 25th)

Send feedback: scwatermodels@clemson.edu (RSVP for email updates)

Meeting Schedule

Aiming for every other Wednesday, 9:30 AM. We can be flexible

- Wednesday August 29th – Power
- Wednesday September - Golf
- Wednesday September - Public & Domestic Supply
- Agriculture