

MANATEE COUNTY

Lake Manatee WTP Facility Plan

Meeting Date: 2/3/2026

Location: Lake Manatee WTP, Maintenance Building Break Room

Subject: Workshop No. 2: Planning Framework **Carollo Project No.: 204711**

1. Workshop Goals

- Select max day and max month peaking factors
- Determine basis for 2045 finished water demand projection and resulting facility capacity requirement
- Decide on redundancy and reliability needs

2. Historical Demand Overview

- Historical data indicate that actual withdrawal amounts are approaching permitted allocations, in particular for surface water.
- Finished water demand shows season variability with increasing annual average.
- Peaking factors have remained generally stable over time.
- The County's peaking factors are slightly higher when Sarasota County demand is excluded from the dataset (meaning the County's retail peaking factors are higher than the peaking factors of the wholesale amount provided to Sarasota County).
- Since 2016, system demand has shown a steady upward trend, while peaking factors have remained within existing design expectations.
 - County agreed on the following peaking factors
 - Max Month = 1.2
 - Max Day = 1.3
- Reviewed existing WTP treatment capacities including:
 - Max day surface water and groundwater finished water treatment capacities
 - Average day surface water and groundwater finished water treatment capacities with max day PF 1.3
 - Raw water withdrawal requirements needed to fully utilize treatment capacity

3. Water Demand Projections: Determine 2045 finished water capacity design basis

- Multiple finished water demand projection methodologies were reviewed to evaluate potential 2045 design capacity needs:
 - a) Apply County LOS to latest SWFWMD population projections
 - b) Apply actual per capita to SWFWMD population projections
 - c) Project historical finished water demand (trendline)
 - d) Project demands based on updated populations using County development-based approach – underway

- Check with Tom Cady to see if there are any updates to County's development based approach
- The County's LOS as defined in the Comprehensive (Comp) Plan (Objective 9.5.1) was discussed as a key driver for capacity planning.
 - Carollo recommended to simplify Comp Plan language to:
 - State LOS on a combined demand basis only (remove breakdown for residential; business, industrial, and institutional users; and miscellaneous and unaccounted uses).
 - Remove plant-specific capacity requirement.
 - County coordination is required to confirm Comp Plan amendment requirements and timing. Carollo will send proposed updates to the County.
- Finished water demand projections developed using SWFWMD data were compared against projections based on historical demand trends, including scenarios excluding Sarasota County.
- AAD and MMD projections were compared to illustrate the range of potential future demands.
 - 15-year trend projection aligns best with 100 gpcd
- Under current LOS requirements, the analysis indicates that additional finished water treatment capacity would be required prior to 2045.
- A 100 gpcd LOS is considered more realistic and reflective of historical usage, while still providing some conservatism for planning purposes.
- Recommendations for 2045 finished water design capacity were discussed based on the comparative evaluation of projection methods.
 - Revise LOS to 100 gpcd and apply most conservative population estimate for 2045 finished demand.

4. Redundancy and Reliability Criteria

- Potential modifications to existing facilities and operational approaches were discussed to improve overall system reliability and redundancy.
- The County expressed a preference for N+1 redundancy for critical treatment processes to ensure continued operation during outages, maintenance, or equipment failure.
 - N+1 for equipment
 - N+1 for basins is not the industry standard and may result in too high of construction costs for Basin D with the allocated budget the County has. The discussion established the County's preferred approach through operational flexibility via treatment train interconnections and rehabilitation of the existing trains for reliable capacity. The end result is N+1 for the treatment trains, not just integral to Basin D.
 - Phasing discussion was had regarding the treatment plant improvements:
 - Basin A to remain and be rehabilitated.
 - Basin B to be divided into two treatment trains
 - Timing of rehab and retrofit of A and B will be analyzed by Carollo. Timing will be weighed against Basin D phasing and capacity to be accounted for based on revised LOS and water use permit updates.

- Basin D will have a minimum, the same capacity as A. Consider phases to Basin D trains.
 - Plate Settlers and Actiflo will be considered as process expansion alternatives for A and B.
 - An interconnection of the new blend chamber with the existing blend chamber will be accounted for.
 - Consideration for an interconnection of the pretreatment effluent, so pretreated water can feed either the UF or Basin D filters. This will depend on pretreatment effluent water quality and chosen treatment process alternative.
 - County would like to keep nanofiltration on the table for evaluation.
 - Raw groundwater feed capacity is currently limited hydraulically, however County recently granted funding for a parallel pipe which will resolve this issue.
 - Design of SCADA and plant controls shall retain manual overrides and backup for all processes.
- Electrical Feed
 - FPL Service
 - County has a long term contract with FPL to manage and maintain the standby power for the plant.
 - There is a project for additional standby power that was approximately 1.5 times the existing standby power supply capacity. The generator capacity was determined assuming the Basin D capacity would be 60mgd, so the standby power supply capacity should not need to be revised.
 - No discussions with FPL regarding a separate power feed for Basin D has occurred.

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5. Project Schedule

- Progress Meeting No. 1: March 2, 2026
- Workshop No. 3: Existing Facility Evaluation: TBD. Expected 1st week of April.

6. Next Steps and Action Items

- See Table 7.1 for Action Items and Table 7.2 for Decision Log on the following page.



Table 7.1: Action Items

ITEM NO.	ACTION ITEM	RESPONSIBLE ENTITY	RESPONSIBLE INDIVIDUAL	ITEM DATE	STATUS	RESOLUTION DATE	ISSUES/COMMENTS
1	SEND BRENT L. THE STRUCTURAL INSPECTION OF BASIN A	CAROLLO	KYLE WARD	11/19/25	IN PROGRESS		Confirm if Brent received.
2	SCHEDULE WORKSHOP & MEETING DATES	COUNTY	PAUL HAAS	11/19/25	IN PROGRESS		WRKSHPS 1 & 2 as well as Progress Meeting 1 have been scheduled, all other dates still pending
3	SEND BRENT L. STEADY STATE ANALYSIS (STEADY-STATE RESULTS OF HYDRAULICS)	CAROLLO	SANDEEP SETHI	11/19/25	COMPLETED	12/2/2025	Sent via email
4	COUNTY TO CHECK IF BROMIDE IS MEASURED IN RAW SURFACE WATER; IF NOT, COUNTY TO MEASURE SAMPLES	COUNTY	KATE QUILTY	11/19/25	COMPLETED	01/30/2026	Bromide (mg/L), daily or based on most frequent sampling. If no historical data, 2-3 representative samples for the surface water.
5	SEND BRENT THE DATA REQUEST LOG	CAROLLO	KYLE WARD	11/19/25	COMPLETED	11/26/25	Sent Via email with KO Meeting Minutes
6	SEND BRENT A LIST OF CHEMICALS TO TEST	CAROLLO	KYLE WARD	1/26/26	IN PROGRESS		
7	COUNTY TO SEND A RUNNING LIST OF R&R AND CIP PROJECTS	COUNTY	MELISSA DICKEY	1/26/26	COMPLETED	2/13/26	
8	COUNTY TO PROVIDE HAAs AND SURFACE WATER SAMPLING RESULTS PREVIOUSLY COMPLETED	COUNTY	KATE QUILTY	1/26/26	COMPLETED	01/30/2026	Data received via email along with bromate bromide sample data.
9	CAROLLO TO SEND A DRAFT TO COUNTY (PATRICK SHEA, JIM RENNEBERG, AND CHRIS COLLINS) THE PROPOSED REVISIONS FOR POLICY 9.5.1.2 FOR A LOS OF 100 gpcd	CAROLLO	LAURA BAUMBERGER	2/3/26	COMPLETED	02/11/2026	County to confirm the process for amending LOS in the comprehensive plan.

Table 7.2: Decision Log

ITEM NO.	CATEGORY	DESCRIPTION OF DECISION	DECISION DATE	DECISION BY	FORUM
1	TASK 6 - EVALUATION OF PROPOSED TREATMENT OF TRAIN D	TRAIN D WILL ONLY BE EVALUATED FOR SURFACE WATER TREATMENT	11/19/25	COUNTY	KO MEETING
2	POC FOR DATA REQUEST	BRENT LAUDICINA; cc PAUL HAAS	11/19/25	BRENT L.	KO MEETING
3	STAFF SURVEY FORMAT	ONLINE AND PRINTABLE PDF TO BE DISTRIBUTED	11/19/25	COUNTY STAFF	KO MEETING
4	COUNTY IS NOT SET ON A SINGLE TECHNOLOGY	COUNTY PREFERS A FLEXIBLE DESIGN APPROACH (DCP-STYLE); DESIGN-BUILD TEAMS WILL BE INVITED TO PROPOSE SOLUTIONS	1/26/26	COUNTY STAFF	WORKSHOP NO. 1
5	TRAIN D CAPACITY	SURFACE WATER AND GROUNDWATER TREATMENT IS NOT RECOMMENDED	1/26/26	COUNTY STAFF & CAROLLO	WORKSHOP NO. 1
6	TRAIN D TREATMENT TECHNOLOGY	NO ION EXCHANGE (SIX) TECHNOLOGY	1/26/26	COUNTY STAFF	WORKSHOP NO. 1
7	COUNTY AGREED ON THE FOLLOWING PEAKING FACTORS (PF):	MAX MONTH PF = 1.2 AND MAX DAY PF = 1.3	2/3/26	COUNTY	WORKSHOP NO. 2
8	COUNTY AGREED ON THE FOLLOWING LOS:	100 gpcd AND APPLY MOST CONSERVATIVE POPULATION ESTIMATE FOR 2045	2/3/26	COUNTY	WORKSHOP NO. 2
9	Basin A Consideration	BASIN A TO REMAIN AND BE REHABILITATED. PHASING TO BE ANALYZED TO DETERMINE BEST TIMING AND MINIMAL RELIANCE ON A DURING INTERIM PHASES.	2/3/26	COUNTY	WORKSHOP NO. 2
10	Existing Pretreatment Considerations	BIFURCATING BASIN B INTO 2 TRAINS WITH SETTLEIGN PLATES OR ACTIFLO. CONSIDER PRETREATMENT OF A WITH SETTLLING PLATES OR ACTIFLO.	2/3/26	COUNTY	WORKSHOP NO. 2
11	Basin D Approach	CAPACITY TBD FROM WATER USE PERMIT MEETING ON 2/13/26. PHASING OF 2 OR MORE TRAINS IN BASIN D TO BE CONSIDERED.	2/3/26	COUNTY	WORKSHOP NO. 2
12	BASIN C ALTERNATIVE	CONSIDER NANOFILTRATION AS TREATMENT ALTERNATIVE	2/3/26	COUNTY	WORKSHOP NO. 2
13	BLEND CHAMBER	NEW BLEND CHAMBER WITH INTERCONNECTION TO EXISTING PLANT AS WELL AS BYPASS PIPING FOR BOTH BLEND CHAMBERS.	2/3/26	COUNTY	WORKSHOP NO. 2