APPENDIX H – Part 3

Stakeholder outreach and comment information.

RESOURCE MANAGEMENT COMMITTEE

December 15, 2020

Discussion: Action Item

Initiation and Approval of Rulemaking to Amend Rule 40D-8.041, Florida Administrative Code, to Adopt Minimum Flows for the Lower Peace River and Accept Final Draft Report

Purpose

To request the Board initiate and approve rulemaking to amend Rule 40D-8.041, Florida Administrative Code (F.A.C.), to adopt minimum flows for the Lower Peace River, and accept the report entitled: "Recommended Minimum Flows for the Lower Peace River and Proposed Minimum Flows for Lower Shell Creek, Final Draft, November 30, 2020."

Background/History

Minimum flows for the Lower Peace River were adopted (Rule 40D-8.041(8), F.A.C.) in July 2010 and became effective in August 2010. The adopted rule requires the reevaluation of the minimum flows within five years of the original adoption date to incorporate additional ecological data. Based on this requirement, staff presented an initial reevaluation of the minimum flows to the Governing Board in September 2015 that described additional ecological information and indicated no significant harm to the Lower Peace River and downstream Charlotte Harbor was occurring as a result of water withdrawals that were permitted in accordance with the minimum flows. A more comprehensive reevaluation of the minimum flows established for the Lower Peace River was initially scheduled for 2018 and is currently scheduled for 2020 on the District's Minimum Flows and Levels Priority List and Schedule.

For the comprehensive minimum flows analyses, the Lower Peace River and Lower Shell Creek were modeled as a single system "Lower Peace/Shell System" to appropriately characterize the strong hydrologic interactions between the river, creek, and Charlotte Harbor. The District re-mapped the bathymetry of the Lower Peace/Shell System and upper Charlotte Harbor, produced a LiDAR-based high resolution digital elevation model for the area, and developed and used a refined hydrodynamic model to predict salinity, water level and temperature in the Lower Peace/Shell System and Charlotte Harbor. In addition, habitat modeling for a number of estuarine-dependent taxa, including several fish species and Blue Crab, water quality assessments, and floodplain inundation analysis for the upper portion of the Lower Peace River were conducted to support minimum flows development for the Lower Peace River and Shell Creek.

Among the various factors assessed for the Lower Peace/Shell System, the most sensitive criterion was low-salinity (< 2 practical salinity units or psu) habitat. Potential flow-related changes in this habitat were modeled and used to develop minimum flows for the Lower Peace River and Lower Shell Creek that are expected to maintain 85% of the low-salinity habitat and thereby prevent significant harm to the water resources and ecology of the area.

Staff submitted a draft report on recommended minimum flows for the Lower Peace River and Shell Creek to the Governing Board in March 2020. The recommended minimum flows allow for potential reductions of 13% of daily flow under low-flow conditions (Block 1), 23% of the daily flow under moderate-flow conditions (Block 2), and 40% of daily flow under high-flow conditions (Block 3) from each system. For the Lower Peace River, the recommended minimum flows also include a low flow threshold

of 130 cfs and a maximum daily withdrawal limit of 400 cfs from the lower river that are applicable regardless of flow conditions. For the Lower Peace River, the daily flows used for identifying allowable flow reductions are based on the combined flow at the U.S. Geological Survey (USGS) Peace River at Arcadia, Horse Creek near Arcadia and Joshua Creek at Nocatee gages. For Lower Shell Creek, the minimum flows are based on inflows to Shell Creek Reservoir estimated using outflow from the reservoir at the USGS Shell Creek near Punta Gorda gage, reservoir storage and permitted withdrawals from the reservoir.

The draft minimum flows report was voluntarily submitted to an independent scientific peer review panel for review. The peer review was conducted from March 25 through June 26, 2020, and all panel meetings, as well as a publicly-accessible internet-based forum set up by the District for panel communication, were advertised in the Florida Administrative Register in accordance with Florida's Government-in-the-Sunshine Law. The peer review panel found that the draft report met relevant statutory requirements and that the analyses were thorough, scientifically reasonable, and based on best available information. Staff revised the draft minimum flows report based on consideration of comments of the peer review panel and interested stakeholders. A link to the electronic version of the draft report is provided below.

https://www.swfwmd.state.fl.us/sites/default/files/documents-and-reports/reports/Draft%20MFLs%20report.pdf

In addition to the scientific peer review, the District facilitated stakeholder review by hosting meetings and corresponding with individual stakeholders or stakeholder groups and facilitating a public workshop on October 29, 2020, for discussion of the recommended minimum flows for the Lower Peace River. Comments and questions from the public workshop and other stakeholder input were reviewed but did not necessitate the need for further revision of the draft minimum flows report. All stakeholder input is included in an appendix of the final draft report.

Status assessments based on the best available information indicate the recommended minimum flows for the Lower Peace River are being met and a recovery strategy is currently not required. Similarly, given projected demands in the region for 2040, implementation of a specific prevention strategy is also not warranted at this time. The newly developed minimum flows for the Lower Peace River are identified in the final draft report as "recommended" for current consideration by the District Governing Board for incorporation into District Rules.

The newly developed minimum flows for Lower Shell Creek are identified in the final draft report as "proposed" rather than "recommended", as investigation of Lower Shell Creek minimum flows status and need for a recovery and/or prevention strategy is ongoing. Following completion of the investigation, District staff will update the Lower Shell Creek minimum flows status in this report and change the designation of the minimum flows for Lower Shell Creek from "proposed" to "recommended" for consideration by the District Governing Board for incorporation into District Rules in 2021.

The recommended minimum flows for the Lower Peace River are protective of all relevant environmental values identified for consideration in the Water Resource Implementation Rule when establishing minimum flows and levels. The District will reevaluate the minimum flows, as necessary. The proposed rule language for establishment of minimum flows for the Lower Peace River is included as Exhibit A.

Benefits/Costs

Adoption of the minimum flows for the Lower Peace River will support the District's water supply planning, water use permitting, and environmental resource permitting programs. A Statement of Estimated Regulatory Costs is not required for the Lower Peace River minimum flows as this rulemaking is not expected to result in any direct or indirect cost increases for small businesses or increased regulatory costs in excess of $200,000 within one year of implementation.

Upon Governing Board approval of the proposed rule language, staff will submit notice to the Governor's Office of Fiscal Accountability and Regulatory Reform (OFARR) and proceed with formal rulemaking without further Board action. If substantive changes are necessary as the result of comments received from the public or reviewing entities such as OFARR, this matter will be brought back to the Board for consideration.

Staff Recommendation:

1. Accept the report entitled "Recommended Minimum Flows for the Lower Peace River and Proposed Minimum Flows for Lower Shell Creek, Final Draft, November 30, 2020."
2. Authorize the initiation of rulemaking and approve the proposed rule language for the adoption of an amendment to Rule 40D-8.041, Florida Administrative Code, to update minimum flows for the Lower Peace River.
3. Authorize staff to make any necessary clarifying or minor technical changes that may result from the rulemaking process.

Presenter:

Douglas A. Leeper, MFLs Program Lead, Environmental Flows and Assessments Section

Exhibit A

RULES OF THE

SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

RULE 40D-8.041

MINIMUM FLOWS

40D-8.041 Minimum Flows.

(1) through (7) No Change.

(8) Minimum Flows for the lower Peace River.

(a) For purposes of this rule, the lower Peace River in DeSoto County, FL and Charlotte County, FL includes the watercourse from U.S. Geological Survey Peace River at SR 70 at Arcadia, FL Gage #02296750 to Charlotte Harbor. ~~The Minimum Flows are to ensure that the minimum hydrologic requirements of the water resources or ecology of the natural systems associated with the estuarine reach of the lower Peace River are met.~~

(b) Minimum Flows for ~~the estuarine reach of~~ the lower Peace River are based on the sum of the daily average, combined, adjusted flows of the USGS Peace River ~~near~~ Arcadia, FL Gage ("Gage No. 02296750"), ~~#02296750~~ ~~plus~~ the flow at the U.S. Geological Survey Joshua Creek at Nocatee, FL Gage ("Gage No. 02297100"), and the U.S. Geological Survey ~~USGS~~ Horse Creek at SR 72 near Arcadia, FL Gage ("Gage No. 02297310") ~~#02297310, and the USGS Joshua Creek at Nocatee Gage #02297100~~, as ~~and are~~ set forth in Table 8-20. ~~below.~~ Adjusted flow is defined as flow that would exist in the absence of withdrawal impacts. Minimum Flows for the lower Peace River are ~~both seasonal and~~ flow dependent, and were developed based on the daily average, combined flow at Gage No. 02296750, Gage No. 02297100 and Gage No. 02297310 adjusted for withdrawals for the period of record from January 1, 1950 through December 31, 2018. There are seven flow dependent Minimum Flows. ~~One standard, the Minimum Low Flow Threshold, is flow based and applied continuously regardless of season. No surface water withdrawals shall be permitted that would cumulatively cause the flow to be reduced below the Minimum Low Flow Threshold of 130 cfs based on the sum of the mean daily flows for the three gages listed above.~~ Permitted ~~Additionally, permitted~~ withdrawals shall cease when the sum of the mean daily flows for the three gages denoted above is ~~are~~ below ~~the Minimum Low Flow Threshold of~~ 130 cfs. Also, the ~~The~~ total permitted maximum withdrawals on any day from the lower Peace River shall not exceed 400 cfs. ~~There are also three seasonally dependent or Block specific Minimum Flows that are based on the sum of the mean daily flows for the three gages denoted above that would occur in the absence of any permitted upstream withdrawals. The Block Minimum Flows are based on potential changes in habitat availability for select salinity ranges within a season.~~

Table 8-20 Minimum Flow for Lower Peace River Based on the Combined (i.e., summed) Flows from the USGS Peace River at SR 70 at Arcadia, FL, Joshua Creek at Nocatee, FL, and Horse Creek at SR 72, near Arcadia, FL Gages Adjusted for Upstream Withdrawals	
If Adjusted Combined Flow in cubic feet per second (cfs) on the previous Day is:	Minimum Flow is:
≤130 cfs	Combined flow on the previous day
>130 cfs and ≤149 cfs	130 cfs
>149 cfs and ≤ 297 cfs	87% of combined flow on the previous day
> 297 cfs and ≤ 335 cfs	258 cfs
> 335 cfs and ≤ 622 cfs	77% of combined flow on the previous day
> 622 cfs and ≤ 798 cfs	479 cfs
> 798 cfs	60% of combined flow on the previous day

~~Table 8-20 Minimum Flow for Lower Peace River based on the sum of flows from Horse Creek, Joshua Creek, and the Peace River at Arcadia gages.~~			
~~Period~~	~~Effective Dates~~	~~Where Flow on Previous Day Equals:~~	~~Minimum Flow Is~~
~~Annually~~	~~January 1 through December 31~~	~~≤130 cfs~~ ~~>130 cfs~~	~~Actual flow (no surface water withdrawals permitted)~~ ~~Seasonally dependent – see Blocks below~~
~~Block 1~~	~~April 20 through June 25~~	~~≤130 cfs~~ ~~>130 cfs~~	~~Actual flow (no surface water withdrawals permitted)~~ ~~previous day's flow minus 16% but not less than 130 cfs~~
~~Block 2~~	~~October 28 through April 19~~	~~≤130 cfs~~ ~~>130 cfs and <625 cfs~~ ~~≥625 cfs~~	~~Actual flow (no surface water withdrawals permitted)~~ ~~previous day's flow minus 16% but not less than 130 cfs~~ ~~previous day's flow minus 29%~~
~~Block 3~~	~~June 26 through October 27~~	~~≤130 cfs~~ ~~>130 cfs and <625 cfs~~ ~~≥625 cfs~~	~~Actual flow (no surface water withdrawals permitted)~~ ~~previous day's flow minus 16% but not less than 130 cfs~~ ~~previous day's flow minus 38%~~

(c) Status assessments of the Minimum Flows for the lower Peace River will be completed to determine whether the flow is below or projected to fall below the Minimum Flows. Each status assessment is independent from and not a determination of water use permit

compliance or environmental resource permit compliance. Permit compliance is a regulatory function that is not within the scope of this subsection. As part of each status assessment, the District will use the following approach:

1. The District will evaluate the Minimum Flow annually to determine the extent to which the flow of the lower Peace River has been reduced due to withdrawals as of the date of each status assessment at Gage No. 02296750, Gage No. 02297100 and Gage No. 02297310. The annual evaluation will be completed through a review of:

(a) Flow data;

(b) Water withdrawals;

(c) Aquifer water levels;

(d) Rainfall data; and

(e) Hydrologic modeling.

2. The District will also evaluate the Minimum Flows every five years as part of the regional water supply planning process. This evaluation will include the use of hydrologic modeling.

3. If the Minimum Flows are being met based on the annual evaluation or the evaluation performed as a part of the regional water supply planning process, then no further actions are required beyond continued monitoring.

~~(c) Minimum five-year and ten-year moving mean and median flow values are set forth in Table 8-20 as a tool to assess whether flows to the lower Peace River remain above flow rates that are expected to occur with implementation of the Minimum Flow described in Table 8-21 and a daily maximum withdrawal rate of 400 cfs. The means and medians are based on evaluation of daily flow records for the three gages listed above for the period 1951 through 2008. Yearly means and medians were computed for January 1 through December 31 of each year, then moving five-year and ten-year averages were calculated from these yearly values. Therefore, the five-year and ten-year means and medians are hydrologic statistics that represent the flows that will be met or exceeded if compliance with the Minimum Flow and the 400 cfs maximum withdrawal rate is maintained during hydrologic conditions similar to the 1951-2008 period. Climatic changes or future structural alterations in the watershed could potentially affect surface water or groundwater flow characteristics within the watershed and flows in the river. Therefore, as additional information relevant to Minimum Flows development becomes available, the District is committed to periodically evaluate whether any declines in these minimum moving average values below that expected with the application of the Minimum Flow are due to factors other than permitted water use.~~

~~(d) The Minimum Flows for the lower Peace River will be reevaluated to incorporate additional ecological data for the Lower Peace River within 5 years of adoption of this rule.~~

~~Table 8.21 Minimum Five-Year and Ten-Year Moving Mean and Median flows for the lower Peace River based on the sum of flows from Horse Creek, Joshua Creek, and the Peace River at Arcadia~~		
~~Minimum Flow~~	~~Hydrologic Statistic~~	~~Flow (cfs)~~
~~Annual Flow~~	~~10-Year Mean~~ ~~10-Year Median~~ ~~5-Year Mean~~ ~~5-Year Median~~	~~713~~ ~~327~~ ~~679~~ ~~295~~
~~Block 1~~	~~10-Year Mean~~ ~~10-Year Median~~ ~~5-Year Mean~~ ~~5-Year Median~~	~~284~~ ~~264~~ ~~204~~ ~~114~~
~~Block 2~~	~~10-Year Mean~~ ~~10-Year Median~~ ~~5-Year Mean~~ ~~5-Year Median~~	~~429~~ ~~383~~ ~~330~~ ~~235~~
~~Block 3~~	~~10-Year Mean~~ ~~10-Year Median~~ ~~5-Year Mean~~ ~~5-Year Median~~	~~1260~~ ~~930~~ ~~980~~ ~~595~~

(9) through (22), No Change.

Rulemaking Authority 373.044, 373.113, 373.171 FS. Law Implemented 373.036, 373.042, 373.0421 FS. History–New 10-5-74, Amended 12-31-74, Formerly 16J-0.15, 40D-1.601, Amended 10-1-84, 8-7-00, 2-6-06, 4-6-06, 1-1-07, 11-25-07, 2-18-08, 3-2-08, 5-12-08, 5-10-09, 3-23-10, 3-28-10, 7-12-10, 8-2-10 (8), 8-2-10 (15), 10-16-12, 3-20-13(16), 3-20-13(17), 6-20-16, 3-15-18, 6-19-18, 4-15-20, 8-9-20, ___.

From: Yonas Ghile
To: Laura Baumberger; Chris Zajac; Eric DeHaven; Randy Smith; Doug Leeper; Kristina Deak; Xinjian Chen; Steve Adams; Chuck Pavlos; Sarah Burns; Victoria Steinnecker; Dennis Ragosta
Cc: Steven Leonard; Brian Fuller
Subject: RE: Lower Shell Creek MFL
Date: Friday, December 11, 2020 4:14:22 PM
Attachments: image001.png
image002.png

Ok, thank you for clarification.

From: Laura Baumberger <LBaumberger@carollo.com>
Sent: Friday, December 11, 2020 4:05 PM
To: Yonas Ghile <Yonas.Ghile@swfwmd.state.fl.us>; Chris Zajac <Chris.Zajac@swfwmd.state.fl.us>; Eric DeHaven <Eric.Dehaven@swfwmd.state.fl.us>; Randy Smith <Randy.Smith@swfwmd.state.fl.us>; Doug Leeper <Doug.Leeper@swfwmd.state.fl.us>; Kristina Deak <Kristina.Deak@swfwmd.state.fl.us>; Xinjian Chen <Xinjian.Chen@swfwmd.state.fl.us>; Steve Adams <SAdams@cityofpuntagordafl.com>; Chuck Pavlos <CPavlos@cityofpuntagordafl.com>; Sarah Burns <sburns@carollo.com>; Victoria Steinnecker <vsteinnecker@carollo.com>; Dennis Ragosta <Dennis.Ragosta@swfwmd.state.fl.us>
Cc: Steven Leonard <SLeonard@cityofpuntagordafl.com>; Brian Fuller <BFuller@cityofpuntagordafl.com>
Subject: RE: Lower Shell Creek MFL

[EXTERNAL SENDER] Use caution before opening.
Yonas,

The water demand peaking factors are based on the City's actual water demand (not reservoir withdrawals). The reservoir withdrawals have been lower in May and some other months the past few years because the City has been recovering water from the ASR during this time. The City has also purchased and sold water from/to the Peace River Authority during this timeframe, which further skews the reservoir withdrawals.

Because the model peaking factors are set up to reflect monthly changes in water demand, you should use the factors that are in your first chart below (Peaking factors). These represent the City's month variations in potable water demand.

We look forward to meeting with the City and the District to discuss next steps for the Lower Shell Creek MFL.

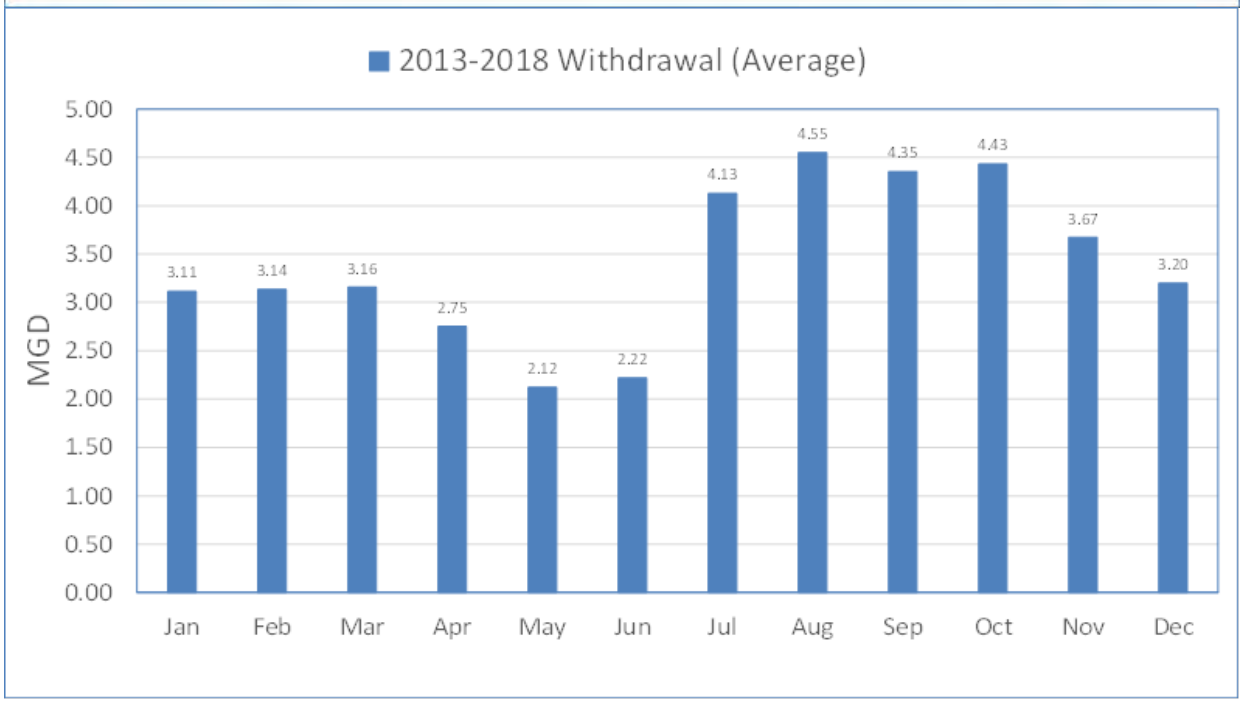
Thanks,
Laura

From: Yonas Ghile <Yonas.Ghile@swfwmd.state.fl.us>
Sent: Thursday, December 10, 2020 4:57 PM
To: Laura Baumberger <LBaumberger@carollo.com>; Chris Zajac <Chris.Zajac@swfwmd.state.fl.us>; Eric DeHaven <Eric.Dehaven@swfwmd.state.fl.us>; Randy Smith <Randy.Smith@swfwmd.state.fl.us>; Doug Leeper <Doug.Leeper@swfwmd.state.fl.us>; Kristina Deak <Kristina.Deak@swfwmd.state.fl.us>; Xinjian Chen <Xinjian.Chen@swfwmd.state.fl.us>; Steve Adams <SAdams@cityofpuntagordafl.com>; Chuck Pavlos <CPavlos@cityofpuntagordafl.com>; Sarah Burns <sburns@carollo.com>; Victoria Steinnecker <vsteinnecker@carollo.com>; Dennis Ragosta <Dennis.Ragosta@swfwmd.state.fl.us>
Cc: Steven Leonard <SLeonard@cityofpuntagordafl.com>; Brian Fuller <BFuller@cityofpuntagordafl.com>
Subject: RE: Lower Shell Creek MFL

Laura

I hope all is well. I have one question in regard to the monthly peak factors that are recommended for use in the Shell Creek routing model. The peaking factors indicate that the City needs less water in summer (July-Sep) but withdrawals in the past 5 years indicate the opposite, as shown in the charts below. I am not sure if I am using a wrong withdrawal data but I would like to bring this issue to your attention if there is any explanation for the mismatch. We are working closely with our Regulation and Office of General Counsel Divisions on the Lower Shell Creek MFLs implementation. Soon, we will set up a meeting to discuss it with the City's team.





Thank you
Yonas

From: Laura Baumberger <LBaumberger@carollo.com>
Sent: Wednesday, October 28, 2020 3:01 PM
To: Chris Zajac <Chris.Zajac@swfwmd.state.fl.us>; Eric DeHaven <Eric.Dehaven@swfwmd.state.fl.us>; Randy Smith <Randy.Smith@swfwmd.state.fl.us>; Doug Leeper <Doug.Leeper@swfwmd.state.fl.us>; Yonas Ghile <Yonas.Ghile@swfwmd.state.fl.us>; Kristina Deak <Kristina.Deak@swfwmd.state.fl.us>; Xinjian Chen <Xinjian.Chen@swfwmd.state.fl.us>; Steve Adams <SAdams@cityofpuntagordafl.com>; Chuck Pavlos <CPavlos@cityofpuntagordafl.com>; Sarah Burns <sburns@carollo.com>; Victoria Steinnecker <vsteinnecker@carollo.com>; Dennis Ragosta <Dennis.Ragosta@swfwmd.state.fl.us>
Cc: Steven Leonard <SLeonard@cityofpuntagordafl.com>; Brian Fuller <BFuller@cityofpuntagordafl.com>
Subject: RE: Lower Shell Creek MFL

[EXTERNAL SENDER] Use caution before opening.

Thank you, Chris.

Attached are the revised minutes.

Regards,
Laura

Laura Baumberger, PE
Project Manager | Vice President
301 North Cattlemen Road, Suite 302 | Sarasota, FL 34243
P 941-371-9832 | **M** 941-400-2320
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From: Chris Zajac <Chris.Zajac@swfwmd.state.fl.us>
Sent: Wednesday, October 28, 2020 2:42 PM
To: Laura Baumberger <LBaumberger@carollo.com>; Eric DeHaven <Eric.Dehaven@swfwmd.state.fl.us>; Randy Smith <Randy.Smith@swfwmd.state.fl.us>; Doug Leeper <Doug.Leeper@swfwmd.state.fl.us>; Yonas Ghile <Yonas.Ghile@swfwmd.state.fl.us>; Kristina Deak <Kristina.Deak@swfwmd.state.fl.us>; Xinjian Chen <Xinjian.Chen@swfwmd.state.fl.us>; Steve Adams <SAdams@cityofpuntagordafl.com>; Chuck Pavlos <CPavlos@cityofpuntagordafl.com>; Sarah Burns <sburns@carollo.com>; Victoria Steinnecker <vsteinnecker@carollo.com>; Dennis Ragosta <Dennis.Ragosta@swfwmd.state.fl.us>
Cc: Steven Leonard <SLeonard@cityofpuntagordafl.com>; Brian Fuller <BFuller@cityofpuntagordafl.com>
Subject: RE: Lower Shell Creek MFL

Laura,

Thank you for sending us the meeting summary. The summary looks great.

My only suggesting would be to change 3.b.iii to the following "The District is reviewing if documenting these conditions in the City's water use permit (WUP) is the appropriate approach."

We are working closely with our Regulation and Office of General Counsel Divisions to determine the appropriate measures. I'll set up another meeting as soon as we develop some options for consideration. I should be in touch soon.

Chris Zajac
Environmental Flows and Assessments Manager
Natural Systems and Restoration Bureau
2379 Broad Street
Brooksville, FL 34604
(352) 796-7211, Ext. 4413
(352) 586-3776
Chris.Zajac@WaterMatters.org

From: Laura Baumberger <LBaumberger@carollo.com>
Sent: Tuesday, October 27, 2020 1:54 PM
To: Chris Zajac <Chris.Zajac@swfwmd.state.fl.us>; Eric DeHaven <Eric.Dehaven@swfwmd.state.fl.us>; Randy Smith <Randy.Smith@swfwmd.state.fl.us>; Doug Leeper <Doug.Leeper@swfwmd.state.fl.us>; Yonas Ghile <Yonas.Ghile@swfwmd.state.fl.us>; Kristina Deak <Kristina.Deak@swfwmd.state.fl.us>; Xinjian Chen <Xinjian.Chen@swfwmd.state.fl.us>; Steve Adams <SAdams@cityofpuntagordafl.com>; Chuck Pavlos <CPavlos@cityofpuntagordafl.com>; Sarah Burns <sburns@carollo.com>; Victoria Steinnecker <vsteinnecker@carollo.com>; Dennis Ragosta <Dennis.Ragosta@swfwmd.state.fl.us>
Cc: Steven Leonard <SLeonard@cityofpuntagordafl.com>; Brian Fuller <BFuller@cityofpuntagordafl.com>
Subject: Lower Shell Creek MFL

[EXTERNAL SENDER] Use caution before opening.
Good afternoon,

Attached please find draft minutes to document discussions at the meeting held last Thursday. A number of next steps/action items are also included.

Please let us know of any additions or corrections.

Thanks,
Laura

Laura Baumberger, PE
Project Manager | Vice President
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P 941-371-9832 | **M** 941-400-2320
carollo.com



-----Original Appointment-----
From: Chris Zajac <Chris.Zajac@swfwmd.state.fl.us>
Sent: Saturday, October 3, 2020 10:09 AM
To: Chris Zajac; Eric DeHaven; Randy Smith; Doug Leeper; Yonas Ghile; Kristina Deak; Xinjian Chen; Laura Baumberger; Steve Adams; Chuck Pavlos; Sarah Burns; Victoria Steinnecker; Dennis Ragosta
Subject: Discuss Lower Shell Creek MFL
When: Thursday, October 22, 2020 10:00 AM-11:30 AM (UTC-05:00) Eastern Time (US & Canada).
Where: Microsoft Teams Meeting

The purpose of this meeting will be to discuss the District's most recent model results for Lower Shell Creek. Please feel free to invite others as deemed appropriate.

Join Microsoft Teams Meeting

+1 786-749-6127 United States, Miami (Toll)

Conference ID: 605 789 808#

Local numbers | Reset PIN | Learn more about Teams | Meeting options

INTERNAL USERS: Please use headset and microphone to join meeting audio. EXTERNAL USERS: Please dial toll # or use headset and microphone to join meeting audio.

SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

Recommended Minimum Flows for the Lower Peace River

Governing Board Meeting

December 15, 2020

Doug Leeper
Minimum Flows and Levels Program Lead
Natural Systems and Restoration Bureau

1

SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

Minimum Flows



- The **minimum flow** for a given watercourse is the limit at which further withdrawals would be significantly harmful to the water resources or ecology of the area. *Section 373.042, Florida Statutes*
- Minimum flow rules are used in District permitting and planning programs

2

SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

Minimum Flow Considerations

Address natural seasonal fluctuations, non-consumptive uses, and **environmental values**, including:

- Recreation in and on the water
- Fish and wildlife habitats and the passage of fish
- Estuarine resources
- Transfer of detrital material
- Maintenance of freshwater storage and supply
- Aesthetic and scenic attributes
- Filtration/absorption of nutrients and other pollutants
- Sediment loads
- Water quality
- Navigation

Summarized from Rule 62-40.473, Florida Administrative Code



3

SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

Lower Peace River

- River segment downstream of Arcadia
- Based on combined flows:
  - Peace River at Arcadia
  - Joshua Creek at Nocatee
  - Horse Creek near Arcadia
- Minimum flows
  - Adopted in 2010
  - Initial reevaluation in 2015
  - Comprehensive reevaluation and adoption scheduled for 2020

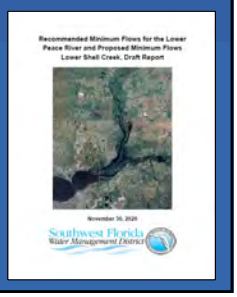


4

SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

Outreach/Review

- Reevaluation identified on MFLs Priority List and Schedule
- Draft report to Governing Board (March 24, 2020)
- Lower Peace River/Lower Shell Creek web page
- Independent scientific peer review, including web forum
- Meetings/correspondence with stakeholders, including:
  - Utilities – PRMRWSA , PRWC, City of Punta Gorda
  - Others – DEP, FWC, FDACS, SFWMD, SJRWMD, SRWMD, Coastal & Heartland National Estuary Partnership Technical Advisory Committee
  - Public Supply Advisory Committee (August 11, 2020)
  - Environmental Advisory Committee (October 13, 2020)
  - Public workshop (October 29, 2020)
- Final draft report & rule to Governing Board (today)



5

SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

Peer Review Panel Findings

- Minimum flows report well written and comprehensive
- Use of flow-based blocks supported
- Use of 15% threshold for "significant harm" supported
- Enhanced hydrodynamic model supported
- Enhanced ecological criteria supported
- Sea level rise analysis supported
- Continued coordination with SFWMD recommended



6

SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

Minimum Flows Approach

- **Percent-of-Flow:** Percentage that flows can be reduced by withdrawals without causing significant harm to the water resource or ecology of the area
- **Significant Harm:** More than a 15% decrease in available habitat or resource; protects 85% of available habitat or resource

7

SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

Baseline Flows

- Baseline (adjusted for withdrawal effects) and gaged flows for the period from 1950 through 2014



8

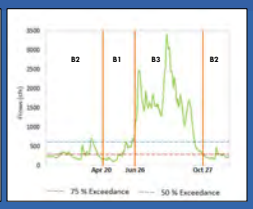
SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

Flow-Based Blocks

Currently Used Flow-Based Blocks



Previously Used Calendar-Based Blocks



- Flow-based blocks better represent low, medium and high flow conditions for minimum flows development and implementation

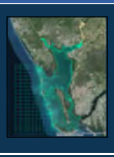
9

SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

Enhanced Hydrodynamic Modeling

Current model (Chen 2020)

- Unstructured 3D hydrodynamic model
- Includes entire Charlotte Harbor
- New LiDAR and bathymetry data
- 21-month calibration/validation period
- 7.7-year simulation period (Jan 2007 – Aug 2014)



Previously used model (Chen 2010)

- Structured 3D hydrodynamic model
- Limited to Upper Charlotte Harbor
- 13-month calibration/validation period
- 3-year simulation period (2000 - 2002)



Note differing map scales

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SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

Enhanced Ecological Criteria and Considerations

Current Evaluation	Previous (2010 Evaluation)
▪ Salinity-based habitats (≤2, ≤5, ≤10, ≤15, ≤20 psu) ▪ Floodplain inundation ▪ Habitats for 8 estuarine-dependent taxa (fish and Blue Crab) ▪ Water quality (dissolved oxygen, nutrients, chlorophyll, color)	▪ Salinity-based habitats (≤2, ≤5, ≤10, ≤15, ≤20 psu)

- ≤ 2 psu salinity volume was the metric most sensitive to flow reductions
- Minimum flows developed based on preserving 85% of ≤2 psu salinity volume

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SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

Lower Peace River Recommended Minimum Flows

Flow-Based Block	If Flow on Previous Day is:	Minimum Flow is:	Maximum Flow Reduction is:
1	≤ 130 cfs 130 cfs to 149 cfs 150 cfs to 297 cfs	100% of the flow 130 cfs **87% of the flow**	0 cfs Flow minus 130 cfs 13% of the flow
2	298 cfs to 335 cfs 336 cfs to 622 cfs	258 cfs **77% of the flow**	Flow minus 258 cfs 23% of the flow
3	623 cfs to 798 cfs > 798 cfs	479 cfs **60% of the flow***	Flow minus 479 cfs 40% of the flow*

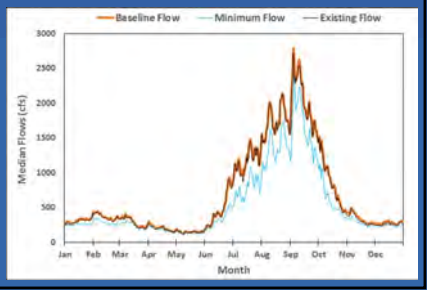
* Daily maximum withdrawal is 400 cfs

12

SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

Lower Peace River Recommended Minimum Flows

- Baseline (adjusted for withdrawal effects), existing, and minimum flows for the period from 1975 through 2018



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SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

Minimum Flows Summary

- Recommended minimum flows for the Lower Peace River are based on maintaining 85% of the 2 psu or less salinity volume
- Recommended minimum flows are protective of all environmental values identified for consideration when establishing minimum flows
- Recommended minimum flows do not adversely impact existing legal users
- Recommended minimum flows for the Lower Peace River are currently met and projected to be met during the next 20-year planning period

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SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

Staff Recommendations

1) Accept the report entitled "Recommended Minimum Flows for the Lower Peace River and Proposed Minimum Flows for Lower Shell Creek, Final Draft, November 30, 2020."
2) Authorize the initiation of rulemaking and approve the proposed rule language for the adoption of an amendment to Rule 40D-8.041, Florida Administrative Code, to update minimum flows for the Lower Peace River.
3) Authorize staff to make any necessary clarifying or minor technical changes that may result from the rulemaking process.

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GOVERNING BOARD MEETING GOVERNING BOARD MEETING
TUESDAY, DECEMBER 15, 2020 – 9:00 AM
2379 BROAD STREET, BROOKSVILLE, FL 34604
(352) 796-7211

MINUTES

Board Members Present	Staff Members
Kelly Rice, Chair	Brian J. Armstrong, Executive Director
Joel Schleicher, Vice Chair	Amanda Rice, Assistant Executive Director
Rebecca Smith, Ph.D., Secretary*	Karen E. West, General Counsel
James G. Murphy, Treasurer*	Brian Werthmiller, Inspector General
Ed Armstrong, Member*	John J. Campbell, Division Director
Roger Germann, Member*	Brian Starford, Division Director
Jack Bispham, Member	Michael Molligan, Division Director
Seth Weightman, Member	Jennette Seachrist, Division Director
John Mitten, Member	Michelle Hopkins, Division Director
*Attended Via Electronic Media	Board Administrative Support
	Virginia Singer, Board & Executive Services Manager
	Lori Manuel, Administrative Coordinator

1. Convene Public Hearing

Due to the COVID-19 virus, this meeting was held through a combination of in-person attendance and electronic media to reduce public gatherings and practice social distancing.

The Governing Board of the Southwest Florida Water Management District (District) met for its regular meeting at 9:00 a.m., on December 15, 2020, at the Brooksville Office, 2379 Broad Street, Brooksville, Florida 34604-6899.

Approved minutes from previous meetings can be found on the District's website (www.WaterMatters.org).

1.1 Call to Order

Chair Rice called the meeting to order. He provided a telephone number to any member of the public wishing to address the Governing Board concerning any item listed on the agenda or any item that does not appear on the agenda. Chair Rice stated that comments would be limited to three minutes per speaker, and when appropriate, exceptions to the three-minute limit may be granted by the chair. He also requested that several individuals wishing to speak on the same issue/topic designate a spokesperson.

1.2 Invocation and Pledge of Allegiance

Vice Chair Schleicher offered the invocation and led the Pledge of Allegiance.

Chair Rice introduced each member of the Governing Board (this served as roll call), and staff at the dais. He noted that the Board meeting was being recorded for broadcast on government access channels, and public input was only taken during the meeting via telephone communication.

1.3 Recognition of Former Governing Board Member Randall S. Maggard

Previous Board Member, Mr. Randall S. Maggard, was recognized for his term as a Governing Board member. District staff presented Resolution No. 20-07 and a plaque to commemorate his service. Mr. Maggard was appointed by Governor Rick Scott in October 2011 and served until July 2019.

1.4 Additions/Deletions to Agenda

Mr. Brian Armstrong, executive director, stated there were no changes to the agenda.

1.5 Public Input for Issues Not Listed on the Published Agenda

Mr. David Ballard-Geddis, Jr., spoke regarding opposition to the use of reclaimed water.

2. CONSENT AGENDA

2.1 Approval of Resolution Requesting Disbursement of Funds from the Water Protection and Sustainability Trust Fund

Staff recommended the Board approve Resolution 20-18, Request to the Florida Department of Environmental Protection for Disbursement of Funds from the Water Protection and Sustainability Program Trust Fund for Selected Project(s).

2.2 Approval of Resolution Requesting Disbursement of Funds from the Land Acquisition Trust Fund for Land Management

Staff recommended the Board approve Resolution 20-17, Request to the Florida Department of Environmental Protection for Disbursement of Funds from the LATF for Land Management.

2.3 Authorization to Dispose of Equipment

Staff recommended the Governing Board approve the disposition of one Mac dump truck (2094), one JCB off-road dump truck (2060), and one Kaiser excavator (2076) through the auction process.

2.4 Initiation and Approval of Rulemaking to Amend Rule 40D-8.624, Florida Administrative Code, to Remove Minimum and Guidance Levels for Pasco Lake in Pasco County (P256)

Staff recommended the Board:

A. Accept the Technical Memorandum entitled, “Recommendations for Pasco Lake Minimum Lake Levels.”
B. Authorize staff to make any necessary minor clarifying edits that may result from the rulemaking process and to complete report finalization.
C. Initiate rulemaking and approve proposed rule language to amend Rule 40D-8.624, F.A.C., to remove Minimum and Guidance Levels for Pasco Lake, as shown in the Exhibit.

2.5 Initiation and Approval of Rulemaking to Amend Rule 40D-8.623, Florida Administrative Code, to Remove Minimum Wetland Level for Cypress Bridge A in Pasco County

Staff recommended the Board:

A. Initiate rulemaking and approve the proposed rule language to amend Rule 40D-8.623,

F.A.C., to remove the Cypress Bridge A minimum level, as shown in the Exhibit.

B. Authorize staff to make any necessary minor clarifying edits that may result from the rulemaking process.

2.6 FARMS – The Eugene H. Turner Family Partnership, LTD (H786), DeSoto County

Staff Recommended the Board:

1. Approve the Eugene H. Turner Family Partnership, LTD project for a not-to-exceed project reimbursement of $326,000 with $326,000 provided by the Governing Board.
2. Authorize the transfer of $326,000 from fund 010 H017 Governing Board FARMS Fund to the H786 the Eugene H. Turner Family Partnership, LTD project fund.
3. Authorize the Assistant Executive Director to sign the agreement.

2.7 WUP No. 20020899.000, CEMEX Brooksville South Cement Plant, CEMEX Construction Materials Florida, LLC (Hernando County)

Staff recommended the Board approve the proposed permit.

2.8 Initiation of Rulemaking to Amend Rule 40D-1.660, Florida Administrative Code and Applicant's Handbook Volume II

Staff recommended the Board authorize the initiation of rulemaking to amend Rule 40D-1.660, F.A.C., and the District's Environmental Resource Permitting Applicant's Handbook Volume II, to update stormwater design and operation regulations as required by Section 5 of Chapter 2020-150, Laws of Florida.

2.9 Authorization to Issue Administrative Complaint and Order - Travel Imagination, LLC – Unauthorized Construction - CT Number 403929 - Manatee County

Staff recommended the Board:

1. Authorize District staff to issue an Administrative Complaint and Order to Travel Imagination, LLC to obtain compliance with District rules.
2. Authorize District staff to initiate an action in circuit court against Travel Imagination, LLC, and any other necessary parties, to recover a civil penalty/administrative fine, enforcement costs, litigation costs, and attorneys' fees, if appropriate.
3. Authorize District staff to initiate an action in circuit court to enforce the terms of the Administrative Complaint and Order, if necessary.

2.10 Approve Governing Board Minutes - November 17, 2020

Staff recommended the Board approve the minutes from November 17, 2020.

A motion was made and seconded to approve the Consent Agenda. The motion passed unanimously. (Audio - 00:19:47)

3. FINANCE/OUTREACH & PLANNING COMMITTEE

Committee Chair James Murphy called the committee meeting to order.

3.1 Consent Item(s) Moved to Discussion – None

3.2 Preliminary Budget for Fiscal Year 2022

Mr. John Campbell, Management Services Division director, presented information regarding the proposed Preliminary Fiscal Year (FY) 2022 budget. This included a budget development calendar; expenditure goals and outcomes; expenditures by category; expenditures by program; expenditures by areas of responsibility and revenues by source.

Staff recommended the Board authorize staff to prepare the Standard Format Preliminary

Budget Submission for FY2022 based on the preliminary budget as presented, adjusted for any modifications made by the Governing Board on December 15, for submission to the Florida Legislature on or before January 15, 2021.

A motion was made and seconded to approve staff recommendation. The motion passed with eight in favor and one opposed. Vice Chair Schleicher explained he was voting in opposition as he would like to see additional reductions to the millage rate. (00:33:00)

3.3 Budget Transfer Report
This item was for information only. No action was required.

4. RESOURCE MANAGEMENT COMMITTEE
Committee Chair Seth Weightman called the committee meeting to order.

4.1 Consent Item(s) Moved to Discussion - None

4.2 Fiscal Year 2022 Cooperative Funding Process
Mr. Kevin Wills, Cooperative Funding Initiative lead, provided a presentation that included an overview of the CFI timeline, a comparison of fiscal year funding requests, preliminary funding requests by region, regional subcommittee assignments, and proposed meeting schedules and agendas.

This item was for the Board's information only and no action was required.

4.3 Initiation and Approval of Rulemaking to Amend Rule 40D-8.041, Florida Administrative Code, to Adopt Minimum Flows for the Lower Peace River and Accept Final Draft Report
Mr. Doug Leeper, Minimum Flows and Levels Program lead, defined Minimum Flows and Levels (MFLs) and provided background information. He provided an overview of the Lower Peace River. Mr. Leeper outlined the outreach that was completed by the District. He provided an overview of the peer review panel findings. Mr. Leeper explained the District's approach to minimum flows development involves evaluation of how flows can be reduced on a percentage basis without resulting in significant harm. He explained the technical process of assigning baseline flows, the flow-based block approach, and the use of the enhanced hydrodynamic modeling for development of recommended minimum flows for the Lower Peace River. Mr. Leeper noted that staff plans to return to the Governing Board in 2021 to request initiation and approval of rulemaking for adoption of minimum flows for Lower Shell Creek.

Staff Recommended the Board:
1. Accept the report entitled “Recommended Minimum Flows for the Lower Peace River and Proposed Minimum Flows for Lower Shell Creek, Final Draft, November 30, 2020.”
2. Authorize the initiation of rulemaking and approve the proposed rule language for the adoption of an amendment to Rule 40D-8.041, Florida Administrative Code, to update minimum flows for the Lower Peace River.
3. Authorize staff to make any necessary clarifying or minor technical changes that may result from the rulemaking process.

A motion was made and seconded to approve staff recommendation. The motion passed unanimously. (Audio – 01:14:12)

4.4 Annual Status of the Southern Water Use Caution Area Recovery Strategy
This was for information only. No action was required.

5. OPERATIONS, LANDS, AND RESOURCE MONITORING COMMITTEE
Committee Chair Jack Bispham called the committee meeting to order.

5.1 Consent Item(s) Moved to Discussion - None

5.2 Hydrologic Conditions Report

Ms. Asmita Shukla, lead Hydrologic Data analyst, presented the hydrologic conditions update. She provided rainfall distribution for the month of November and December 2020 (December 1 to 13) and a 12-month moving total for December 2019 through November 2020. Ms. Shukla stated that tropical storm Eta offset the rainfall deficit. Groundwater levels were in the normal range for the northern and central areas and above normal range in the southern region. Flows in the Withlacoochee, Hillsborough, Alafia, and Peace rivers were in the above normal range. However, normal seasonal declines are to be expected as we go through the dry season (October – May). Public water supply systems are healthy. She stated that winter and spring are expected to be dry due to La Niña conditions, but the chances are that we will return to above normal precipitation in the summer

5.3 Approval of Rulemaking to Amend Chapter 40D-9, Florida Administrative Code, to Adopt Proposed Revisions to Land Use Rules

Mr. Chris Reed, Land Management manager, provided an overview of the proposed rule amendments. He outlined the outreach that was conducted by the District. Mr. Reed explained why the rules are being updated. He provided an overview of the changes to the rule, benefits, and associated costs. These proposed rule changes will require approval by the Legislature.

A request to speak card was received from Mr. Shannon Turberville.

Mr. Turberville spoke in favor of the proposed rule amendments and commended District staff.

A request to speak card was received for Ms. Joanne Morrissey. She had a question about jurisdiction related to under water commercial welders. Ms. Morrissey 's concerns were not related to this topic or issues related the District. Staff agreed to contact Ms. Morrissey to help assist her to the best of their abilities.

Staff recommended the Board approve the proposed rule language for the adoption of amendment to Chapter 40D-9, Florida Administrative Code, to update District Land Use Rules. Authorize staff to make any necessary clarifying or minor technical changes that may result from the rulemaking process.

A motion was made and seconded to approve staff recommendation. The motion passed unanimously. (Audio: 01:44:59)

6. REGULATION COMMITTEE

Board Member Roger Germann called the committee meeting to order.

6.1 Consent Item(s) Moved to Discussion – None

6.2 Denials Referred to the Governing Board

No denials were presented.

7. GENERAL COUNSEL'S REPORT

7.1 Consent Item(s) Moved to Discussion - None

Ms. Karen West, general counsel, stated the Florida Department of Environmental Protection (DEP) published proposed rules on November 19 and held a rulemaking workshop. The public has an opportunity to submit lower cost regulatory alternatives. Four have been received on behalf of nine public water supply utilities. These will be reviewed by (DEP) and the District and determine if changes will be made to the rules. Ms. West will keep the Board updated.

8. COMMITTEE/LIAISON REPORTS

8.1 Industrial Advisory Committee

A written summary was provided for the November 10 meeting.

8.2 Public Supply Advisory Committee

A written summary was provided for the November 10 meeting.

9. EXECUTIVE DIRECTOR'S REPORT

9.1 Executive Director's Report

Mr. Brian Armstrong, executive director, recognized the role of the District and how its partnerships not only help protect the resource through developing alternative water supply but also create reliability. He cited the recent incident with the broken water main that occurred with the City of Tampa.

Mr. Armstrong also informed the Board of several awards the District received. The District earned the Government Finance Officers Association’s Certificate of Achievement for Excellence in Financial Reporting for its 2019 Annual Financial Report. Ms. Asmita Shukla received the A. Ivan Johnson Award for young professionals from the National American Water Resources Association. The District received 13 public relations awards from the Public Relations Society of America and the Florida Public Relations Associations for three District projects. The 2019 Save Our Waters Week Kayak Tour earned six local and state awards which included a Best of Show award. The Weeki Wachee Carrying Capacity Public Outreach earned three local and state awards and the District's 2019 Q&A series earned four local state awards.

10. CHAIR'S REPORT

10.1 Chair's Report

Chair Kelly Rice stated the next meeting is scheduled for January 26 at 9:00 a.m., in the Tampa Service office. He reminded the Board there was a public workshop following today's meeting at 11:30 a.m.

10.2 Employee Milestones

Chair Rice recognized staff who reached at least 20 years of service with the District and thanked them for their service. The following staff were recognized: Junior Beatty and Gwen Brown.

ADJOURNMENT

The meeting adjourned at 10:58 a.m.

From:	Chris Zajac
To:	Chuck Pavlos; Steve Adams; Laura Baumberger
Cc:	Sarah Burns; Victoria Steinnecker; Dennis Ragosta; Doug Leeper; Yonas Ghile; Randy Smith; Owen Thornberry; Eric DeHaven
Subject:	Lower Shell Creek MFL
Date:	Wednesday, January 27, 2021 9:20:15 AM

Chuck, Steve and Laura,

Please recall our last meeting in October when we introduced the results of our habitat (low salinity) response simulations that indicated a bypass structure may not be necessary to meet the proposed MFL. We've been working diligently to develop the draft Lower Shell Creek MFL rule and draft Water Use Permit conditions to eliminate the need for a recovery/prevention strategy.

I'd like to schedule a meeting to go over our latest efforts. I've checked calendars on my end and it appears we have availability for a remote meeting the afternoon of February 15th, 16th or 17th. Please check your calendars and let me know if any of these proposed dates will work for each of you. Once we settle on a date I'll send a meeting invitation.

I look forward to meeting with you all.

Chris Zajac
Environmental Flows and Assessments Manager
Natural Systems and Restoration Bureau
2379 Broad Street
Brooksville, FL 34604
(352) 796-7211, Ext. 4413
(352) 586-3776
Chris.Zajac@WaterMatters.org

From:	Yonas Ghile
To:	Chuck Pavlos; Steve Adams; Laura Baumberger; Sarah Burns; Victoria Steinnecker
Cc:	Chris Zajac; Kristina Deak; Doug Leeper; Owen Thornberry; Randy Smith; Eric DeHaven; Xinjian Chen
Subject:	Lower Shell Creek MFL
Date:	Tuesday, February 16, 2021 9:32:13 PM
Attachments:	shell_creek WUP_02_16_21.pdf

Hi All

Attached, please find a copy of my presentation. Laura, I will try to send out the spreadsheet model in a separate email but if it is too big in size I will send it tomorrow via ftp.

Thank you

Yonas Ghile, PhD, PH
Lead Hydrologist
Natural Systems & Restoration Bureau
Southwest Florida Water Management District
(352) 796-7211 Ext. 4488
Email: Yonas.Ghile@swfwmd.state.fl.us

Implementation of Lower Shell Creek Minimum Flows

Southwest Florida Water Management District

February 16, 2021

Review

1. MFLs developed for Lower Shell Creek (LSC) and Lower Peace River (LPR)
2. LPR MFLs rule making initiated
3. LSC MFLs scheduled for 2021
   - Agricultural runoff correction for inflows
   - Recovery project simulations
   - Low salinity habitat response
4. Results
   - Bypass structure may not be needed
   - Prevention strategy needs for LSC being assessed

Review (continued)

5. Prevention strategy may not be needed
   - Could address through Water Use Permit (WUP) modification
6. Draft WUP conditions
   - Meet LSC MFLs
   - Maximize available sources
   - Meet system reliability needs

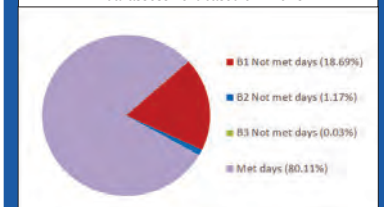
Approach for Minimum Flows Development

- Baseline flows developed for the period 1966 through 2018
  (Gaged outflow + surface withdrawals - agricultural flows)
- Identified three flow-based blocks using baseline flows
- Minimum flows developed based on combined ≤ 2psu salinity volume in the LPR/LSC

Flow-based Blocks	Low Flow (Block 1)	Medium Flow (Block 2)	High Flow (Block 3)
	<56 cfs	56 - 137 cfs	>137 cfs
Minimum Flows	87%	77%	60%

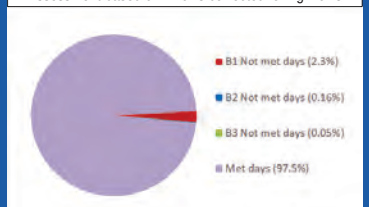
MFLs Status Assessment

Initial assessment based on inflows



- With the use of RO (3.5 mgd in B1 and 2 mgd in Blocks 2 and 3), MFLs met 89.9%.
- Recovery/prevention strategy (bypass facility) required

Assessment based on inflows corrected for Ag. flows



- With the use of RO (3.5 mgd in B1 and 2 mgd in Blocks 2 and 3), MFLs met 99.5%.
- No recovery/prevention strategy (bypass facility) required

MFLs Status Assessment

2020 Water Demand (5.4 mgd)	Counting Full Met MFLs Days	Recovery/Prevention Strategy Required?
No RO & No Bypass	98.8%	Yes
RO & No Bypass	99.8%	No
RO & 5 mgd Bypass	99.8%	No
RO & 20 mgd Bypass	99.9%	No
RO & 96 mgd Bypass	100.0%	No
2040 Water Demand (6.6 mgd)	**Counting Full Met MFLs Days**	**Recovery/Prevention Strategy Required?**
No RO & No Bypass	97.7%	Yes
RO & No Bypass	99.5%	No
RO & 5 mgd Bypass	99.7%	No
RO & 20 mgd Bypass	99.7%	No
RO & 144 mgd Bypass	100.0%	No

SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

RO and No Bypass Scenario

Month	Peaking Factors	2020	2040
Jan	1.04	5.62	6.86
Feb	1.05	5.67	6.93
Mar	1.13	6.10	7.46
Apr	1.17	6.32	7.72
May	1.08	5.83	7.13
Jun	0.88	4.75	5.81
Jul	0.78	4.21	5.15
Aug	0.67	3.62	4.42
Sep	0.84	4.54	5.54
Oct	1.03	5.56	6.80
Nov	1.20	6.48	7.92
Dec	1.11	5.99	7.33
Average	1.00	5.39	6.59

If Adusted Flow on the Previous Day Is	RO Use
<56 cfs	3.5 mgd
56 -137 cfs	2 mgd
>137 cfs	2 mgd

1. MFL met days = 99.5%
2. Water supply reliability (RO & Res) = 99.9%
3. TDS ≤ 500 mg/l

SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

Reservoir Withdrawals Based on Adjusted Flows

If Adjusted Flow on Previous Day Is:		Reservoir Withdrawal Based on MFLs	
≤ 56 cfs (36.2 mgd)	Jan	3.36	4.22
	Feb	3.43	4.22
	Mar	3.96	4.22
	Apr	4.22	4.22
	May	3.63	3.63
	Jun	2.31	3.10
	Jul	1.65	3.10
	Aug	0.92	3.10
	Sep	2.04	3.10
	Oct	3.30	3.10
	Nov	4.42	4.42
	Dec	3.83	4.42
>56 cfs (36.2 mgd) and ≤137cfs (88.5 mgd)		23% of Inflow (8.4 - 26.6 mgd)	
> 137 cfs (88.5 mgd)		40% of Inflow (35.4 - 2636 mgd)	

Month	Peaking Factors	2040 Demand
Jan	1.04	6.86
Feb	1.05	6.93
Mar	1.13	7.46
Apr	1.17	7.72
May	1.08	7.13
Jun	0.88	5.81
Jul	0.78	5.15
Aug	0.67	4.42
Sep	0.84	5.54
Oct	1.03	6.80
Nov	1.20	7.92
Dec	1.11	7.33
Average	1.00	6.59

SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

Reservoir Withdrawals Based on Adjusted Flows

If Adjusted Flow on Previous Day Is:		Reservoir Withdrawal Based on MFLs	Reservoir Withdrawal Based on Water Needs
≤ 56 cfs (36.2 mgd)	Jan - Apr	Maximum 4.22 mgd	Maximum 4.22 mgd
	May	Maximum 3.63 mgd	Maximum 3.63 mgd
	Jun - Oct	Maximum 3.10 mgd	Maximum 3.10 mgd
	Nov - Dec	Maximum 4.42 mgd	Maximum 4.42 mgd
>56 cfs (36.2 mgd) and ≤137 cfs (88.5 mgd)		23% of Inflow (8.4 - 26.6 mgd)	?
>137 cfs (88.5 mgd)		40% of Inflow (35.4 - 2636 mgd)	?

1. MFL met days = 99.5%
2. Reservoir water supply reliability = 71.6%
3. Reservoir and RO water supply reliability = 99.6%
4. TDS ≤ 500 mg/l

SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

Implementation of MFLs

If Adjusted Flow on Previous Day Is:		Reservoir Withdrawal Based on MFLs
≤ 56 cfs (36.2 mgd)	Jan - Apr	Maximum 4.22 mgd
	May	Maximum 3.63 mgd
	Jun - Oct	Maximum 3.10 mgd
	Nov - Dec	Maximum 4.42 mgd
>56 cfs (36.2 mgd) and ≤137 cfs (88.5 mgd)		23% of Inflow (8.4 - 26.6 mgd)
>137 cfs (88.5 mgd)		40% of Inflow (35.4 - 2636 mgd)



Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Ag. Flows (mgd)	8.5	11.0	14.7	8.7	6.8	27.0	10.1	0.0	0.0	0.7	5.3	6.0

Date	Res. Vol (mg)	Outflow (mgd)	Withdrawal (mgd)	Inflow (mgd)	Adjusted Inflow (mgd)	Block
8/8/1972	860.0	320.0	5.0	325.0	325.0	3
8/9/1972	860.0		?			

Date	Res. Vol (mg)	Outflow (mgd)	Withdrawal (mgd)	Inflow (mgd)	Adjusted Inflow (mgd)	Block
6/15/1972	800.0	0.0	3.0	43.0	16.0	1
6/16/1972	840.0		≤3.1			

SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

Next Steps

- City of Punta Gorda WUP modification
- Report to address new LSC MFLs assessment
- Meeting with CHNEP's Executive Director/TAC meeting
- Presentation to Environmental Advisory Committee (April 2021)
- Presentation to Public Supply Advisory Committee (May 2021)
- Public workshop
- Presentation to Governing Board

SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

RE: Lower Shell Creek MFL

Laura Baumberger <LBaumberger@carollo.com>

Wed 2/17/2021 9:55 AM

To: Yonas Ghile <Yonas.Ghile@swfwmd.state.fl.us>; Chuck Pavlos <CPavlos@cityofpuntagordafl.com>; Steve Adams <SAdams@cityofpuntagordafl.com>; Sarah Burns <sburns@carollo.com>; Victoria Steinnecker <vsteinnecker@carollo.com>
Cc: Chris Zajac <Chris.Zajac@swfwmd.state.fl.us>; Kristina Deak <Kristina.Deak@swfwmd.state.fl.us>; Doug Leeper <Doug.Leeper@swfwmd.state.fl.us>; Owen Thornberry <Owen.Thornberry@swfwmd.state.fl.us>; Randy Smith <Randy.Smith@swfwmd.state.fl.us>; Eric DeHaven <Eric.Dehaven@swfwmd.state.fl.us>; Xinjian Chen <Xinjian.Chen@swfwmd.state.fl.us>

[EXTERNAL SENDER] Use caution before opening.

Thank you, Yonas.

We received both the presentation and the model. We will take a look at this with the City and let the District know of any comments.

Regards,
Laura

Laura Baumberger, PE
Project Manager | Vice President
301 North Cattlemen Road, Suite 302 | Sarasota, FL 34232
P 941-371-9832 | M 941-400-2320
carollo.com

From: Yonas Ghile <Yonas.Ghile@swfwmd.state.fl.us>
Sent: Tuesday, February 16, 2021 9:32 PM
To: Chuck Pavlos <CPavlos@cityofpuntagordafl.com>; Steve Adams <SAdams@cityofpuntagordafl.com>; Laura Baumberger <LBaumberger@carollo.com>; Sarah Burns <sburns@carollo.com>; Victoria Steinnecker <vsteinnecker@carollo.com>
Cc: Chris Zajac <Chris.Zajac@swfwmd.state.fl.us>; Kristina Deak <Kristina.Deak@swfwmd.state.fl.us>; Doug Leeper <Doug.Leeper@swfwmd.state.fl.us>; Owen Thornberry <Owen.Thornberry@swfwmd.state.fl.us>; Randy Smith <Randy.Smith@swfwmd.state.fl.us>; Eric DeHaven <Eric.Dehaven@swfwmd.state.fl.us>; Xinjian Chen <Xinjian.Chen@swfwmd.state.fl.us>
Subject: Lower Shell Creek MFL

Hi All

Attached, please find a copy of my presentation. Laura, I will try to send out the spreadsheet model in a separate email but if it is too big in size I will send it tomorrow via ftp.

Thank you

Yonas Ghile, PhD, PH
Lead Hydrologist
Natural Systems & Restoration Bureau
Southwest Florida Water Management District
(352) 796-7211 Ext. 4488
Email: Yonas.Ghile@swfwmd.state.fl.us

Doug Leeper

From: Chris Zajac
Sent: Friday, March 5, 2021 11:53 AM
To: Chuck Pavlos; Steve Adams
Cc: Laura Baumberger; Sarah Burns; Victoria Steinnecker; Dennis Ragosta; Eric DeHaven; Randy Smith; Yonas Ghile; Doug Leeper; Kristina Deak; Xinjian Chen; Owen Thornberry; Ryan J. Pearson
Subject: Lower Shell Creek MFL

Chuck and Steve,

I want to thank you again for meeting with us a couple weeks ago to further discuss the Lower Shell Creek MFL and the City's Water Use Permit. I hope you and your team are finding time to review the information we presented. Once again, we'd be more than happy to answer any questions that may come up during your review. We look forward to hearing from you and your team in the near future.

Chris Zajac
Environmental Flows and Assessments Manager
Natural Systems and Restoration Bureau
2379 Broad Street
Brooksville, FL 34604
(352) 796-7211, Ext. 4413
(352) 586-3776
Chris.Zajac@WaterMatters.org

From:	Mary Thomas
To:	Eric DeHaven; Stephen James; Mike Coates; Jim Guida; Ptara; Dale Helms; Randy Smith; Jennette Seachrist; Chris Zajac; Yonas Ghile; Lei Yang; Jay Hoecker; John F. Ferguson; George A. Schlutermann; Owen Thornberry; Darrin Herbst; April D. Breton; Cindy C. Rodriguez; Adrienne E. Vining
Cc:	Doug Leeper; Gary Hubbard; Biehl, Tabitha; Wiley, David; Michelle Hopkins; Mike Britt; Thomas A. Cloud, Esquire; Kniss, Robert; palmer.Davis@lakelandgov.net; Chris A. Tumminia; Bayhan, David; Edward de la Parte Jr.; Terri Holcomb; Azzarella, Krystal; John Murphy; Drew Crawford (Drew@BosDun.com)
Subject:	RE: Peace River Coordination
Date:	Monday, March 29, 2021 4:58:30 PM

[EXTERNAL SENDER] Use caution before opening.

Good afternoon, folks:

Here is an agenda for tomorrow's 3:00 coordination meeting. Let us know if you have any question ahead of time.

- Lower Peace MFL **update by SWFWMD**
- Water availability model – **by PRWC**
- WUP application status – **by PRWC**
- Timeline – **by PRWC**
- WUP Application update - **by PRMRWSA**
- Discussion

Mary

-----Original Appointment-----
From: Eric DeHaven [mailto:Eric.Dehaven@swfwmd.state.fl.us]
Sent: Thursday, March 25, 2021 2:26 PM
To: Eric DeHaven; Mary Thomas; Stephen James; Mike Coates; Jim Guida; Ptara; Dale Helms; Randy Smith; Jennette Seachrist; Chris Zajac; Yonas Ghile; Lei Yang; Jay Hoecker; John F. Ferguson; George A. Schlutermann; Owen Thornberry; Darrin Herbst; April D. Breton; Cindy C. Rodriguez; Adrienne E. Vining
Cc: Doug Leeper; Gary Hubbard; Biehl, Tabitha; Wiley, David; Michelle Hopkins; Mike Britt; Thomas A. Cloud, Esquire; Kniss, Robert; palmer.Davis@lakelandgov.net; Chris A. Tumminia; Bayhan, David; Edward de la Parte Jr.; Terri Holcomb; Azzarella, Krystal; John Murphy; Drew Crawford (Drew@BosDun.com)
Subject: Peace River Coordination
When: Tuesday, March 30, 2021 3:00 PM-5:00 PM (UTC-05:00) Eastern Time (US & Canada).
Where: Microsoft Teams Meeting

As this meeting has expanded in size, I have resent this invite to all who have accepted with a call-in option now included (see below).

This will be a remote TEAMS meeting. The purpose of the meeting is to continue coordination

efforts on water supply availability associated with the Peace River. The agenda is focused on the PRWC providing information on plans for water use on Peace Creek/Peace River.

Please forward to other necessary staff.

Thanks!

Eric DeHaven

Microsoft Teams meeting

Join on your computer or mobile app
Click here to join the meeting
Or call in (audio only)
+1 786-749-6127,,476192136# United States, Miami
Phone Conference ID: 476 192 136#
Find a local number | Reset PIN



INTERNAL USERS: Please use headset and microphone to join meeting audio. EXTERNAL USERS: Please dial toll # or use headset and microphone to join meeting audio.
Learn More | Meeting options

From:	Mary Thomas
To:	Eric DeHaven; Stephen James; Mike Coates; Jim Guida; Ptara; Dale Helms; Randy Smith; Jennette Seachrist; Chris Zajac; Yonas Ghile; Lei Yang; Jay Hoecker; John F. Ferguson; George A. Schlutermann; Owen Thornberry; Darrin Herbst; April D. Breton; Cindy C. Rodriguez; Adrienne E. Vining
Cc:	Doug Leeper; Gary Hubbard; Biehl, Tabitha; Wiley, David; Michelle Hopkins; Mike Britt; Thomas A. Cloud, Esquire; Kniss, Robert; palmer.Davis@lakelandgov.net; Chris A. Tumminia; Bayhan, David; Edward de la Parte Jr.; Terri Holcomb; Azzarella, Krystal; John Murphy; Drew Crawford (Drew@BosDun.com)
Subject:	RE: Peace River Coordination
Date:	Thursday, April 1, 2021 10:01:25 AM
Attachments:	20210330_PRMRWSA.pdf

[EXTERNAL SENDER] Use caution before opening.

Good morning:

Attached are the draft notes we took during Tuesday's coordination meeting. Let us know if you have any questions or edits. Also attached are the slides presented.

Mary

-----Original Appointment-----
From: Eric DeHaven [mailto:Eric.Dehaven@swfwmd.state.fl.us]
Sent: Thursday, March 25, 2021 2:26 PM
To: Eric DeHaven; Mary Thomas; Stephen James; Mike Coates; Jim Guida; Ptara; Dale Helms; Randy Smith; Jennette Seachrist; Chris Zajac; Yonas Ghile; Lei Yang; Jay Hoecker; John F. Ferguson; George A. Schlutermann; Owen Thornberry; Darrin Herbst; April D. Breton; Cindy C. Rodriguez; Adrienne E. Vining
Cc: Doug Leeper; Gary Hubbard; Biehl, Tabitha; Wiley, David; Michelle Hopkins; Mike Britt; Thomas A. Cloud, Esquire; Kniss, Robert; palmer.Davis@lakelandgov.net; Chris A. Tumminia; Bayhan, David; Edward de la Parte Jr.; Terri Holcomb; Azzarella, Krystal; John Murphy; Drew Crawford (Drew@BosDun.com)
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Please forward to other necessary staff.

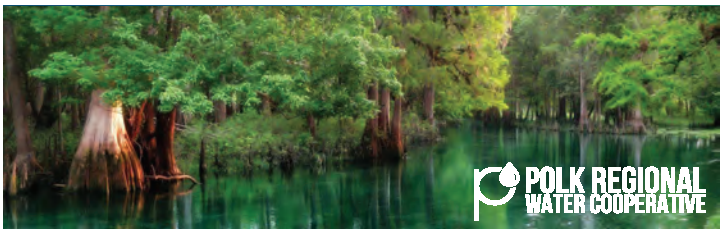
Thanks!

Eric DeHaven

Microsoft Teams meeting

Join on your computer or mobile app
Click here to join the meeting
Or call in (audio only)
+1 786-749-6127,,476192136# United States, Miami
Phone Conference ID: 476 192 136#
Find a local number | Reset PIN

INTERNAL USERS: Please use headset and microphone to join meeting audio. EXTERNAL USERS: Please dial toll # or use headset and microphone to join meeting audio.
Learn More | Meeting options



PRWC
Upper Peace WUP Application Update
March 30, 2021

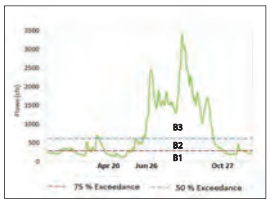
Agenda

- Lower Peace MFL update by SWFWMD
- PRWC water availability model
- PRWC WUP application status
- Timeline
- Updates on PRMRWSA
- Discussion

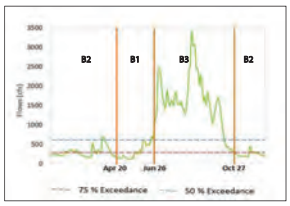
Lower Peace MFL Update

- Lower Peace River MFL re-evaluation increases amount of water potentially available for withdrawal.

Calendar-based blocks



Flow-based blocks



Lower Peace MFL Update

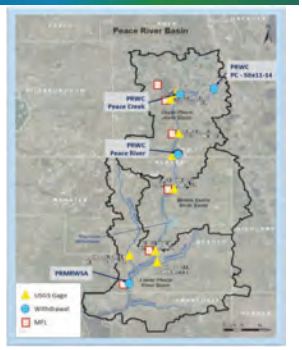
- Modified Lower Peace River MFL (April 2021 adoption)

Flow-Based Block	Combined Flow on Previous Day	Minimum Flow	Potentially Allowable Withdrawal
1	< 130 cfs	Combined flow	0 cfs
	130 - 149 cfs	130 cfs	Q - 130 cfs
	149 - 297 cfs	87% of combined flow	13% * Q
2	297 - 335 cfs	258 cfs	Q - 258 cfs
	335 - 622 cfs	77% of combined flow	23% * Q
3	622 - 798 cfs	479 cfs	Q - 479 cfs
	> 798 cfs	60% of combined flow	40% * Q [(a)]

[(a)] Maximum daily withdrawal limited to 400 cfs (258 mgd); applies to withdrawals from Lower Peace River only.

Water Availability Model

- Numerous coordination meetings held
- Consensus with District on key assumptions:
  - Include Lake Hancock Reservation
  - Use revised (2021) Lower Peace River MFL
  - Remove Winter Haven WWTP#3 discharge
  - Add Peace Creek minimum flow threshold
  - 400-cfs limit applies to Lower PR withdrawals only
- Key constraints to upper Peace withdrawals:
  - Respect max allowable PRMRWSA withdrawals (as allocated in WUP, whether pumped or not)
  - Peace River MFLs
    - Upper (Bartow to Zolfo Springs)
    - Middle (Zolfo Springs to Arcadia)
    - Lower (Arcadia to Charlotte Harbor)



Water Availability Model

PRWC AWS PROJECTS PHASE 1
Peace River System Water Availability Analysis
Model Input and Assumptions — 3/29/2021
Version: 11.0

INPUT OPTIONS	(user input in highlighted cells)	
A. Applicable Lower Peace River Minimum Flow (LPR MF) regulation =	Revised (2021)	
Flow-based blocks		
Block 1 max withdrawal rate by rule, as percent of flow	13%	
Block 2 max withdrawal rate by rule, as percent of flow	23%	
Block 3 max withdrawal rate by rule, as percent of flow	40%	
Maximum daily withdrawal limit from Lower Peace River	400	cfs
B. Applicable PRMRWSA WUP withdrawal constraints =	Revised WUP w/ Block 3 @ 40%	
Flow-based blocks		
Block 1 max withdrawal rate per WUP special condition 4	13%	
Block 2 max withdrawal rate per WUP special condition 4	23%	
Block 3 max withdrawal rate per WUP special condition 4	40%	
C. PRMRWSA WUP maximum daily withdrawal limit (210 or 258 mgd) =	210	mgd
PRMRWSA WUP maximum daily withdrawal limit, cfs	325	cfs
D. Keep or remove WWTP#3 discharge from Peace Creek flow? =	Remove	
E. Minimum flow threshold for Peace Creek (optional) =	2	cfs
(Gaged historical (2005-2019) minimum creek flow was 1.41 cfs		
F. PRWC Peace River diversion peak pumping capacity, $PUMP_{PRWC}$ =	85	mgd
Peace River at Bowling Green intake pump station, cfs	132	cfs
G. PRWC Peace Creek diversion peak pumping capacity, $PUMP_{PCR}$ =	80	mgd
Peace Creek near Bartow intake location pump station, cfs	124	cfs

RESULTS SNAPSHOT

Long-term (45-year) estimated water availability statistics:

Diversion Location	Withdrawal, as Constrained by Pump	% of Days w/ Diversion
Maximum Day Diversion		
PRMRWSA Lower PR	210.3 mgd	
PRWC PR-Bowling Green	85.0 mgd	
PRWC PC-Bartow	80.0 mgd	
PRWC Total	165.0 mgd	
Long-Term Average Diversion		
PRMRWSA Lower PR	102.0 mgd AADF	86.3%
PRWC PR-Bowling Green	24.4 mgd AADF	34.7%
PRWC PC-Bartow	7.6 mgd AADF	19.1%
PRWC Total	32.0 mgd AADF	34.7%

Example Model Output

Scenario No.	Scenario Assumptions: Lower Peace River MFL Rule	PRMRWSA WUP Withdrawal Constraints	PRMRWSA Block 3 Withdrawal Cap (% of Flow)	PRMRWSA WUP Max Daily Withdrawal Limit (mgd)	Scenario Results - Long-Term (45-Yr Simulation) Estimated Water Availability: PRMRWSA Lower Peace River Intake — Assumed Intake Pump Station Capacity: 210-mgd or 258-mgd pump — Max Day [1] (mgd)	Long-Term Average [2] (mgd AADF)	Range of Annual Averages [3] (mgd AADF)	% of Days with Diversion	Concurrent PRWC Projects (Upper Peace River and Peace Creek intakes) PRWC Total Diversion Peace River plus Peace Creek — 165-mgd combined pumps — Max Day [1] (mgd)	Long-Term Average [2] (mgd AADF)	Range of Annual Averages [3] (mgd AADF)	% of Days with Diversion
1	Existing	Current WUP	28%	210	210.0	91.8	21.2-160.2	86.3%	165.0	30.6	1.4-66.3	39.2%
2	Revised	Current WUP	28%	210	210.0	90.6	20.5-157.2	86.3%	165.0	38.9	3.8-82.6	59.3%
3	Revised	Revised WUP	28%	210	210.0	95.7	22.5-164.7	86.3%	165.0	35.3	0.9-78.6	39.8%
4	Revised	Revised WUP	40%	210	210.0	102.0	24.2-177.2	86.3%	165.0	32.0	0.4-71.4	34.7%
5	Revised	Revised WUP	28%	258	258.0	106.7	23.5-187.3	86.3%	165.0	35.1	0.9-78.2	39.8%
6	Revised	Revised WUP	40%	258	258.0	117.9	26.1-207.1	86.3%	165.0	28.9	0.1-66.1	30.1%

Notes:

(1) Maximum daily raw surface water withdrawal rate estimated in long-term (45-year) continuous daily time series analysis.

(2) Long-term (45-year) average raw surface water withdrawal rate estimated in continuous daily time series analysis.

(3) Range of calendar year annual average withdrawal rates estimated for individual years in long-term (45-year) continuous daily time series analysis.

PRWC WUP Application Status

- WUP application under development
- 50-year permit duration request
- Consolidated Upper Peace WUP with flexibility
- Allocation request will include both public supply and environmental restoration use types
- Consistent with District goals of ensuring adequate water supply and protecting natural systems KG2
- Permit format/conditions similar to PRMRWSA WUP
- Stakeholder coordination underway
- Submittal will include PRWC and co-applicants

Slide 8

KG2 Two versions of same comment - pick one
Kathleen Gierok, 3/29/2021

Peace River Project

- Surface water intake and screens
- Large reservoir
- ASR storage
- Water treatment facility & injection wells
- Interconnected transmission main



Peace Creek Project

- Surface water intakes
- Wetlands treatment
- Aquifer recharge
- Aquifer recovery
- Potable water supply



Natural Systems Restoration

- PRWC stakeholder projects
- Surface water intakes
- Analysis of previous hydrologic pathways
- Rehydration of wetlands and surface waters
- Flow-through systems (water returned to upper Peace River system)



Timeline

- Currently incorporating stakeholder projects into availability model
- Pre-application meeting to be scheduled with District
- Application to be submitted in late April 2021

Updates by PRMRWSA

Discussion

Polk Regional Water Cooperative
Technical Advisory Committee
Upper Peace Water Use Permit Meeting Summary
DRAFT

To: Polk Regional Water Cooperative (PRWC) TAC Primaries
Meeting Attendees

From: PRWC – Stephen James / TeamOne Consultants

Date: April 1, 2021

Subject: PRMRWSA, PRWC, SWFWMD Coordination Meeting
March 30, 2021

Background

A coordination meeting between Polk Regional Water Cooperative (PRWC), the Peace River Manasota Regional Water Supply Authority (PRMRWSA), and the Southwest Florida Water Management District (SWFWMD) was held on Tuesday, March 30, 2021. The meeting generally followed the agenda as presented below.

1. Background

Eric DeHaven (SWFWD) kicked off the meeting by indicating that this was a continuation of coordination meetings that have taken place over the past 15 months. The purpose of these meetings is to bring technical staff together to coordinate efforts on the available water in the Peace River system given the constraints such as existing legal users and various MFLs.

The District developed an initial water availability model with the intent of assisting all parties better understand whether, and how much additional water would be available. Following coordination with the District, PRWC has been using a version of that model to evaluate options for future PRWC withdrawals. At the request of the District, PRMRWSA provided an update last winter on their reliability modeling and plans for a WUP modification given the recent re-evaluation of the Lower Peace MFL. This current meeting provided the PRWC an opportunity to update the parties on their water availability modeling and WUP application status.

2. Update on Lower Peace MFL and Timeline

Chis Zajac (SWFWMD) provided an update on the Lower Peace MFL. The District completed a comprehensive reevaluation of minimum flows in 2020. That included updating water level, ecological, and other data now available. The reevaluation resulted in a shift from a calendar-based MFL to a flow-based MFL as presented in the meeting

materials. This shift would allow some additional water to potentially be available for withdrawal. The MFL rule was adopted on March 23, 2021, with an effective date of April 12, 2021.

3. Water Availability Model

Dale Helms (TeamOne) indicated that the PRWC has developed a refined water availability model which has been discussed at length with District staff. The model is a spreadsheet-based tool which takes historical USGS gage flows and identifies water supply available from certain points considering potential constraints. These constraints include withdrawal rates authorized by the PRMRWSA WUP and the Peace River MFLs (upper, middle, and lower).

The model assumes and respects the entire amount of water PRMRWSA is authorized to withdraw, notwithstanding the amount actually withdrawn. The model also assumes that Winter Haven will no longer discharge water from WWTP#3 into the Peace Creek Canal in the future, as the City has historically done.

As a result of the updated Lower Peace MFL language, the model also assumes that the 400-cfs daily limit only applies to Lower Peace River withdrawals, and not to proposed withdrawals from the river system upstream of Arcadia. The model applies an assumed minimum threshold for Peace Creek withdrawals, which protects the creek from withdrawals that would result in water levels dropping below the historical minimum creek flow.

Dale presented a sample model interface and demonstrated the different scenario capabilities, including input options for which Lower Peace River MFL, which PRMRWSA WUP constraints, and which PRWC peak diversion capacities are used. Eric asked for confirmation that the model contemplates total withdrawals, and not individual Peace River/Peace Creek withdrawals. Dale confirmed that the model considers the combined impacts of all withdrawals together, which is important due to the limited availability from the system and the fact that the intakes affect each other. The version of the model presented at the meeting contemplates the PRMRWSA withdrawal and two representative PRWC withdrawal locations—one along the Peace Creek Canal near Bartow, and another along the upper Peace River near the Polk County line.

Eric asked what the percentages indicated. Dale responded that they represent the percent of days over the long-term (45-year) simulation period on which some amount of diversion is assumed to be able to occur.

Mike Coates (PRMRWSA) asked if "lag time" was considered in the model. Dale responded that it was not; that the model is a simple daily accounting system in line with the way that compliance with the MFLs is typically determined.

Dale presented a sensitivity analysis which showed the potential range of water that may be available to the PRWC under various MFL and PRMRWSA WUP condition assumptions. Yonas Ghile (SWFWMD) asked whether the model considered withdrawing from Peace Creek first, or the Peace River at the County line first. Dale responded that the current model prioritizes withdrawals from PRMRWSA, then from the Peace River near the County Line, then from the Peace Creek. However, the order of priority for potential PRWC withdrawals is arbitrary and could be subject to a future operational protocol. Dale added that water available from the river system varies significantly based on weather, and that annual average withdrawal rates predicted over the long-term simulation period can vary greatly.

Lei Yang (SWFWMD) asked how the model applies the 400-cfs daily withdrawal cap associated with the Lower Peace River MFL. Dale responded that the cap only constrains withdrawals directly from the Lower Peace River (i.e., the PRMRWSA withdrawal), consistent with the latest Lower Peace River MFL language. The model does not apply a daily 400-cfs limit on withdrawals from the upper segments of the river, although percentage of flow and other minimum flow constraints are fully applied.

Doug Leeper (SWFWMD) asked if water would be available during (flow-based) Blocks 1 and 2. Dale confirmed that Block 3 is the predominant time of year that additional water is estimated to be available from the upper Peace system.

4. PRWC WUP Application

Katie Gierok (TeamOne) indicated that TeamOne is currently preparing a WUP application on behalf of the PRWC and its co-applicants with a requested 50-year duration. In the application, the PRWC would request flexibility amongst intake locations, so long as total withdrawals still complied with all MFLs and existing legal uses in a cumulative manner.

PRWC will also endeavor to ensure that the WUP application is consistent with District goals of providing reliable water supply and natural system restoration.

Katie described the major elements of the PRWC Peace Creek and Peace River projects, and discussed the natural system restoration projects planned by other PRWC stakeholders (and co-applicants) as detailed in the presentation.

Katie concluded with a proposed timeline. TeamOne is working with stakeholders on project intake locations and withdrawal needs, and then will schedule a pre-application meeting with SWFWMD.

5. PRMRWSA WUP Application update

Mike Coates indicated that the PRMRWSA plans to request a modification to their WUP in response to the new Lower Peace River MFL limits. They are preparing the WUP

application now, running a number of scenarios to see what would be needed. Mike indicated that he had hoped to have a meeting with PRWC to discuss the operational protocol before WUP applications are submitted. The timeframe for PRMRWSA to submit a permit application is contingent upon the operational protocol.

Eric suggested that a meeting between the PRMRWSA and PRWC to discuss the protocol would be a good idea, and Stephen concurred. Dale indicated that the PRWC has sufficient data to meet at any time.

It was suggested that a meeting should be held in the next two weeks, with SWFWMD continuing to participate. Mike Coates will send a few dates to coordinate.

6. Action Items

- Mike Coates and Stephen James will work to identify a date for the next coordination meeting.
- Mary will send out the PRWC presentation slides and minutes.
- Dale will follow up with information on when the model can be shared.

7. Meeting Attendees

SWFWMD

- Eric DeHaven
- Chris Zajac
- Doug Leeper
- Jim Guida
- Megan Albrecht
- Cindy Rodriguez
- Michelle Hopkins
- Mike Bray
- Owen Thornberry
- Randy Smith
- Yonas Ghile
- Darrin Herbst
- George Schlutermann
- Jay Hoecker
- Jennette Seachrist
- John Ferguson
- Lei Wang
- Lisann Morris
- Adrienne Vining
- April Breton

PRWC

- Brian Wheeler
- Tom Cloud
- Dale Helms
- Mary Thomas
- Katie Gierok
- Robert Beltran
- Tabitha Biehl
- Dave Wiley
- Ed de la Parte
- Bill Anderson
- Scott Manahan
- John Murphy
- Mike Britt
- Josh Behr
- Sean Parker
- David Bayhan
- Drew Crawford
- Robby Kniss

PRMRWSA

- Patrick Tara
- Mike Coates
- Doug Manson
- Terri Holcomb

From: Chris Zajac
To: Yonas Ghile; Doug Leeper; Kristina Deak; Randy Smith; Eric DeHaven; Xinjian Chen
Subject: FW: Maximum Day Demand under Latest Proposed MFL
Date: Friday, April 2, 2021 3:56:20 PM
Attachments: image001.png
image002.png
image005.png

All,

I spoke with Steve Adams this afternoon to get an update on the City's review of our latest model run. Steve indicated that Carollo has been working through an analysis investigating daily peaking factors to get a handle on how often the City may need the Peace Pipeline and if they can maintain a "net zero" balance with the Authority. Steve forwarded the email string below to demonstrate the efforts to date since we met with them in February.

Laura and her team are working on a summary report and Steve indicated that we would get a copy for review as soon as the City gets the first draft. He felt that we could see something in as early as 2 weeks but did indicate he gave Carollo no defined timeline. I reminded him of our schedule to take the Lower Shell Creek MFL to the Environmental Advisory Committee on April 13th and Public Supply Advisory Committee on May 11th.

I offered to assist in any way to expedite the schedule and told him we would be happy to present the MFL to his City Council as soon as he's ready. I'll continue to reach out to Laura and/or Steve approximately every 2 weeks as needed to keep us all updated.

Chris Zajac
Environmental Flows and Assessments Manager
Natural Systems and Restoration Bureau
2379 Broad Street
Brooksville, FL 34604
(352) 796-7211, Ext. 4413
(352) 586-3776
Chris.Zajac@WaterMatters.org

From: Steve Adams <SAdams@cityofpuntagordafl.com>
Sent: Friday, April 2, 2021 1:24 PM
To: Chris Zajac <Chris.Zajac@swfwmd.state.fl.us>
Subject: E: Maximum Day Demand under Latest Proposed MFL

[EXTERNAL SENDER] Use caution before opening.

Steve Adams
Utilities Engineering Manager
Utilities

City of Punta Gorda
326 West Marion Avenue
Punta Gorda, Florida 33950
941-575-3325
www.CityofPuntaGordaFL.com

From: Laura Baumberger [mailto:LBaumberger@carollo.com]

Sent: Monday, March 29, 2021 11:23 AM
To: Steve Adams <SAdams@cityofpuntagordafl.com>
Cc: Steven Leonard <SLeonard@cityofpuntagordafl.com>; Chuck Pavlos <CPavlos@cityofpuntagordafl.com>; Gregory B. Murray <GMurray@cityofpuntagordafl.com>
Subject: [EXTERNAL] RE: Maximum Day Demand under Latest Proposed MFL

MESSAGE FROM AN EXTERNAL SENDER: Please use caution when opening attachments, clicking links, or replying to this message.
Good morning,

We are happy to adapt the MFL report to include these items. We will finish preparing our Draft Report and will submit it to the City for review.

A few items of clarification:

1. Please confirm that you want to use the monthly peaking factors for evaluating how the City will meet its demands. These future demands are listed below, and we would provide a summary chart or table of how the City would meet these demands for each month.

Month	Peaking Factors	2040 Demand
Jan	1.04	6.86
Feb	1.05	6.93
Mar	1.13	7.46
Apr	1.17	7.72
May	1.08	7.13
Jun	0.88	5.81
Jul	0.78	5.15
Aug	0.67	4.42
Sep	0.84	5.54
Oct	1.03	6.80
Nov	1.20	7.92
Dec	1.11	7.33
Average	1.00	6.59

This would therefore not consider a peak day event. The City at times has seen a peak day factor of 1.5 to 1.65 over the past five years. These peak day events could be met through extra purchase from the Authority. In other words, a peak day event, which is expected to occur only once per year, would be met using additional purchase from the Authority. Since this is only one potential day per year we will not account for this in the analysis nor calculate it as part of the cost of purchased water.

Note that the monthly demands listed above are averages for the month – there would be some days during each month that are slightly higher and slightly lower than the demands listed above. However, in theory, you would be able to purchase extra water from the Authority on the higher days and give them back water on the lower demand days to achieve a net zero from the Authority.

2. For the existing RO facility – the District is using an available capacity of 3.5 mgd for the RO system in their model and analysis. This was discussed awhile back with Steve L. and Brian. The 3.5 mgd means that, on average, the RO plant could provide 3.5 mgd to the City during a maximum month condition. This gives some flexibility for one of the trains to be out of service some of the time for maintenance.

Please let me know if you are in agreement with these assumptions or if you would like to discuss.

Thanks,
Laura

From: Steve Adams <SAdams@cityofpuntagordafl.com>
Sent: Thursday, March 25, 2021 8:30 AM
To: Laura Baumberger <LBaumberger@carollo.com>
Cc: Steven Leonard <SLeonard@cityofpuntagordafl.com>; Chuck Pavlos <CPavlos@cityofpuntagordafl.com>; Gregory B. Murray <GMurray@cityofpuntagordafl.com>
Subject: RE: Maximum Day Demand under Latest Proposed MFL

Hi Laura:

Thanks for the helpful discussion yesterday regarding MFL, and peak day demand at 2040. We are in agreement that we do not need to use a peak day factor of 1.65, and this can be adjusted to the monthly peak day factors with future analysis.

I think the next step should be, We would like a MFL summary report with sections similar to:

1. 20 year water demand projections of AAD and Pk Day
2. Summary of how current facilities and current WUP would meet demands
3. Summary of how current facilities and the proposed WUP would meet demands
4. Summary of Authority contract, and inner connect capacity to deliver water to Shell Creek
5. Estimate cost of purchased water from Authority, under the proposed WUP, this could be per year 2020-2040.

The goal is to issue a report to City Council which will addresses the proposed MFL rule and how the City will meet future water supply needs in the 20 year planning period. We will also want a Powerpoint and a presentation to City Council summarizing this report. Then once the City Council has an understanding of this issue, we will be ready to have SWFWMD staff come and present the MFL, and ask for approval, or other considerations.

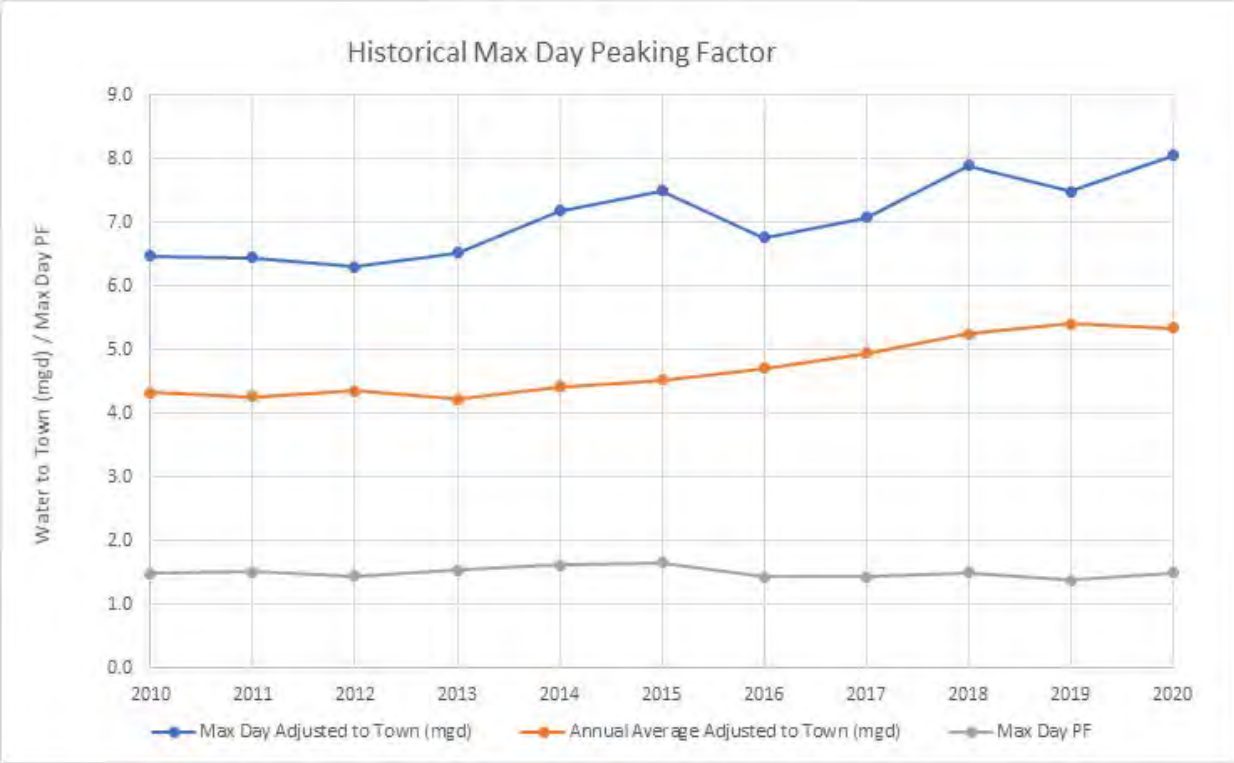
Steve Adams
Utilities Engineering Manager
Utilities

City of Punta Gorda
326 West Marion Avenue
Punta Gorda, Florida 33950
941-575-3325
www.CityofPuntaGordaFL.com

From: Laura Baumberger [mailto:LBaumberger@carollo.com]
Sent: Tuesday, March 02, 2021 4:18 PM
To: Brian Fuller <BFuller@cityofpuntagordafl.com>; Steve Adams <SAdams@cityofpuntagordafl.com>; Steven Leonard <SLeonard@cityofpuntagordafl.com>
Cc: Victoria Steinnecker <vsteinnecker@carollo.com>; Sarah Burns <sburns@carollo.com>
Subject: [EXTERNAL] RE: Maximum Day Demand under Latest Proposed MFL

MESSAGE FROM AN EXTERNAL SENDER: Please use caution when opening attachments, clicking links, or replying to this message.
Hello again,

Brian provided the additional data for 2020, and the updated chart is below. The additional year of data does not change the discussion regarding future max day demands in the email below.



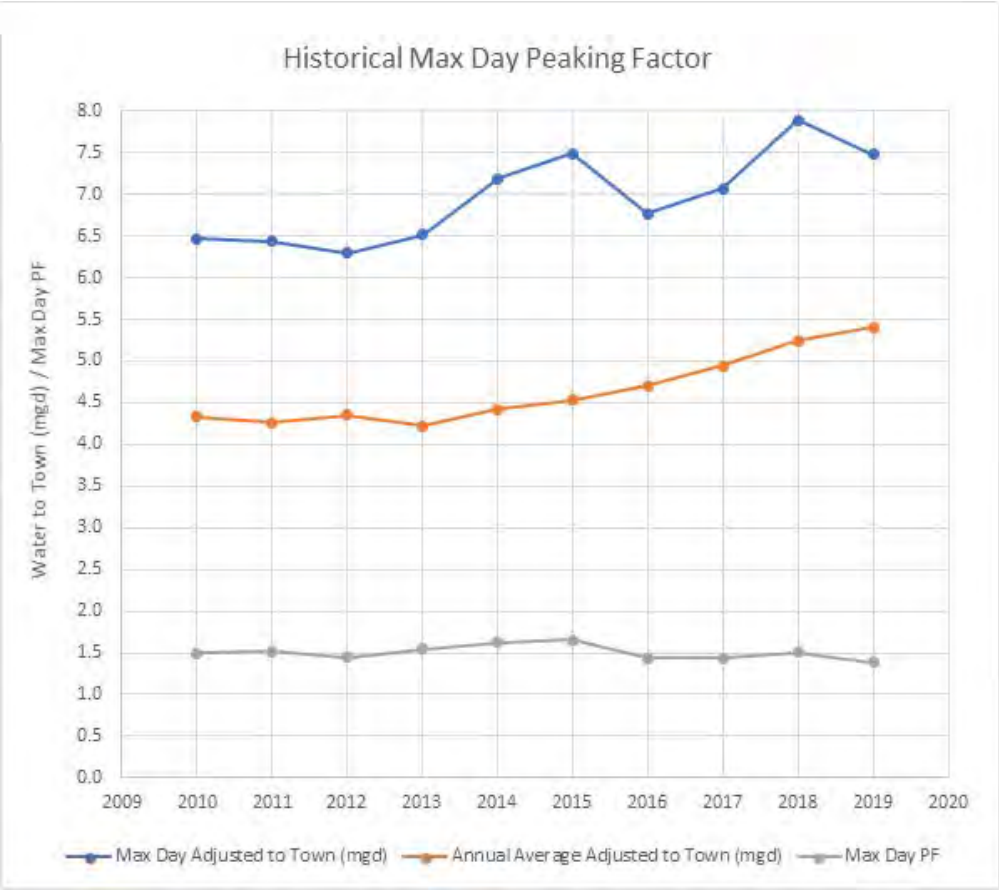
Please let me know if you'd like to schedule a brief call to discuss, or if/how you would like us to proceed in providing any feedback to SWFWMD.

Thanks,
Laura

From: Laura Baumberger
Sent: Monday, March 1, 2021 2:34 PM
To: 'Brian Fuller' <BFuller@cityofpuntagordafl.com>; Steve Adams <SAdams@cityofpuntagordafl.com>; Steven Leonard <SLeonard@cityofpuntagordafl.com>
Cc: Victoria Steinnecker <vsteinnecker@carollo.com>; Sarah Burns <sburns@carollo.com>
Subject: Maximum Day Demand under Latest Proposed MFL

All,

Below is an analysis of the past 10 years of maximum day demands. Please also see the discussion below the chart.



This is all based on the "adjusted water to town", which takes into account water sent to the distribution system and water purchased/sold to Peace River. Brian is working on compiling the data for 2020 so that we can add last year to this analysis as well.

The highest maximum day peaking factor (PF) over the past 10 years was 1.65.

Using the PF of 1.65 and the projected annual average demand in 2040 of 6.59 mgd, the projected future max day demand in 2040 is:

6.59 x 1.65 = 10.87 mgd

In order to meet this demand using the worst-case reservoir condition (Block 1, months of Jun-Oct) withdrawal of 3.1 mgd, we can estimate the following:

Reservoir/Surface WTP = 3.1 mgd
RO WTP (max capacity) = 4.0 mgd
Peace River Purchase = 3.77 mgd
Total Supplied = 10.87 mgd

Based on this analysis, the City should be able to meet the future max day demand under the worst-case reservoir condition as long as you can operate the RO facility at 4.0 mgd during this time and can purchase at least 3.77 mgd from Peace River.

Please let me know if you'd like to schedule a brief call to discuss, or if/how you would like us to proceed in providing any feedback to SWFWMD.

Thanks,

Laura

Laura Baumberger, PE
Project Manager | Vice President
301 North Cattlemen Road, Suite 302 | Sarasota, FL 34232
P 941-371-9832 | **M** 941-400-2320
carollo.com



From: Dale Helms
To: Yonas Ghile; Ptara
Cc: Chris Zajac; Doug Leeper; Randy Smith; Lei Yang; Eric DeHaven
Subject: RE: Time-series data
Date: Friday, April 2, 2021 4:35:36 PM

[EXTERNAL SENDER] Use caution before opening.

Hi Yonas,

Yes, I can send both you and Patrick a copy of the current spreadsheet. It includes the predicted revised time series of flows at the Arcadia gage accounting for (after removing) potential upstream withdrawals. Let me review it and I'll plan to provide next week.

Best,
Dale

A. Dale Helms, PE
Senior Client Services Manager | Vice President
200 East Robinson Street, Suite 1400 | Orlando, FL 32801
P 407.377.2656 | **M** 407.247.2455
carollo.com

From: Yonas Ghile [mailto:Yonas.Ghile@swfwmd.state.fl.us]
Sent: Friday, April 2, 2021 4:21 PM
To: Dale Helms <dhelms@carollo.com>; Ptara <Ptara@intera.com>
Cc: Chris Zajac <Chris.Zajac@swfwmd.state.fl.us>; Doug Leeper <Doug.Leeper@swfwmd.state.fl.us>; Randy Smith <Randy.Smith@swfwmd.state.fl.us>; Lei Yang <Lei.Yang@swfwmd.state.fl.us>; Eric DeHaven <Eric.Dehaven@swfwmd.state.fl.us>
Subject: Time-series data

Hi Dale,

Can you provide Patrick a time series at the Arcadia Peace River station representing flows after the proposed PRWC withdrawals, as presented on Tuesday, are removed upstream? We would like a copy as well.

Happy Easter weekend!

Yonas Ghile, PhD, PH
Lead Hydrologist
Natural Systems & Restoration Bureau
Southwest Florida Water Management District
(352) 796-7211 Ext. 4488

Email: Yonas.Ghile@swfwmd.state.fl.us

From:	Yonas Ghile
To:	Dale Helms; Patrick Tara
Cc:	Chris Zajac; Doug Leeper; Randy Smith; Lei Yang; Eric DeHaven
Subject:	RE: Time-series data
Date:	Tuesday, April 6, 2021 12:00:23 PM

Thank you Dale!

Best,
Yonas

From: Dale Helms <dhelms@carollo.com>
Sent: Friday, April 2, 2021 4:35 PM
To: Yonas Ghile <Yonas.Ghile@swfwmd.state.fl.us>; Ptara <Ptara@intera.com>
Cc: Chris Zajac <Chris.Zajac@swfwmd.state.fl.us>; Doug Leeper <Doug.Leeper@swfwmd.state.fl.us>; Randy Smith <Randy.Smith@swfwmd.state.fl.us>; Lei Yang <Lei.Yang@swfwmd.state.fl.us>; Eric DeHaven <Eric.Dehaven@swfwmd.state.fl.us>
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200 East Robinson Street, Suite 1400 | Orlando, FL 32801
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carollo.com

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Sent: Friday, April 2, 2021 4:21 PM
To: Dale Helms <dhelms@carollo.com>; Ptara <Ptara@intera.com>
Cc: Chris Zajac <Chris.Zajac@swfwmd.state.fl.us>; Doug Leeper <Doug.Leeper@swfwmd.state.fl.us>; Randy Smith <Randy.Smith@swfwmd.state.fl.us>; Lei Yang <Lei.Yang@swfwmd.state.fl.us>; Eric DeHaven <Eric.Dehaven@swfwmd.state.fl.us>
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Yonas Ghile, PhD, PH
Lead Hydrologist
Natural Systems & Restoration Bureau
Southwest Florida Water Management District
(352) 796-7211 Ext. 4488
Email: Yonas.Ghile@swfwmd.state.fl.us

From:	Dale Helms
To:	Yonas Ghile; Patrick Tara; Dinges, Jon
Cc:	Stephen James; Mike Coates; Gary Hubbard; Mike Britt; Biehl, Tabitha; Eric DeHaven; Doug Leeper; Lei Yang; Chris Zajac; Randy Smith; Mary Thomas; Kathleen Gierok; Robert Beltran; Wiley, David
Subject:	RE: Peace River Coordination
Date:	Thursday, April 8, 2021 8:58:45 AM

[EXTERNAL SENDER] Use caution before opening.

Good morning,

As a follow up to our 3/30/21 meeting re surface water use permit coordination on the Peace River system, several folks requested a copy of the PRWC's water availability analysis tool. Please use the Carollo FTP link below to download a copy of the current spreadsheet (43 MB).

The analysis is structured consistent with the District's implementation approach for Peace River MFLs, by comparing the previous day's streamflow at a gaged location to the minimum flow/allowable withdrawal defined by MFLs and existing WUP conditions, then applying the most constraining criterion to a potential diversion.

Note that this is a draft analysis, which has not yet been finalized for submission in support of a future water use permit application. Please let me know of any questions.

Best,
Dale

A. Dale Helms, PE
Senior Client Services Manager | Vice President
200 East Robinson Street, Suite 1400 | Orlando, FL 32801
P 407.377.2656 | **M** 407.247.2455
carollo.com

Files attached to this message

Filename	Size	Checksum (SHA256)
PR_AvailabilityAnalysis_v11.0.xlsx	42.6 MB	383745cc8461f6bbd745a6a376438e5851868923dc5e86dd82568ef5376a0726

Please click on the following link to download the attachments: https://files.carollo.com/message/1F3yE2eiXZdDRI0oPSCFi3

This email or download link can be forwarded to anyone.

The attachments are available until: **Saturday, 8 May.**

Message ID: `1F3yE2eiXZdDRI0oPSCFi3`

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From: Mary Thomas
Sent: Thursday, April 1, 2021 12:56 PM
To: Eric DeHaven <Eric.Dehaven@swfwmd.state.fl.us>; Stephen James <stephenjames@prwcwater.org>; Mike Coates <mcoates@regionalwater.org>; Jim Guida <jguida@prowatersource.com>; Ptara <Ptara@intera.com>; Dale Helms <dhelms@carollo.com>; Randy Smith <Randy.Smith@swfwmd.state.fl.us>; Jennette Seachrist <Jennette.Seachrist@swfwmd.state.fl.us>; Chris Zajac <Chris.Zajac@swfwmd.state.fl.us>; Yonas Ghile

<Yonas.Ghile@swfwmd.state.fl.us>; Lei Yang <Lei.Yang@swfwmd.state.fl.us>; Jay Hoecker <Jay.Hoecker@swfwmd.state.fl.us>; John F. Ferguson <John.Ferguson@swfwmd.state.fl.us>; George A. Schlutermann <George.Schlutermann@swfwmd.state.fl.us>; Owen Thornberry <Owen.Thornberry@swfwmd.state.fl.us>; Darrin Herbst <Darrin.Herbst@swfwmd.state.fl.us>; April D. Breton <April.Breton@swfwmd.state.fl.us>; Cindy C. Rodriguez <Cindy.Rodriguez@swfwmd.state.fl.us>; Adrienne E. Vining <Adrienne.Vining@swfwmd.state.fl.us>
Cc: Doug Leeper <Doug.Leeper@swfwmd.state.fl.us>; Gary Hubbard <ghubbard@mywinterhaven.com>; Biehl, Tabitha <TabithaBiehl@polk-county.net>; Wiley, David <David.Wiley@wsp.com>; Michelle Hopkins <Michelle.Hopkins@swfwmd.state.fl.us>; Mike Britt <mbritt@mywinterhaven.com>; Thomas A. Cloud, Esquire <Thomas.Cloud@gray-robinson.com>; Kniss, Robert <Robert.Kniss@lakelandgov.net>; palmer.Davis@lakelandgov.net; Chris A. Tumminia <Chris.Tumminia@swfwmd.state.fl.us>; Bayhan, David <David.Bayhan@lakelandgov.net>; Edward de la Parte Jr. <EDelaparte@dgfirm.com>; Terri Holcomb <tholcomb@regionalwater.org>; Azzarella, Krystal <KrystalAzzarella@polk-county.net>; John Murphy <FJM@BosDun.com>; Drew Crawford (Drew@BosDun.com) <Drew@BosDun.com>
Subject: RE: Peace River Coordination

Sorry, folks. Sounds like there was an issue with that last email. Let's try this.

<< File: 20210330_Minutes-DRAFT.docx >> << File: 20210330_PRMRWSA.pdf >>

From: Mary Thomas
Sent: Thursday, April 1, 2021 9:54 AM
Subject: RE: Peace River Coordination

Good morning:

Attached are the draft notes we took during Tuesday's coordination meeting. Let us know if you have any questions or edits. Also attached are the slides presented.

Mary

-----Original Appointment-----
From: Eric DeHaven [mailto:Eric.Dehaven@swfwmd.state.fl.us]
Sent: Thursday, March 25, 2021 2:26 PM
To: Eric DeHaven; Mary Thomas; Stephen James; Mike Coates; Jim Guida; Ptara; Dale Helms; Randy Smith; Jennette Seachrist; Chris Zajac; Yonas Ghile; Lei Yang; Jay Hoecker; John F. Ferguson; George A. Schlutermann; Owen Thornberry; Darrin Herbst; April D. Breton; Cindy C. Rodriguez; Adrienne E. Vining
Cc: Doug Leeper; Gary Hubbard; Biehl, Tabitha; Wiley, David; Michelle Hopkins; Mike Britt; Thomas A. Cloud, Esquire; Kniss, Robert; palmer.Davis@lakelandgov.net; Chris A. Tumminia; Bayhan, David; Edward de la Parte Jr.; Terri Holcomb; Azzarella, Krystal; John Murphy; Drew Crawford (Drew@BosDun.com)
Subject: Peace River Coordination
When: Tuesday, March 30, 2021 3:00 PM-5:00 PM (UTC-05:00) Eastern Time (US & Canada).
Where: Microsoft Teams Meeting

As this meeting has expanded in size, I have resent this invite to all who have accepted with a call-in option now included (see below).
This will be a remote TEAMS meeting. The purpose of the meeting is to continue coordination efforts on water supply availability associated with the Peace River. The agenda is focused on the PRWC providing information on plans for water use on Peace Creek/Peace River.
Please forward to other necessary staff.
Thanks!
Eric DeHaven

Microsoft Teams meeting

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From: Dale Helms
To: Yonas Ghile; Patrick Tara; Dinges, Jon
Cc: Stephen James; Mike Coates; Gary Hubbard; Mike Britt; Biehl, Tabitha; Eric DeHaven; Doug Leeper; Lei Yang; Chris Zajac; Randy Smith; Mary Thomas; Kathleen Gierok; Robert Beltran; Wiley, David
Subject: RE: Peace River Coordination
Date: Thursday, April 8, 2021 3:17:35 PM

[EXTERNAL SENDER] Use caution before opening.

I just received some additional 2020 flow data from City of Winter Haven, which I've added to the water availability tool for completeness. It did not affect the analysis results. Please use the following FTP link to download an updated version of the spreadsheet (v11.1).

adh

Files attached to this message

Filename	Size	Checksum (SHA256)
PR_AvailabilityAnalysis_v11.1.xlsx	43.2 MB	0b020ece8cabe0fded575c8d60933c42e22d357e329334ffa3f1d6de484a7fae

Please click on the following link to download the attachments: https://files.carollo.com/message/tzIMVQjzRY9melTNzpMmV5

This email or download link can be forwarded to anyone.

The attachments are available until: **Saturday, 8 May.**

Message ID: tzIMVQjzRY9melTNzpMmV5

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From: Dale Helms
Sent: Thursday, April 8, 2021 8:58 AM
To: Yonas Ghile <Yonas.Ghile@swfwmd.state.fl.us>; Ptara <Ptara@intera.com>; 'Dinges, Jon' <DingesJ@bv.com>
Cc: Stephen James <stephenjames@prwcwater.org>; Mike Coates <mcoates@regionalwater.org>; Gary Hubbard <ghubbard@mywinterhaven.com>; Mike Britt <mbritt@mywinterhaven.com>; Biehl, Tabitha <TabithaBiehl@polk-county.net>; Eric DeHaven <Eric.Dehaven@swfwmd.state.fl.us>; Doug Leeper <Doug.Leeper@swfwmd.state.fl.us>; Lei Yang <Lei.Yang@swfwmd.state.fl.us>; Chris Zajac <Chris.Zajac@swfwmd.state.fl.us>; Randy Smith <Randy.Smith@swfwmd.state.fl.us>; Mary Thomas <mthomas@carollo.com>; Kathleen Gierok <Kathleen.Gierok@wright-pierce.com>; Robert Beltran <RBeltran@hydrosc.com>; Wiley, David <David.Wiley@wsp.com>
Subject: RE: Peace River Coordination

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carollo.com

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Subject: RE: Peace River Coordination

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Sent: Thursday, April 1, 2021 9:54 AM
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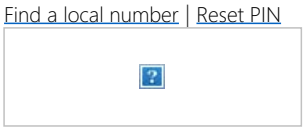
Please forward to other necessary staff.

Thanks!

Eric DeHaven

Microsoft Teams meeting

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941-377-3722 or 1-800-320-3503

Tampa Office
7601 US Highway 301 North
Tampa, FL 33637-6759
813-985-7481 or 1-800-836-0797

MEETING NOTICE

AGENDA
Environmental Advisory Committee Meeting

TUESDAY, APRIL 13, 2021

10:00 AM

Teams Meeting

All meetings are open to the public.

1. Call to Order and Introductions – Jennifer Hecker, Coastal & Heartland NEP
2. Additions and Deletions to the Agenda – Virginia Singer, Board and Executive Services Manager
3. Approval of the January 12, 2021 Meeting Minutes
4. Public Comment
5. Lower Shell Creek MFLs – Yonas Ghile, Lead Hydrologist
6. Recycled Water: Public Sentiment – Michele Sager, Lead Communications Coordinator
7. Dover/Plant City WUCA MFL Status Update – Tamera McBride, P.G., Resource Evaluation Manager
8. 2021 Biennial Surplus Lands Assessment – Ellen Morrison, Land Resources Bureau Chief
9. 2021 Legislative Updates – Joel Brown, Senior Government Affairs Regional Manager
10. Development of agenda topics for the next Environmental Advisory Committee meeting at 10:00 a.m. on Tuesday, July 13, 2021.
11. Announcements and Other Business
12. Adjournment

If you have any questions concerning this meeting, please call 1-800-423-1476 or (352) 796-7211, extension 4662.

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MINUTES OF THE MEETING

ENVIRONMENTAL ADVISORY COMMITTEE
SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

BROOKSVILLE, FLORIDA APRIL 13, 2021

Due to the COVID-19 virus, this meeting was held through electronic media to reduce public gatherings and practice social distancing.

The Environmental Advisory Committee (EAC) of the Southwest Florida Water Management District convened for a regular meeting at 10:00 a.m., April 13, 2021 via remote session from the Brooksville Service Office, 2379 Broad Street, Florida 34604.

Committee Members Present via Teams
Jennifer Hecker, Coastal and Heartland National Estuary Partnership
Allain Hale, Environmental Confederation of Southwest Florida
Gordon Colvin, Save the Homosassa River Alliance
Sid Flannery, Sierra Club Tampa Bay
Alan Bailey, Florida Trail Association
Dan Savercool, St. Petersburg Audubon Society
Dave Tomasko, Sarasota Bay Estuary Program
Mike Burton, Manatee Chamber of Commerce
Dwayne Carlton, Ocala/Marion County Chamber & Economic Partnership
Ed Sherwood, Tampa Bay Estuary Program

Liaison
John Mitten

Recording Secretary
Lauren Vossler

Staff Members Present
Virginia Singer, Facilitator
Michael Molligan
Scott Letasi
Doug Koop
JP Marchand
Robin Grantham
Ross Morton
Mandi Rice
Robyn Felix
Brain Starford
Melissa Gulvin
Adrienne Vining
Eric DeHaven
Chris Anastasiou
Randy Smith
Tana Mason
Mohammed Hersi
Michelle Hopkins
Joel Brown
Ellen Morrison
Tamera McBride
Robert Peterson
Yonas Ghile
XinJian Chen
Chris Zajac
Kristina Deak
Doug Leeper

Approved summaries from previous meetings can be found on the District's website at WaterMatters.org. The numbers preceding the items below correspond to the order of presentation.

1. **Call to Order and Introductions**
   Ms. Jennifer Hecker called the meeting to order and called role.

2. **Additions and Deletions to the Agenda**
   None

3. **Approval of the January 12, 2021 Meeting Summary**
   The committee unanimously approved the January 12, 2021 meeting minutes.

4. Public Comment

None

5. Lower Shell Creek MFLs

Mr. Yonas Ghile, Lead Hydrologist, provided a presentation on the recommended Minimum Flows (MFLs) for Lower Shell Creek. He noted that MFLs development is a statutory requirement and explained that an MFL is defined as a limit at which further withdrawals would be significantly harmful to the water resources or ecology of the area. Mr. Ghile indicated the Lower Shell Creek and Lower Peace River were modeled together as one system to best characterize hydrologic processes and the interactions between the two rivers and Charlotte Harbor.

Recommended minimum flows for Lower Shell Creek are based on maintaining 85 percent of the two practical salinity units or less salinity volume. The recommended minimum flows protect environmental values identified for consideration when establishing minimum flows. Status assessments conducted using the best available information indicate the recommended minimum flows for Lower Shell Creek are being met and are also expected to be met over the next 20 years. Development of a recovery strategy or prevention strategy is, therefore, not required.

Mr. Flannery asked if the Shell Creek Treatment Reverse Osmosis Plant is currently operating. Mr. Ghile responded in the affirmative. Mr. Flannery asked if the pipeline between the Peace River facility and the City of Punta Garda at Shell Creek has been completed and if it will transmit finished water or raw water. Mr. Marchand stated the pipeline is operational and is transmitting finished water.

Mr. Flannery inquired about managing withdrawals from Shell Creek based on the minimum flows. Mr. Ghile explained withdrawals will be managed daily in accordance with water use permit conditions developed to ensure compliance with the minimum flows.

Mr. Colvin asked if the significant harm determination comes with an accompanied characterization of the uncertainty associated with the recommended significant harm threshold. Mr. Leeper explained that uncertainly in minimum flow analyses is acknowledged and characterized, when possible.

Ms. Hecker asked if climate change and saltwater intrusion factored into the analysis. Mr. Ghile responded those factors were considered through assessment of potential effects associated with various sea level rise projections.

6. Recycled Water: Public Sentiment

Ms. Michele Sager, Lead Communications Coordinator, provided a presentation on research that was conducted based on public perception regarding recycled water, reclaimed water, and potable reuse. She discussed DEP funding a statewide survey to gather a baseline of citizens perceptions about reclaimed water. This online survey was conducted statewide during March 2020, and approximately 1,980 citizens responded. Ms. Sager stated that 75% of respondents were familiar with the concept of reclaimed water. She mentioned respondents were more likely to agree with using reclaimed and potable reuse water for personal uses rather than environmental uses. Ms. Sager stated respondents were 65 percent more supportive of using indirect and direct potable reuse water in their community for all household purposes.

Mr. Tomasko mentioned being aware of the potential in some locations for an over application of nutrients from reclaimed water.

Ms. Hecker inquired about the objective of the campaign and if it was to educate the public, and if these investments to increase treatment will allow the start of the water being used for potable uses. Ms. Sager responded in the affirmative.

7. Dover/Plant City WUCA MFL Status Update

Ms. Tamara McBride, P.G., Resource Projects Manager, provided a status update regarding the Dover/Plant City Water Use Caution Area/Minimum Flows and Levels (DPCWUCA/MFLs). She provided background information concerning the establishment of the DPCWUCA. Ms. McBride explained it was created after an 11-day freeze event in January 2010, resulting in more than 16 times the average amount of groundwater withdrawals. She explained the two objectives of the recovery strategy were: (1) maintain a minimum aquifer level and (2) reduce withdrawals for cold protection in the January 2010 event by 20 percent. She noted that while the first objective was met, the second objective was not. As a result, a reassessment of the recovery strategy was required and recently completed. Ms. McBride discussed key trends reviewed during the reassessment, which included land use urbanization, decreased agricultural water use, improved groundwater levels, and decreased temperatures and number of cold weather days.

Ms. McBride stated that the principal conclusions of the reassessment were that the recovery strategy was met, and the District should repeal the recovery strategy, and maintain the water use caution area.

Ms. McBride stated the next step will be to share technical evaluation with stakeholders, seek input on results, keep the current rules in place but update them to remove the recovery strategy and take proactive steps if future trend changes occur.

Mr. Sherwood asked how much of the five million gallons per day (MGD) is being replaced by urbanization in the watershed. Ms. McBride explained she can get an exact number to Mr. Sherwood after the meeting. However, urban land use will not be using the cold protection quantities which is the impetus for this water use caution area.

Mr. Sherwood asked if additional houses would be using ground water and well water in the future and was there no cap of the maximum use that was experienced during the 2010 event. Ms. McBride responded the District prepares regional water supply planning to look at future needs and the MFLs that are put into place to protect environmentally sensitive areas.

Ms. Hecker asked as land conversions occur, potentially putting more scrutiny on the designation to reduce the permitted amount as the lands convert from agriculture to residential development. Ms. McBride explained one of the reasons the District is proposing to keep the water use caution area is to maintain the regulatory restrictions that have been put in place for the cold protection uses. Mr. Darrin Herbst explained each new application is re-reviewed and highly dependent on the demand. There is no guarantee the applicant would get the amount previously permitted.

8. 2021 Biennial Surplus Land Assessment

Ms. Ellen Morrison, Land Resources Bureau Chief, provided a presentation regarding the preliminary results of the surplus lands assessment and feedback regarding parcels proposed for surplus. She mentioned when the District purchases lands, the parcels may be declared surplus at the time of acquisition if they are determined not necessary for conservation or other District needs. She provided a detailed summary of surplus lands and compensation received.

Ms. Morrison discussed the review criteria used to evaluate lands for surplus. They included contributing to four areas of responsibility, maintaining public access, cultural resources, no net loss of hunting lands, protection of conservation corridors, acquisition and land use agreements, conservation conserve easements and management difficulties. She mentioned Lake Panasoffkee and the Tampa Bypass as parcels identified for surplus consideration.

Ms. Hecker asked if the Lake Panasoffkee and Tampa Bypass Canal total the 3,520 acres that are being reviewed for potential surplus. Ms. Morrison responded the 3,520 acres were a cumulative total from previous surplus assessments accomplished to date.

Mr. Flannery asked to define the District's four areas of responsibility. Ms. Morrison responded they are water supply, water quality, flood control and natural systems.

Mr. Tomasko asked if fishing recreationally was taken into consideration when reviewing the criteria. Ms. Morrison replied the impact to public and recreational access is considered. However, the no net hunting laws are statutorily mandated and have to be included in the analysis.

9. 2021 Legislative Update

Mr. Joel Brown, Senior Government Affairs Regional Manager, presented an update of the 2021 legislative session. He provided a calendar of the 2021 legislative session, outlined funding requests, current senate and house chairs, and environmental bills that have been filed.

Mr. Brown specifically addressed, SB952, SB64 and SB62. He stated District priorities that include Senate confirmation of Governing Board members and the monitoring of legislation with potential policy or fiscal impact to the District.

Mr. Flannery asked if discharges of treated domestic wastewater that could potentially have a beneficial use must be eliminated from all surface waters or are there exemptions. Mr. Brown explained there are exemptions and provided a few of the highlighted exemptions.

Discussion ensued based on eliminating discharge of treated wastewater at the Hooker's Point of Tampa Bay.

10. Open Discussion and Development of agenda topics for the next Environmental Advisory Committee meeting on July 13, 2021 at 10:00 am.

Mr. Alan Bailey requested a presentation from the District regarding the Florida-Friendly Landscaping program and any conflicts of introducing it into local government codes or homeowner association rules.

Mr. Allan Hail requested a presentation addressing the success rate of testing nitrogen in reuse water.

11. Announcements and Other Business

Ms. Hecker announced the Coastal and Heartland Nation Estuary Program (CHNEP) is hosting a Southwest Florida Climate Summit which will be held as a free virtual event on May 6, 2021.

Mr. Ed Sherwood stated the Tampa Bay Estuary Program has a website that provides a full scope of environmental data that is being collected for the Piney Point area site of discharge. He provided the following link https://tbep.org/. He stated this data includes water quality information from the Florida Department of Environmental Protection (FDEP) and county agencies.

12. Adjournment

The meeting adjourned at 12:30 p.m.

Recommended Minimum Flows for Lower Shell Creek

Environmental Advisory Committee

Yonas Ghile, XinJian Chen, Douglas Leeper, Chris Anastasiou and Kristina Deak
Natural Systems & Restoration Bureau
April 13, 2021

Planned Schedule

Major Activities	Schedule
Peer review of minimum flows report	March - June 2020
Stakeholder outreach	March 2020 - Present
Presentation to Environmental Advisory Committee	April 13, 2021
Presentation to Public Supply Advisory Committee	May 11, 2021
Presentation to CHNEP	Summer 2021
Public workshop	Summer 2021
Presentation to Governing Board – Final minimum flows report and rule	Fall 2021

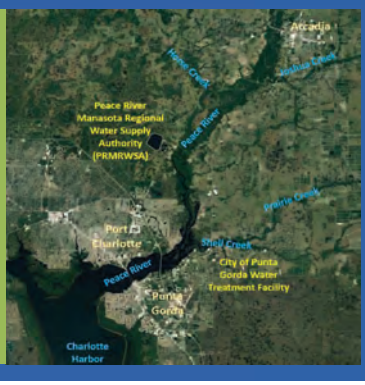
Minimum Flows

- The **minimum flow** for a given watercourse is the limit at which further withdrawals would be significantly harmful to the water resources or ecology of the area.

– Section 373.042, Florida Statutes

Lower Peace River and Lower Shell Creek

- Lower Peace River and Lower Shell Creek modeled together as one system
- Reevaluated Lower Peace River MFLs approved by Governing Board in December 2020 and became effective on April 12, 2021
- Minimum flows establishment for Lower Shell Creek scheduled for 2021

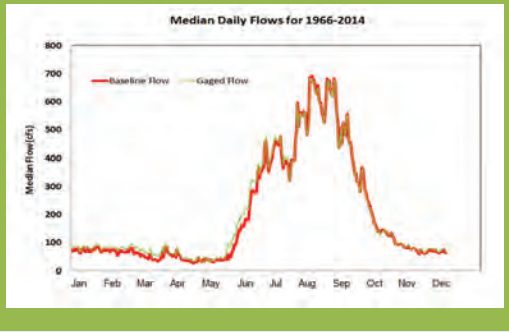


Lower Shell Creek

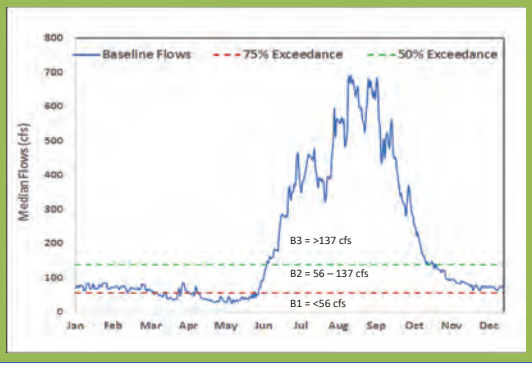


Developed Baseline Flows

- Developed baseline flows (flows with no withdrawal effects) for the period from 1966 through 2014



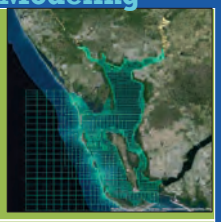
Developed Flow-Based Blocks



Enhanced Hydrodynamic Modeling

Current model (Chen 2020)

- Unstructured 3D hydrodynamic model
- Includes entire Charlotte Harbor
- New LiDAR and bathymetry data
- 21-month calibration/validation period
- 7.7-year simulation period (Jan 2007 - Aug 2014)



Previously used model (Chen 2010)

- Structured 3D hydrodynamic model
- Limited to Upper Charlotte Harbor
- 13-month calibration/validation period
- 3-year simulation period (2000 - 2002)



Enhanced Ecological Criteria and Considerations

Current Ecological Criteria and Considerations	Previous (2010 Evaluation) Ecological Criteria and Considerations
▪ Salinity-based habitats (≤2, ≤5, ≤10, ≤15, ≤20 psu) ▪ Habitats for 8 estuarine dependent taxa ▪ Water quality (dissolved oxygen, nutrients, chlorophyll, color)	▪ Salinity-based habitats (≤2, ≤5, ≤10, ≤15, ≤20 psu)

- **≤ 2 psu salinity volume** was the metric most sensitive to flow reductions
- Minimum flows developed based on preserving 85% of **≤2 psu salinity volume**

Recommended Minimum Flows for Lower Shell Creek

Flow-based Blocks	If Baseline Flow on Previous Day is:	Minimum Flow is:	Maximum Flow Reduction is
1	≤ 56 cfs	87% of flow	13% of flow
2	56 cfs to 137 cfs	77% of flow	23% of flow
3	>137 cfs	60% of flow	40% of flow

Minimum Flows Status Assessment: Flows

Initial Assessment

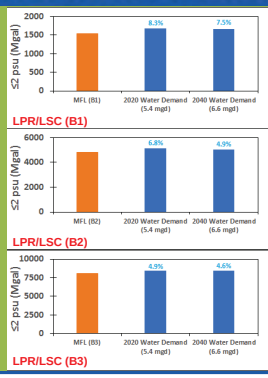
- Based on gaged flows (existing flows)
- Projected 2040 water demand = 6.3 mgd
- Alternative water supplies (reverse osmosis or Peace River pipeline interconnect) not considered in the analyses
- Minimum flows not met
- Recovery/prevention strategy required

Updated Assessment

- Based on baseline flows (corrected for Agricultural flows)
- Projected 2040 water demand = 6.6 mgd
- Use of reverse osmosis/Peace River pipeline interconnect considered in the analyses
  - 3.5 mgd in Block 1
  - 2 mgd in Blocks 2 and 3
- Minimum flows met
- Additional recovery/prevention strategy not required

Minimum Flows Status Assessment: Habitats

- Use of alternative water supplies (RO & Peace pipeline interconnect)
  - 3.5 mgd in Block 1
  - 2 mgd in Blocks 2 and 3
- Water demand projections
  - 2020 = 5.4 mgd
  - 2040 = 6.6 mgd



SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

Recommended Minimum Flows Summary

- Recommended minimum flows are based on maintaining 85% of the 2 psu or less salinity volume
- Recommended minimum flows are protective of all environmental values identified for consideration when establishing minimum flows
- Recommended Lower Shell Creek minimum flows are currently met and projected to be met during the next 20-year planning period
  - District coordinating with the City of Punta Gorda on water use permit conditions to meet the recommended flows
  - No additional recovery/prevention projects are required

SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

Next Steps and Contact Information

- Presentation to CHNEP– Summer 2021
- Public workshop – Summer 2021
- Presentation to Governing Board – Fall 2021
- Minimum flows report and appendices:
  https://www.swfwmd.state.fl.us/projects/mfl/documents-and-reports
- Contact information:
  Yonas Ghile
  2379 Broad Street
  Brooksville, FL 34604
  (352) 796-7211, Ext. 4488
  Yonas.Ghile@swfwmd.state.fl.us

Southwest Florida Water Management District

2379 Broad Street, Brooksville, Florida 34604-6899
(352) 796-7211 or 1-800-423-1476 (FL only)
WaterMatters.org

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Bartow Office
170 Century Boulevard
Bartow, FL 33830-7700
863-534-1448 or 1-800-492-7862

Sarasota Office
78 Sarasota Center Boulevard
Sarasota, FL 34240-9711
941-377-3722 or 1-800-320-3503

Tampa Office
7601 US Highway 301 North
Tampa, FL 33637-6759
813-985-7481 or 1-800-836-0797

MEETING NOTICE

AGENDA
Public Supply
Advisory Committee Meeting

TUESDAY, MAY 11, 2021
1:00 PM

Teams Meeting

All meetings are open to the public.

1. Call to Order and Introductions – Committee Chair, Jennifer Desrosiers, City of North Port Utilities
2. Additions and Deletions to the Agenda – Virginia Singer, Board and Executive Services Manager
3. Approval of the February 9, 2021 Meeting Minutes
4. Public Comments
5. ePermitting Replacement Project Update – Eryn Worthington, Project Manager
6. ERP Stormwater Rulemaking Update – Dave Kramer, Environmental Resource Permit Bureau Chief
7. Dover/Plant City WUCA MFL Status Update – Tamera McBride, P.G., Resource Evaluation Manager
8. Lower Shell Creek MFL – Yonas Ghile, Lead Hydrologist
9. 2021 Legislative Update – Joel Brown, Senior Government Affairs Regional Manager
10. Development of agenda topics for the next Public Supply Advisory Committee meeting at 1:00 p.m. on Tuesday, August 10, 2021.
11. Announcements and Other Business
12. Adjournment

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SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

Recommended Minimum Flows for Lower Shell Creek

Public Supply Advisory Committee

Natural Systems & Restoration Bureau
August 26, 2021

1

SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

Planned Schedule

Major Activities	Schedule
Peer review of minimum flows report	March - June 2020
Stakeholder outreach	March 2020 - Present
Presentation to Environmental Advisory Committee	April 13, 2021
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2

2

SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

Minimum Flows

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SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

Lower Peace River and Lower Shell Creek

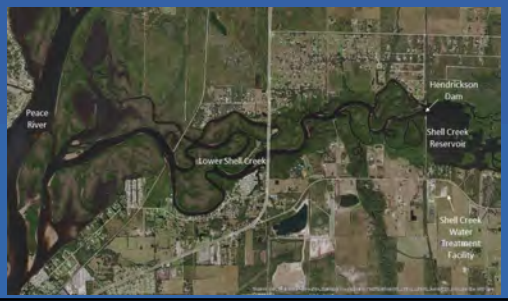
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SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

Lower Shell Creek

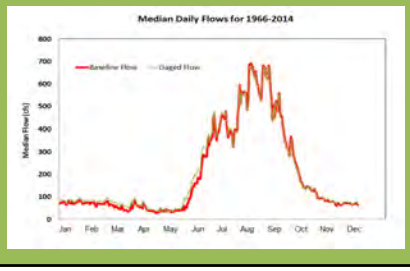


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SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

Developed Baseline Flows

- Developed baseline flows (flows with no withdrawal effects) for the period from 1966 through 2014



6

SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

Developed Flow-Based Blocks



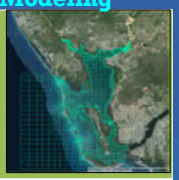
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SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

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SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

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SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

Minimum Flows Status Assessment

Initial Assessment	Updated Assessment

▪ Based on gaged flows (existing flows)
▪ Projected 2040 water demand = 6.3 mgd
▪ Alternative water supplies (reverse osmosis or Peace River pipeline interconnect) not considered in the analyses
▪ Minimum flows not met
▪ Recovery/prevention strategy required
	▪ Based on baseline flows (corrected for Agricultural flows)
	▪ Projected 2040 water demand = 6.6 mgd
	▪ Use of reverse osmosis/Peace River pipeline interconnect considered in the analyses
	  ▪ 3.5 mgd in Block 1
	  ▪ 2 mgd in Blocks 2 and 3
	▪ Minimum flows met
	▪ Additional recovery/prevention strategy not required

11

SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

Recommended Minimum Flows Summary

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  Yonas.Ghile@swfwmd.state.fl.us

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Thank you!

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Agricultural Flow Estimates

- Monthly agricultural flows were estimated by computing water and chloride mass balance equations at the reservoir

Water mass balance $V_G + V_S + V_P = V_R - V_{R\text{-}1} + V_D + V_W + V_E$

Chloride mass balance $C_R V_R - C_{R\text{-}1} V_{R\text{-}1} = C_S V_S + C_G V_G - C_R (V_W + V_D)$

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Ag. Flows (mgd)	8.5	11.0	14.7	8.7	6.8	27.0	10.1	0.0	0.0	0.7	5.3	6.0

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Peer Review Panel

- MFLs report well written and comprehensive
- Use of flow-based blocks supported
- Use of 15% threshold for "significant harm" supported
- Enhanced hydrodynamic model supported
- Enhanced ecological criteria supported
- Continued coordination with SFWMD
- Sea level rise analysis supported

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PUBLIC SUPPLY ADVISORY COMMITTEE MEETING
TUESDAY, MAY 11, 2021 – 1:00 PM
2379 BROAD STREET, BROOKSVILLE, FLORIDA 34604

MINUTES

Committee Members Present
Jennifer Desrosiers, City of North Port Utilities
Mark Law, Bay Laurel Center Community Dev.
Debra Burden, Citrus County Water Resources
Alys Brockway, Hernando County Utilities
Ruffin Gray, City of Lakeland Utilities
Steve Adams, Punta Gorda Utilities
Jim Kramer, City of St. Petersburg Utilities
David Glicksberg, Hillsborough County Utilities
Olga Wolanin, Manatee County Utilities
Charles Cullen, Pasco County Utilities
David Adams, Pinellas County Utilities
Brian Fagan, Sarasota County Utilities
Warren Hogg, Tampa Bay Water
Trey Arnett, The Villages
Suzannah Folsom, WRWSA

Governing Board Liaison
Ed Armstrong

Staff Members
Michael Molligan
Mandi Rice
Robyn Felix
Randy Emberg
Eryn Worthington
Dave Kramer
Tamera McBride
Yonas Ghile
Doug Leeper
Robert Peterson
Kristina Deak
JP Marchand
Ryan Pearson
Chris Zajac
Elizabeth Fernandez
Randy Smith
April Breton
Michael Bray
Megan Albrecht
Michelle Hopkins
Eric DeHaven
Adrienne Vining

Board Administrative Support
Virginia Singer
Kelly Page

1. Call to Order and Introductions

The Public Supply Advisory Committee of the Southwest Florida Water Management District (District) met for its regular meeting at 1:00 p.m., on May 11, 2021, via Microsoft Teams.

Chair Jennifer Desrosiers called the meeting to order, and attendance was called.

Governing Board Liaison Ed Armstrong welcomed the committee and discussed the importance of cyber security around utility infrastructure.

2. Additions and Deletions to the Agenda

None

3. **Approval of February 9, 2021 Meeting Minutes**
   A motion was made for approval of February 9, 2021 minutes. The motion was seconded and passed unanimously.

4. **Public Comments**
   None

5. **ePermitting Replacement Project Update**
   Mrs. Eryn Worthington, project manager, provided an update on the ePermitting replacement project. She explained the new system will be mobile-friendly and easier to search and navigate. Ms. Worthington stated the Environmental Resource Permitting (ERP) department will go live by the end of 2021, followed by compliance in 2022, then water use and well construction permitting. Ms. Worthington provided a walkthrough of the registration and permit application process.

   Mr. David Glicksberg asked whether the District will send out a notice when registration becomes available, and Ms. Worthington replied in the affirmative.

   Ms. Desrosiers asked about the timeframe for completion of this project. Ms. Worthington confirmed all will be complete within the next three and a half years.

6. **ERP Stormwater Rulemaking Update**
   Mr. Dave Kramer, Environmental Resource Permit bureau chief, explained the passing of Senate Bill 712 (Clean Waters Act) requires improvements in stormwater regulations across the state. As a result, the Technical Advisory Committee (TAC) was formed to develop a consensus and make recommendations for improved regulation to the Florida Department of Environmental Protection (FDEP) and the water management districts.

   Mr. Kramer said the rulemaking has not actually begun; TAC is currently trying to recognize ways to identify stormwater solutions. He explained the end goal is to have consistent water quality design criteria among all water management districts and to reduce nutrient-related stormwater pollution. Mr. Kramer said anyone is welcome to provide input to the TAC and offered to assist those wanting to comment.

   Ms. Desrosiers asked whether there has been any discussion at the state level about how stormwater would be best implemented in communities that are pre-platted. Mr. Kramer said these urbanized environments have been identified and fall under a conceptual permit. He explained the bill is not focusing on this level; SB 712 is aimed at identifying where the ERP program can capture projects that require a permit and the stormwater-related infrastructure and design that goes into meeting the permit requirements.

7. **Dover/Plant City WUCA MFL Status Update**
   Ms. Tamera McBride, Resource Evaluation manager, explained the background of the Dover Plant City Water Use Caution Area (WUCA), its recovery strategy and current evaluation on the recovery strategy. She explained the two objectives of the recovery strategy are to maintain a minimum aquifer level and reduce withdrawals for cold protection in the January 2010 event by 20 percent. She noted that while the first objective was met, the second objective was not. As a result, a reassessment of the recovery strategy was required and recently completed.

   Ms. McBride discussed key trends reviewed during the reassessment, which included land use urbanization, decreased agricultural water use, improved groundwater levels, increased temperatures and decreased number of cold weather days. Ms. McBride stated that the principal conclusions of the reassessment were that the recovery strategy was met, and the

District should repeal the recovery strategy, and maintain the water use caution area. She explained the next step will be to share technical evaluation with stakeholders, seek input on results, present results to the Governing Board, keep the current rules in place but update them to remove the recovery strategy and take proactive steps if future trend changes occur.

Ms. Desrosiers asked whether phosphate mining might have an impact in this area. Mr. Robert Peterson explained reclaimed mining areas were located in the very southern portion of the WUCA but are out of production. Additionally, cold protection withdrawals are a separate issue.

8. **Lower Shell Creek MFL**

Mr. Yonas Ghile, lead hydrologist, provided a presentation on the recommended Minimum Flows (MFLs) for Lower Shell Creek. Mr. Ghile explained Lower Shell Creek and Lower Peace River were modeled together as one system. He stated the recommended minimum flows for Shell Creek are based on maintaining 85 percent of the two practical salinity units or less salinity volume. Status assessments indicate the recommended minimum flows for the Lower Shell Creek are being met, therefore a recovery strategy is not required.

Ms. Desrosiers asked why baseline flows establishment stopped at 2014. Mr. Ghile explained the hydrodynamic model ran 2007 to 2014, but for the MFLs status assessment the baseline flow record was extended to 2018.

Ms. Desrosiers asked what Punta Gorda's current demands are. Mr. Ghile said their currently demand is 5.4 million gallons per day (mgd) and is projected to be 6.6 mgd by 2040.

9. **Development of agenda topics for the next Public Supply Advisory Committee meeting scheduled for Tuesday, August 10, 2021 at 1:00 p.m.**

Ms. Debra Burden requested an update on how the legislative session finished and what was ultimately signed; Ms. Desrosiers requested a presentation on SCADA security; Ms. Desrosiers also asked for District feedback on the Senate Bill 64 for alternative supply for reclaimed water; Ms. Folsom requested a topic on the process for determining the quantities available for public supply from a river after the MFL has been set.

10. **Announcements and Other Business**

None

11. **Adjournment**

Meeting adjourned at 2:38 p.m.

From: Chris Zajac
To: Laura Baumberger
Cc: Victoria Steinnecker; Sarah Burns; Doug Leeper; Yonas Ghile
Subject: RE: Lower Shell Creek MFL
Date: Thursday, April 29, 2021 3:42:43 PM
Attachments: image001.png
image002.png

Laura,

Great to hear from you! I think we can squeeze it a meeting tomorrow at 11:00 am. I'll send a meeting invite next.

Chris Zajac
Environmental Flows and Levels Manager
Natural Systems and Restoration Bureau
2379 Broad Street
Brooksville, FL 34604
(352) 796-7211, Ext. 4413
(352) 586-3776
Chris.Zajac@WaterMatters.org

From: Laura Baumberger <LBaumberger@carollo.com>
Sent: Thursday, April 29, 2021 3:20 PM
To: Chris Zajac <Chris.Zajac@swfwmd.state.fl.us>
Cc: Victoria Steinnecker <vsteinnecker@carollo.com>; Sarah Burns <sburns@carollo.com>
Subject: RE: Lower Shell Creek MFL

[EXTERNAL SENDER] Use caution before opening.
Chris,

Might you have some time tomorrow or Monday to discuss a few questions we have on how the MFL would be implemented? In particular, we have questions about the two slides shown below.

Reservoir Withdrawals Based on Adjusted Flows

If Adjusted Flow on Previous Day Is:		Reservoir Withdrawal Based on MFLs	
≤ 56 cfs (36.2 mgd)	Jan	3.36	4.22
	Feb	3.43	4.22
	Mar	3.96	4.22
	Apr	4.22	4.22
	May	3.63	3.63
	Jun	2.31	3.10
	Jul	1.65	3.10
	Aug	0.92	3.10
	Sep	2.04	3.10
	Oct	3.30	3.10
	Nov	4.42	4.42
	Dec	3.83	4.42
>56 cfs (36.2 mgd) and ≤137cfs (88.5 mgd)		23% of Inflow (8.4 - 26.6 mgd)	
> 137 cfs (88.5 mgd)		40% of Inflow (35.4 - 2636 mgd)	

Month	Peaking Factors	2040 Demand
Jan	1.04	6.86
Feb	1.05	6.93
Mar	1.13	7.46
Apr	1.17	7.72
May	1.08	7.13
Jun	0.88	5.81
Jul	0.78	5.15
Aug	0.67	4.42
Sep	0.84	5.54
Oct	1.03	6.80
Nov	1.20	7.92
Dec	1.11	7.33
Average	1.00	6.59

Implementation of MFLs

If Adjusted Flow on Previous Day Is:		Reservoir Withdrawal Based on MFLs
≤ 56 cfs (36.2 mgd)	Jan - Apr	Maximum 4.22 mgd
	May	Maximum 3.63 mgd
	Jun - Oct	Maximum 3.10 mgd
	Nov - Dec	Maximum 4.42 mgd
>56 cfs (36.2 mgd) and ≤137 cfs (88.5 mgd)		23% of Inflow (8.4 - 26.6 mgd)
>137 cfs (88.5 mgd)		40% of Inflow (35.4 - 2636 mgd)



Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Ag. Flows (mgd)	8.5	11.0	14.7	8.7	6.8	27.0	10.1	0.0	0.0	0.7	5.3	6.0

Date	Res. Vol (mg)	Outflow (mgd)	Withdrawal (mgd)	Inflow (mgd)	Adjusted Inflow (mgd)	Block
8/8/1972	860.0	320.0	5.0	325.0	325.0	3
8/9/1972	860.0		?			

Date	Res. Vol (mg)	Outflow (mgd)	Withdrawal (mgd)	Inflow (mgd)	Adjusted Inflow (mgd)	Block
6/15/1972	800.0	0.0	3.0	43.0	16.0	1
6/16/1972	840.0		≤3.1			

Please feel free to loop in whoever else from the District should attend, and let me know if any of the times below could work:

- April 30th between 10am and 4pm
- May 3rd between 11:30am and 1pm, or 3-4pm

I think 30 minutes will be sufficient.

If you need additional date options, please let me know and we can schedule this a bit further out.

Thanks,
Laura

Laura Baumberger, PE
Project Manager | Vice President
301 North Cattlemen Road, Suite 302 | Sarasota, FL 34232
P 941-371-9832 | **M** 941-400-2320
carollo.com

From: Chris Zajac <Chris.Zajac@swfwmd.state.fl.us>
Sent: Friday, April 16, 2021 3:06 PM
To: Steve Adams <SAdams@cityofpuntagordafl.com>
Cc: Chuck Pavlos <CPavlos@cityofpuntagordafl.com>; Laura Baumberger <LBaumberger@carollo.com>; Randy Smith <Randy.Smith@swfwmd.state.fl.us>; Yonas Ghile <Yonas.Ghile@swfwmd.state.fl.us>; Doug Leeper <Doug.Leeper@swfwmd.state.fl.us>; Kristina Deak <Kristina.Deak@swfwmd.state.fl.us>; Xinjian Chen <Xinjian.Chen@swfwmd.state.fl.us>
Subject: Lower Shell Creek MFL

Steve,

I hope things are going well in Punta Gorda.

My team presented the Lower Shell Creek proposed minimum flows to the Environmental Advisory Committee earlier this week. The presentation was well received by the committee and we received several positive comments from individual members. I've attached a copy of the presentation for your information. We plan to give the same presentation to the Public Supply Advisory Committee on May 11th and hope to receive similar feedback from that committee.

We look forward to hearing from you and your consultant team regarding the MFL summary report being developed. As always please let us know if we can be of assistance.

Chris Zajac
Environmental Flows and Assessments Manager
Natural Systems and Restoration Bureau
2379 Broad Street
Brooksville, FL 34604
(352) 796-7211, Ext. 4413
(352) 586-3776
Chris.Zajac@WaterMatters.org

From: Yonas Ghile
To: Doug Leeper
Subject: FW: LPR Revised MFL and PRMRWSA WUP
Date: Thursday, May 20, 2021 12:06:49 PM
Attachments: Special Condition 4 PRMRWSA Revised for updated MFL_PRMRWSA.docx

FYI

From: Mike Coates <mcoates@regionalwater.org>
Sent: Wednesday, May 19, 2021 3:02 PM
To: Eric DeHaven <Eric.Dehaven@swfwmd.state.fl.us>
Cc: Owen Thornberry <Owen.Thornberry@swfwmd.state.fl.us>; Darrin Herbst <Darrin.Herbst@swfwmd.state.fl.us>; Randy Smith <Randy.Smith@swfwmd.state.fl.us>; Chris Zajac <Chris.Zajac@swfwmd.state.fl.us>; Yonas Ghile <Yonas.Ghile@swfwmd.state.fl.us>; Terri Holcomb <tholcomb@regionalwater.org>
Subject: RE: LPR Revised MFL and PRMRWSA WUP

[EXTERNAL SENDER] Use caution before opening.
Eric:

Condition is acceptable. Have a few minor modifications to clarify the condition (see attached). We are good to go on this.

Thanks,

Mike

Mike Coates, P.G.
Deputy Director
PRMRWSA

Office: 941-316-1776
Cell: 941-915-3728



All correspondence sent to or from the Peace River Manasota Regional Water Supply Authority is subject to the public record laws of Florida.

From: Eric DeHaven <Eric.Dehaven@swfwmd.state.fl.us>

Sent: Tuesday, May 11, 2021 3:00 PM
To: Mike Coates <mcoates@regionalwater.org>
Cc: Owen Thornberry <Owen.Thornberry@swfwmd.state.fl.us>; Darrin Herbst <Darrin.Herbst@swfwmd.state.fl.us>; Randy Smith <Randy.Smith@swfwmd.state.fl.us>; Chris Zajac <Chris.Zajac@swfwmd.state.fl.us>; Yonas Ghile <Yonas.Ghile@swfwmd.state.fl.us>
Subject: LPR Revised MFL and PRMRWSA WUP

Mike, I have attached the proposed special condition we have discussed. This condition would replace Special Condition #4 in your current permit. Please review and let us know if you have any questions or concerns. IF the PRMRWSA is satisfied with the condition as is, please let us know and we will then follow-up with a request to the Authority to initiate a letter modification to your permit to replace the condition.

Thanks!

Eric DeHaven, P.G.
Southwest Florida Water Management District
Assistant Director, Resource Management Division
7601 HWY 301N Tampa FL 33637
(813) 985-7481 X2118

The quantities withdrawn from the lower Peace River are limited by the adopted Minimum Flow, delineated in Rule 40D-8.041(8), Florida Administrative Code, and the diversion schedule described below.

Surface water withdrawals at DID No. 14 will be based on the previous day's combined adjusted average flow as measured in cfs for the lower Peace River at the Arcadia, Joshua Creek at Nocatee, and Horse Creek near Arcadia U.S. Geological Survey Gages. Actual withdrawals are limited by seven flow-dependent Minimum Flows in three blocks:

Flow-Based Block	**If Combined Adjusted Flow in cubic feet per second (cfs) on the Previous Day is:**	**Minimum Flow is:**	**PRMRWSA Diversion Schedule Q=combined adjusted average flow in cubic feet per second (cfs) on the previous day**
1	≤130 cfs	Combined adjusted flow on the previous day	0 cfs
	> 130 cfs and ≤149 cfs	130 cfs	Q - 130 cfs
	> 149 cfs and ≤ 297 cfs	87% of combined adjusted flow on the previous day	Q x 13%
2	> 297 cfs and ≤ 335 cfs	258 cfs	Q - 258 cfs
	> 335 cfs and ≤ 622 cfs	77% of combined adjusted flow on the previous day	Q x 23%
3	> 622 cfs and ≤ 798 cfs	479 cfs	Minimum of either (Q – 479 cfs, or Q x 28%)
	> 798 cfs	60% of combined adjusted flow on the previous day	Minimum of either (MFL max day quantity of 400 cfs, or, Q x 28%)

From:	Chris Zajac
To:	Steve Adams
Cc:	Laura Baumberger; Randy Smith; Doug Leeper; Yonas Ghile; Xinjian Chen; Kristina Deak
Subject:	Lower Shell Creek MFL
Date:	Tuesday, May 25, 2021 9:29:12 AM

Steve,

Just checking in to see how things are progressing. As you know we presented the proposed minimum flows for Lower Shell Creek two weeks ago to the Public Supply Advisory Committee. The presentation was well received by the Committee. The next step for us would be to present the proposed minimum flows to your City Council and soon after schedule a public workshop in the Punta Gorda area to further engage stakeholders in the area. My team is currently updating the MFL report and I'll be happy to share that with you as soon as it's ready. Please advise when you think we might be ready to present to your Council.

Chris Zajac
Environmental Flows and Levels Manager
Natural Systems and Restoration Bureau
2379 Broad Street
Brooksville, FL 34604
(352) 796-7211, Ext. 4413
(352) 586-3776
Chris.Zajac@WaterMatters.org

From:	Chris Zajac
To:	Randy Smith
Cc:	Doug Leeper; Yonas Ghile; Xinjian Chen; Kristina Deak
Subject:	FW: Shell Creek MFL review comments
Date:	Thursday, June 17, 2021 3:22:13 PM
Attachments:	M - MFL comment memo to Chris Zajac 6-17-21.pdf MFL Review Report - Final Draft.pdf

FYI.

Chris Zajac
Environmental Flows and Levels Manager
Natural Systems and Restoration Bureau
2379 Broad Street
Brooksville, FL 34604
(352) 796-7211, Ext. 4413
(352) 586-3776
Chris.Zajac@WaterMatters.org

From: Steve Adams <SAdams@cityofpuntagordafl.com>
Sent: Thursday, June 17, 2021 3:02 PM
To: Chris Zajac <Chris.Zajac@swfwmd.state.fl.us>
Cc: Gregory B. Murray <GMurray@cityofpuntagordafl.com>; Chuck Pavlos <CPavlos@cityofpuntagordafl.com>; Steven Leonard <SLeonard@cityofpuntagordafl.com>; Brian Fuller <BFuller@cityofpuntagordafl.com>; Eric DeHaven <Eric.Dehaven@swfwmd.state.fl.us>; 'Laura Baumberger' <LBaumberger@carollo.com>
Subject: Shell Creek MFL review comments

[EXTERNAL SENDER] Use caution before opening.
Chris:

The next step for MFL will be to invite Laura Bamberger with Carollo, and District staff, to present the proposed MFL to City Council. Utility staff is recommending changes to the proposed MFL prior to presenting this to City Council. Upon your review and consideration, please let me know if the recommended changes can be approved.

Steve Adams
Utilities Engineering Manager
Utilities

City of Punta Gorda
326 West Marion Avenue
Punta Gorda, Florida 33950
941-575-3325

CITY OF PUNTA GORDA
UTILITIES DEPARTMENT

326 West Marion Avenue
Punta Gorda, Florida 33950
941-575-3339

TO: Chris Zajac
Environmental Flows and Assessments Manager
FROM: Steve Adams
DATE: June 17, 2021
SUBJECT MFL Summary Report

Laura Bamberger P.E. with Carollo Engineers has completed a MFL Summary Report for the City. The Summary Report demonstrates how the proposed Shell Creek MFL will impact the City's ability to meet water supply needs during a planning period of 2020 to 2040.

Utility staff is concerned that the proposed MFL strategy reduces the reliability of water supply the City recently accomplished. Utility staff is concerned the proposed MFL strategy will reduce the capacity of the City WTP facilities during Block 1, and the reduced capacity will NOT meet water supply needs of the planning period. Utility staff is concerned the District is seeking for the City to choose to DEPEND upon water supply from the Authority, instead of retaining 100% reliability of self-supply from City owned water supply facilities.

The Summary Report findings show, with the proposed MFL in place;

2020 SCENARIO
The City would have been able to meet monthly average demands of 2020
The City would NOT have been able to meet peak day demand in Block 1 2020

2040 SCENARIO
The City would NOT be able to meet monthly average demands of 2040 in Block 1
The City would NOT be able to meet peak day demand in Block 1

Under scenarios where the City is unable to meet water supply needs with the City surface water WTP facilities and the City RO WTP facilities, the City would be dependent upon water supply from the Authority.

Prior to scheduling the Draft MFL presentation to City Council, Utility staff is recommending the following approach:

1. Change the MLF to 4.5 mgd during Block 1. The surface water treatment process has a 10% treatment loss. A 4.5 mgd flow from Shell Creek will provide 4.0 mgd of finish water.
2. Change MFL compliance to average month water use
3. The City will obtain water supply from the Authority during Block1 when peak day demand exceeds 8.0 mgd, (4 mgd of surface water, plus 4 mgd of RO) A water transfer agreement with the Authority may be needed.
4. The City may seek to expand the RO from 4 mgd to 8 mgd during the 20 year planning period when needed.

We are providing the MFL Summary Report. Upon your review and consideration, please call or email to let us know the best approach for modifying the MFL strategy. Many thanks for your help.



City of Punta Gorda
Engineering Services for Evaluation of Minimum Flow and Level (MFL) Rule

Review of the Proposed Lower Shell Creek MFL

FINAL DRAFT | June 2021

City of Punta Gorda
Engineering Services for Evaluation of MFL Rule

Review of the Proposed Lower Shell Creek MFL

FINAL DRAFT | June 2021

This document is released for the purpose of information exchange review and planning only under the authority of Laura Baumberger, PE June 16, 2021 Florida PE 65401.

301 NORTH CATTLEMEN ROAD, SUITE 302 • SARASOTA, FLORIDA 34232 • P. 941.371.9832

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Section 1

INTRODUCTION

The City of Punta Gorda (City) retained Carollo Engineers, Inc. (Carollo) to complete a technical review of past reports, data, and streamflow/water supply model associated with the Southwest Florida Water Management District (District) proposed minimum flow and level (MFL) rule for the Lower Shell Creek and to evaluate how the proposed MFL rule would affect the City's water supply. The review includes an analysis of the assumptions, data, and methodologies used in developing the draft MFL rule and model, as well as comments on the proposed rule by a scientific peer review panel. Specifically, this technical review includes the following:

- History of the Lower Shell Creek MFL rule.
- Documentation of MFL legislation, implementation methodologies, existing MFLs on other water bodies, and other relevant information to provide an understanding of the MFL regulation.
- Review of the approach, methodology, and results of the District's recommended MFL for the Lower Shell Creek.
- Identification and evaluation of the anticipated effect(s) of the proposed Lower Shell Creek MFL on the City's current water use permitted quantities and future withdrawals.

1.1 History of the Lower Shell Creek MFL

The District first drafted a proposed MFL for the Lower Shell Creek in 2010. However, they determined that the proposed MFL would not be achieved over the next 20 years. Thus, a recovery strategy was required to define how the MFL would be met following the rule's adoption.

The Lower Shell Creek MFL was drafted and modeled in conjunction with an MFL for the Lower Peace River to appropriately characterize the strong hydrologic interactions between the river, the creek, and Charlotte Harbor. While the Lower Shell Creek MFL was not adopted into rule in 2010, the Lower Peace River MFL was adopted in July 2010. The MFL rules requires the reevaluation of MFLs within five years of the adoption date to incorporate additional ecological data. Thus, the Lower Peace River MFL was initially reevaluated in 2015 and rescheduled for a more comprehensive reevaluation in 2020.

During the time between the first proposed Lower Shell Creek MFL in 2010 and now, the District collected additional hydrologic, bathymetric, hydrodynamic, and ecologic information through studies to support the establishment of a new MFL for the Lower Shell Creek and the Lower Peace River. This data collection included the establishment of baseline flows for the Lower Shell Creek by HSW Engineering in 2016[1].

[1] HSW Engineering, Inc. April 2016. *MFL Technical Support – Lower Peace River Update of Baseline Flow for Shell Creek Final Report*. Prepared for the Southwest Florida Water Management District.

In April 2019, the District presented a new proposed MFL for Lower Shell Creek[2] to the City. At that point, the District maintained that a recovery strategy was needed for this MFL to be met, and they had drafted a proposed recovery strategy[3] for the City's consideration. Once again, the Lower Shell Creek and the Lower Peace River MFLs were drafted and modeled simultaneously to capture interactions between the two water bodies and Charlotte Harbor.

In November 2019, the City contracted with Carollo to perform a technical analysis of how the proposed Lower Shell Creek MFL would affect the City's water supply. Carollo reviewed the data and methodology that the District used to draft the MFL and, in collaboration with the City, suggested changes to some key areas of the District's assessment including:

- Adding the City's new reverse osmosis (RO) facility and the Peace River Manasota Regional Water Supply Authority (PRMRWSA) pipeline interconnection as additional water supply options,
- Updating monthly peaking factors and potable water demand projections, and
- Editing the water supply reliability model to better represent the City's water supply operations.

The District responded to these suggestions and performed additional assessments, which they presented to the City in October 2020. Based on these new assessments, the District determined that the proposed Lower Shell Creek MFL would be met over the next 20 years provided that the City operations continue as intended. Thus, a recovery strategy would not be required. Alternatively, to allow the MFL to be met, a prevention strategy will be drafted and implemented as a modification to the City's water use permit (WUP).

The District Governing Board adopted the new Lower Peace River MFL in August 2020. Because of the additional analyses performed for the Lower Shell Creek MFL and the changes made, the District postponed presenting the Lower Shell Creek MFL rule to the Governing Board for adoption until 2021. Figure 1 shows the progression of the Lower Shell Creek (LSC) and Lower Peace River (LPR) MFL rules.

[2] Southwest Florida Water Management District. March 2020. *Proposed Minimum Flows for the Lower Peace River and Lower Shell Creek, Draft Report.*
[3] Southwest Florida Water Management District. February 2020. *Proposed Recovery Strategy for the Lower Shell Creek, Draft Report*.

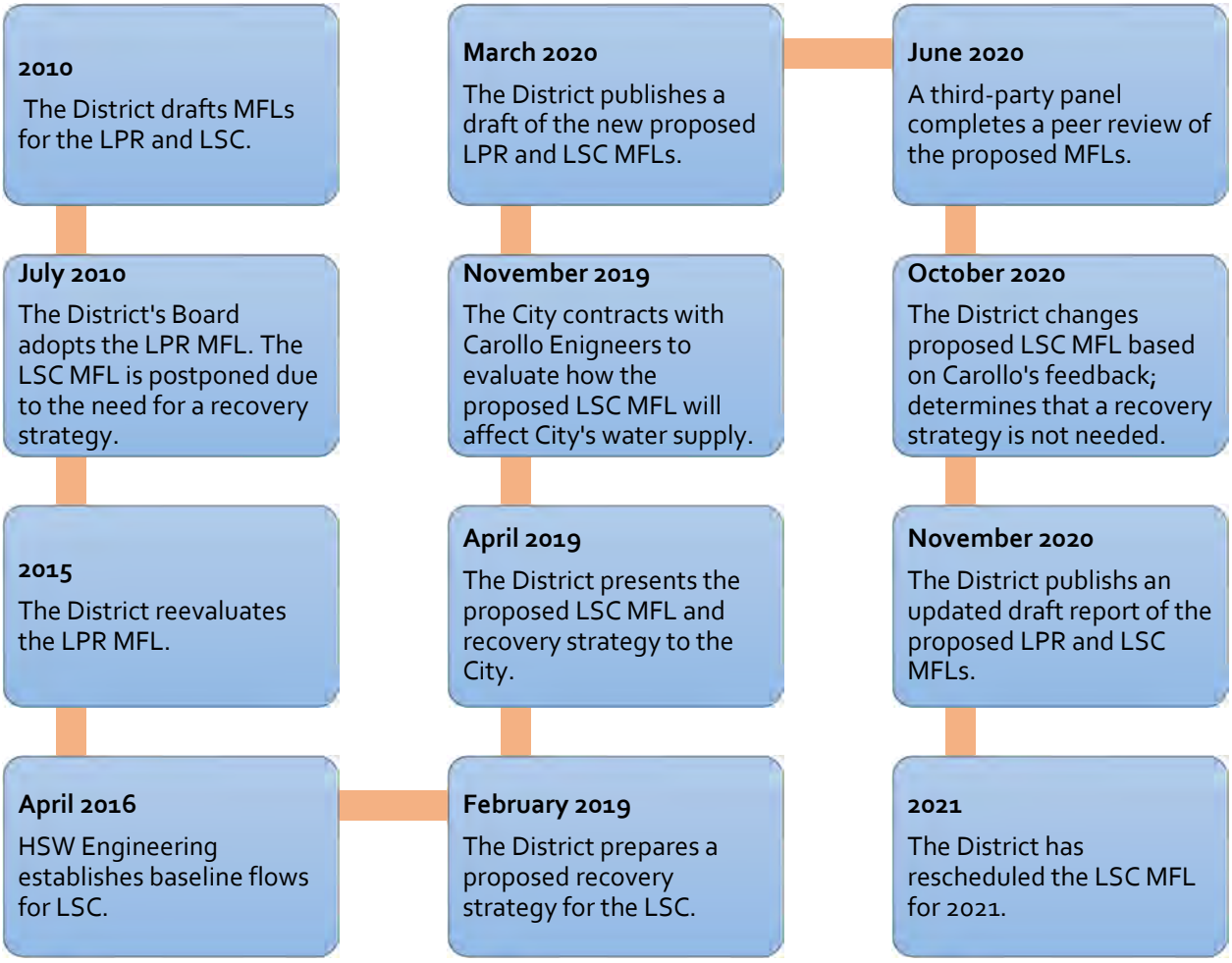


Figure 1 Timeline for the Lower Shell Creek (LSC) and Lower Peace River (LPR) MFL Rules

1.2 City of Punta Gorda Water Supply

The proposed MFL defines the Lower Shell Creek as the portion of Shell Creek that extends from the Hendrickson Dam to its confluence with the Lower Peace River. The Hendrickson Dam impounds the Shell Creek Reservoir which is the primary raw water source for the City's Shell Creek Water Treatment Plant (WTP). The Shell Creek WTP treats and supplies potable water to Punta Gorda utility customers.

According to its WUP, the Shell Creek WTP is permitted to pump from the Shell Creek Reservoir an average daily volumetric rate of 8.088 million gallons per day (mgd) and a peak month daily average maximum of 11.728 mgd. In 2020, the average water withdrawal rate was 5.34 mgd.

As a surface water treatment facility, the Shell Creek WTP experiences high concentrations of total dissolved solids (TDS) which are regulated by the Florida Department of Environmental Protection (FDEP) under the secondary drinking water standards. According to these standards, the maximum allowable concentration of TDS in drinking water is 500 parts per million (ppm). Because of these high concentrations experienced at the Shell Creek WTP, the City was allowed a variance by FDEP for a TDS maximum of 1,000 ppm. However, this provision was temporary, and the City required another water supply source to augment the finished water supply and meet the 500 ppm secondary drinking water standard for TDS. To address the TDS challenge, the City constructed a 4 mgd RO facility to treat brackish groundwater to be blended with the Shell Creek WTP water. The RO facility became operational in July 2020. This has allowed the City to continue to use the Shell Creek WTP while meeting the FDEP's secondary drinking water standard.

In addition to the RO facility, the City collaborated with the PRMRWSA to construct a 6-mile, 24-inch diameter interconnect between the Shell Creek WTP and the Peace River Facility to provide a regional connection between the two facilities, added water supply reliability between the two entities, and the opportunity for cooperative funding for water supply projects from the District. The City is party to an agreement[4] with the PRMRWSA that governs the authority, operation, and obligations of both parties for use of the interconnect. The contract intends for water exchanged to net zero at the end of each fiscal year (ending September 30). If a balance remains at the end of the period that is less than or equal to 30 million gallons (MG), the balance shall be carried over to the next year. If a balance remains at the end of the period that is greater than 30 MG, the indebted party is required to pay off the imbalance. This agreement was amended[5] in December 2019 increasing the water exchange quantity from 30 MG to 60 MG.

Initially, the District did not include the City's RO facility and interconnect operations in their Lower Shell Creek MFL evaluation, which they used to determine whether the MFL would be met, and a subsequent recovery strategy would be required. Once the RO facility was constructed, the MFL model and evaluation was revised to include this additional water source.

[4] Water Systems Interconnect and Water Transfer Contract Between the Peace River Manasota Regional Water Supply Authority and the City of Punta Gorda, September 3, 2013.
[5] Second Amendment to Water Systems Interconnect and Water Transfer Contract Between the Peace River Manasota Regional Water Supply Authority and the City of Punta Gorda, December 4, 2019.

Section 2

MINIMUM FLOWS AND LEVELS BACKGROUND

Florida's MFL program is based on the requirements of Chapter 373.042 of Florida Statutes (FS). This statute requires that either a water management district (WMD) or the FDEP establish minimum flows for surface watercourses and minimum levels for groundwater and surface waters. Minimum flows are established for rivers, streams, estuaries, and springs, and minimum levels are established for lakes, wetlands, and aquifers. The statutory description of minimum flow is "the limit at which further withdrawals would be significantly harmful to the water resources or ecology of the area" (Ch. 373.042 (1)(a), FS).

The statute provides additional guidance to the WMDs and FDEP on how to establish MFLs, including how they may be calculated using the "best information available" and to reflect "seasonal variations" when appropriate. Protection of non-consumptive uses also are to be considered as part of the process, but the decision whether to provide for protection of non-consumptive uses is to be made by the Governing Board of the WMD or FDEP (Ch. 373.042 (1)(b), FS).The statute also states the following:

> When establishing minimum flows and levels pursuant to s. 373.042, the department or governing board shall consider changes and structural alterations to watersheds, surface waters, and aquifers and the effects such changes or alterations have had, and the constraints such changes or alterations have placed, on the hydrology of an affected watershed, surface water, or aquifer, provided that nothing in this paragraph shall allow significant harm as provided by s. 373.042(1) caused by withdrawals.

In the case of the Lower Shell Creek MFL, this means that the existence of the Hendrickson Dam and the use of the Shell Creek Reservoir as a drinking water source must be considered in drafting the MFL, and, because of these factors, the Lower Shell Creek cannot be restored to natural conditions. Instead, the WMD or FDEP must establish a baseline flow condition that considers the water body as a water supply source.

WMDs are to develop priority lists of watercourses and water bodies for which to establish MFLs and the proposed schedules to do so. These lists are to be updated yearly and sent to FDEP for review and approval. In developing these lists, the WMDs are to examine the importance of the watercourse or water body to the State or region and the potential for significant harm to the water resources or ecology, including waters which are experiencing or may reasonably be expected to experience adverse impacts.

Chapter 62-40.473 of the Florida Administrative Code (FAC) lists ten water resource values that shall be considered when developing MFLs:

1. Recreation in and on the water.
2. Fish and wildlife habitats and the passage of fish.
3. Estuarine resources.
4. Transfer of detrital material.
5. Maintenance of freshwater storage and supply.

6. Aesthetic and scenic attributes.
7. Filtration and absorption of nutrients and other pollutants.
8. Sediment loads.
9. Water quality.
10. Navigation.

As such, MFLs are to consider not only the protection of natural resources, but also navigation, recreation, and – of great importance to the Lower Shell Creek in particular – the maintenance of freshwater storage and supply.

If an MFL will not be met upon establishment or within the next 20 years, a recovery strategy must be established and approved simultaneously with the MFL. FS states the following with respect to a recovery strategy:

> Must be implemented expeditiously and include a phased-in approach or a timetable allowing for the provision of sufficient water supplies for all existing and projected reasonable-beneficial uses, including development of additional water supplies and implementation of conservation and other efficiency measures concurrent with and, to the maximum extent practical, to offset reductions in permitted withdrawals. The recovery strategy may not depend solely on water shortage restrictions declared.

The statute allows for all scientific information, technical data, methodologies, and models – including all scientific and technical assumptions used in each model – used to establish an MFL be subject to independent scientific peer review. After a peer review panel is selected, the panel has 120 days to submit a final report of their findings to the District Governing Board. The District must give significant weight to the final report of the peer review panel when establishing the MFL. In deciding whether to conduct the voluntary independent scientific peer review mentioned previously, the District must consider the following:

- Whether the MFL is based on a previously peer-reviewed methodology.
- The level of complexity of the MFL.
- Whether the water body for which the MFL is being developed includes water resource characteristics that are substantially different than previously peer reviewed MFLs.
- The degree of public concern regarding the MFL.

For the proposed Lower Peace River and Lower Shell Creek MFL, this peer review process was completed in June 2020 and the panel delivered their final report on June 26, 2020. Meetings conducted by the peer review panel occurred in April and June 2020. They included web-based teleconferences facilitated by the District and allowed opportunities for public comment on the review process. In addition, these meetings, discussion between peer review panelists and the District, and relevant associated documentation were conducted through the District's web forum and can be accessed at by clicking here[6]. The final peer review panel report can be accessed on the District's MFL documents and reports websites by clicking here[7].

[6] https://swfwmd.discussion.community/?forum=788051
[7] https://www.swfwmd.state.fl.us/projects/mfl/documents-and-reports

Each year, the District is required to update and submit its MFLs priority list to the FDEP by November 15th, for approval, and include the approved priority list in the District's Consolidated Annual Report by March 1st. The District has established 205 MFLs, including MFLs for 23 river segments, 10 springs or spring groups, 127 lakes, 36 wetlands, and 7 wells. The established MFLs include 90 that have been reevaluated and revised, as needed, such as the Lower Peace River MFL. The District has also established 2 reservations, one for water from Morris Bridge Sink to support MFLs recovery for the lower Hillsborough River and another for water stored in Lake Hancock and released to Lower Saddle Creek to support MFLs recovery in the upper Peace River. Chapter 40D-8, FAC is specific to the District and includes all MFLs that have been established by the District and approved by the Governing Board.

Section 3

LOWER SHELL CREEK MFL DEVELOPMENT TECHNICAL REVIEW

The proposed MFL and its projected impact on the City in meeting its water demand projections was evaluated using the District's MFL model and a water reliability analysis. The following sections summarizes this evaluation.

3.1 Proposed Lower Shell Creek MFL Rule

The proposed Lower Shell Creek MFL is different than the adopted Lower Peace River MFL, but they were modeled as one system to appropriately characterize hydrologic interactions between the river, the creek, and Charlotte Harbor. Table 1 shows the proposed Lower Shell Creek MFL as it would apply to the City with flows in mgd and cubic feet per second (cfs).

Table 1 Proposed Lower Shell Creek MFL

Block	Flow Range	Period	Maximum Allowable Reservoir Withdrawal
Block 1	0 – 56 cfs (0 – 36.2 mgd)	January – April	4.22 mgd
		May	3.63 mgd
		June – October	3.10 mgd
		November – December	4.42 mgd
Block 2	>56 – 137 cfs (>36.2 – 88.5 mgd)	All Months	23% of inflow (8.4 – 26.6 mgd)
Block 3	>137 cfs (>88.5 mgd)	All Months	40% of inflow (35.4 – 2,636 mgd)

The proposed Lower Shell Creek MFL includes three blocks that correspond to low (Block 1), medium (Block 2), and high (Block 3) flows for the Lower Shell Creek. The block conditions are determined using the equation below and subtracting a monthly average amount of estimated excess flow from upstream agricultural irrigation. These values are shown in Table 2. More information on the calculation of these values will be available in the District's MFL report[8].

Table 2 Monthly Average Agricultural Flows

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Flow, mgd	8.5	11.0	14.7	8.7	6.8	27.0	10.1	0.0	0.0	0.7	5.3	6.0

[8] https://www.swfwmd.state.fl.us/projects/mfl/documents-and-reports

In Table 1, the flow range is the inflow into the reservoir from the prior day based on the following equation:

$$\text{Inflow}_{(\text{yesterday})} = \text{Reservoir Volume}_{(\text{today})} - \text{Reservoir Volume}_{(\text{yesterday})} + \text{Outflow}_{(\text{yesterday})} + \text{Withdrawal}_{(\text{yesterday})}$$

The reservoir volume can be determined using the City's stage-storage curve, and the outflow is measured at the United States Geological Survey (USGS) gauge downstream of the dam (SCPG, USGS 02298202). The period is used to determine when the maximum allowable reservoir withdrawal should be applied based first on which block condition applies. For example, if the City is in Block 1 in May, then they would be allowed to withdrawal a maximum daily amount of 3.63 MG. There are no monthly restrictions for Blocks 2 or 3, and the City would be permitted to withdrawal 23 percent or 40 percent of the inflow, respectively. For example, if the City is in Block 2 and the inflow on the previous day was 36.2 mgd, then the City would be allowed to withdrawal up to 8.4 mgd from the reservoir, or approximately 23 percent.

Similar to the Lower Shell Creek MFL proposed in 2010, the new proposed MFL uses block-based percent-of-flow reductions associated with significant harm thresholds based on a 15 percent reduction in the most sensitive assessed habitat, in this case, the two practical salinity units (psu) or lower salinity habitat.

Several updates were made in developing the Lower Shell Creek MFL since the 2010 evaluation. Most notably, this MFL is based on flow ranges rather than calendar days as used in the previously proposed MFL. This change allowed for more appropriate assessment of environmental factors that exhibit continuous or incremental responses to changes in flows.

Also, the maximum allowable reservoir withdrawal for Block 1 was originally 13 percent. This meant that the City would not be able to withdrawal any water from the reservoir on zero-flow days, or days when there is no inflow. After discussions with the District and the City, the District came up with a new structure under Block 1 that allows the MFL to be met 99.6% of the time and allows the City to always be able to withdrawal some amount of water, with a minimum of 3.1 mgd depending on the month, even on zero-flow days.

Other improvements include added hydrologic datasets, a new high-resolution LiDAR-based digital elevation model, a refined and expanded hydrodynamic model that includes all of Charlotte Harbor, and re-mapped bathymetry of the Lower Peace River, Lower Myakka River, and Charlotte Harbor.

3.2 Review of the Lower Shell Creek MFL Baseline Flows Development

The MFL flow ranges are the 50 and 75 percent exceedances from baseline flows. Baseline flows were established in 2016 by HSW Engineering, Inc. using USGS data from the Shell Creek near Punta Gorda gauge (SCPG, USGS 02298202), which is located directly downstream of the Hendrickson Dam. To establish baseline flows, data collected from this gauge was modified to account for missing data, decreases from water supply withdrawals, increases from agricultural runoff, and apparent zero flow days. The period of record used was from January 1, 1966 to September 30, 2014, even though gauge recordings begin in 1965. The 1987 USGS rating curve method was used to fill in a gap that exists in the recorded data from October 1, 1987 to September 30, 1994.

Although the reservoir was impounded by construction of the dam in 1965, the City withdrawal records begin in 1972 when the average withdrawal rate was 1.3 mgd. Thus, the period of withdrawals from 1965 until 1972 was deemed insignificant and no flows were added to the gauge data for this period. Agricultural irrigation runoff subtracted from gauged flows was calculated using a chloride mass balance method and verified against irrigation application rates, periods, and inefficiency data provided by the Institute of Food and Agricultural Services (IFAS).

Finally, baseline flows were adjusted for days when the gauge record data was zero because of the reservoir stage falling below the outfall of the dam and thus no water flowing over it. Regression equations were developed using the Shell Creek gauge at Circle K Groves (SCCK, USGS 02297600) and the Prairie Creek gauge near Fort Ogden (PCFO, USGS 02298123) to account for the apparent zero flow days. These were not adjusted for withdrawals because non-zero discharges used in the regressions included withdrawals.

The District used information on water quality, aquatic habitats, inundation of floodplain wetlands, and maintenance of biologically relevant salinities with water volumes (fish habitat), shoreline lengths (juvenile fish habitat), and bottom areas (fish habitat and food sources) associated with salinities of 2 to 20 psu to establish the 15 percent threshold of significant harm. Each environmental resource was evaluated using incremental percent-of-flow reductions from baseline flows to determine the most sensitive assessed habitat, which, in the case of the Lower Shell Creek, was determined to be the 2 psu or lower salinity habitat.

Once baseline flows were established for Shell Creek and the ≤ 2 psu salinity habitat was identified as the most sensitive habitat, the District simulated the environmental impact using the 15 percent reduction in ≤ 2 psu salinity habitat and a salinity habitat hydrodynamic model to develop the allowable flow reductions for each block.

3.3 Review of the District's Lower Shell Creek MFL Model

The District built a spreadsheet model in Microsoft Excel to determine if the proposed MFL could be met based on historical data, or if it required a recovery strategy for adoption. This model was designed to also evaluate the reliability of the City's water supply under different scenarios if the proposed MFL had been in place in past years. Carollo reviewed the model, and the District made changes as recommended by Carollo and in collaboration with the City. Key changes to the model included adding the RO facility and PRMRWSA interconnect as variables for water supply, updating the monthly peaking factors and projected water demand model input parameters, and allowing for a monthly maximum allowable withdrawal in Block 1 rather than a percent-of-flow based allowed withdrawal. The following summarizes the District's final model used to determine if the MFL would have been met using historical flow data from January 1, 1972 to December 31, 2018.

Input conditions that were varied in the model were as follows:

- Water sources included the Shell Creek Reservoir, the City's RO facility, and the PRMRWSA interconnect. The initial review resulted in a modification of how the water sources were applied. The two approaches were:
    - **Initial:** Water sources were applied preferentially as follows: 1) Shell Creek Reservoir, 2) RO (any amount, up to 4 mgd), and 3) Interconnect (any amount, up to 4 mgd).

  - **Revised:** Review of the model revealed that water from the RO facility was not being applied in a way that represented how the facility would be operated. The City indicated a more accurate approach to operate the RO facility at a consistent flow of 3.5 mgd in Block 1 and 2 mgd in Blocks 2 and 3. The District revised the model based on this feedback. The PRMRWSA interconnect remained as the third water source to be used as needed with a maximum quantity of 4 mgd.
- Total dissolved solids (TDS) limit: The model included two TDS limits:
  - **1,000 milligrams per liter (mg/L):** This reflects the City's current allowable TDS limit under an exemption granted by FDEP through August 2021.
  - **500 mg/L**: The TDS limit will return to 500 mg/L in August of 2021.
- Projected demands and monthly peaking factors: The model assumed a 2040 projected demand of 6.59 mgd. Demands were varied monthly to capture seasonal fluctuations as described in the District's draft report.

3.4 Demand Projections and Monthly Peaking Factors

As required by the Florida Legislature, the District developed water demand projections for the 20-year planning horizon to help establish the MFL rule. The District had originally established a raw water demand projection for the City for 2040 as 6.3 mgd. After discussion with the District, it was decided that the City demand projections should be updated based on the most recent available information. Subsequently, the District updated the water demand projection for the City for 2040 to 6.59 mgd using data through 2019 and the following methodology.

The District's method for projecting water demands uses data from the City's Public Supply Annual Reports as shown in Table 3, the Bureau of Economic and Business Research (BEBR) medium population projections for Charlotte County normalized to the City's water service area, and the following equations for operational demand, or raw water, and finished water (also referred to as "gross use"):

$$\text{Operational Demand} = \text{Gross Use} - \text{Imported Water} + \text{Exported Water} + \text{Treatment Loss} + \text{Line Flush Loss}$$

$$\text{Gross Use} = \text{Functional Population} * \text{Demand per Capita}$$

Water demands are calculated by first projecting population growth from the functional population and BEBR projections, and then, applying the above equations. The line flush loss is calculated as 1 percent of the gross use.

Table 3 City Public Supply Annual Report Data

	2015	2016	2017	2018	2019	Average
Raw Water Withdrawal (mgd)	5.065	5.081	5.576	5.421	5.135	5.256
Imported Water (mgd)	0.411	0.364	0.410	0.451	0.517	0.431
Exported Water (mgd)	0.428	0.332	0.405	0.310	0.315	0.358
Treatment Loss (mgd)	0.534	0.467	0.575	0.455	0.350	0.476
Gross Use (mgd)	4.513	4.646	5.006	5.106	4.988	4.852
Functional Population	35,857	36,302	37,355	38,702	39,177	37,479
Demand per Capita (gpcd)	126	128	134	132	127	129

Note:
(1) Data from the City's Public Supply Annual Report submitted to the District.

Based on the District's demand projection methods, the City's 2040 annual average raw water (operational) demand projection is approximately 6.59 mgd, and the finished water (gross use) demand projection is approximately 6.15 mgd.

The annual average water demand projections in five-year increments as calculated based on the described methodology are shown in Table 4. Note the 2020 population is the actual functional population according to the City's 2020 Public Supply Annual Report.

Table 4 Population and Average Annual Water Demand Projections

Year	Population	Annual Average Water Demand (mgd)
2020	39,875[1]	5.69
2025	42,717	5.99
2030	44,632	6.24
2035	46,035	6.42
2040	47,293	6.59

Note:
(1) Actual functional population based on the City's 2020 Public Supply Annual Report.

The City is responsible for meeting the water demands of its customers. These demands fluctuate monthly, daily, and hourly. These fluctuations are captured by calculating peaking factors (the ratio of a maximum flow to the average flow), which can be used to account for peak demands in the system. Table 5 shows the monthly peaking factors calculated by Carollo and recommended to the District for use in their MFL analysis as well as the actual monthly demands for 2020 and the estimated monthly demands for 2040 based on the monthly peaking factors and an annual average demand of 6.59 mgd. Peaking factors were calculated based on the average of five years (2015-2019) of data.

Table 5 Monthly Peaking Factors and Corresponding 2020 and 2040 Demand

Month	Peaking Factor	2020 Demand[1]	2040 Demand[1]
January	1.04	5.62	6.86
February	1.05	5.67	6.93
March	1.13	6.10	7.46
April	1.17	6.32	7.72
May	1.08	5.83	7.13
June	0.88	4.75	5.81
July	0.78	4.21	5.15
August	0.67	3.62	4.42
September	0.84	4.54	5.54
October	1.03	5.56	6.80
November	1.20	6.48	7.92
December	1.11	5.99	7.33

Note:
(1) Annual average demand for 2020 is 5.34 mgd and annual average demand for 2040 is 6.59 mgd.

3.5 MFL Model Water Supply Reliability

By law, an MFL is required to be met 100 percent of the time. The District modeled different scenarios and determined that the MFL could be met 99.8 percent of the time under current demands (5.34 mgd) and 99.5 percent of the time under 2040 demands (6.59 mgd), which the District deemed acceptable as 100 percent of the time by rounding. The scenarios modeled included making changes for the standard and interim TDS concentrations and the source of water supply to determine the City's water supply reliability based on 2040 demands. The results of the model runs are summarized in Table 6.

Table 6 Results of the District's Water Supply Reliability Model Analysis to Meet 2040 Water Demands with MFL Restrictions

Water Supply Source	TDS Limit (mg/L)	Reliability
Reservoir	500	71.6 %
Reservoir and RO	500	99.6 %
Reservoir, RO, and Interconnect	500	100 %

Table 6 includes three scenarios tested for water supply reliability by the District in which the water supply source was varied. These results show that the City's water supply reliability would drop to 71.6 percent with the MFL in place. When adding the RO facility as a water supply source, the reliability increases to 99.6 percent, and then to 100 percent with use of the PRMRWSA interconnect as well. Reliability is based on whether the available water source(s) can completely meet demand on a given day and was calculated as follows:

$$\text{Reliability} = (\text{Number of Days Demand is Met} / \text{Total Number of Days}) \times 100$$

The District's model was used to determine if the proposed MFL would be met if applied to historical data as well as 20-year projected future demands. This is required as part of the MFL process. The District used their model to determine the City's water supply reliability under different scenarios as shown in Table 6 above.

3.6 City Water Supply Scenarios

To expand on the monthly average reliability analysis completed as part of the District's MFL model, Carollo completed an analysis of the City's water supply reliability and water source usage under several scenarios as summarized in Table 7. The scenarios included treatment losses associated with the Shell Creek WTP when meeting the City's demands, i.e., the allowed reservoir withdrawals were decreased by the historical treatment loss percentage when accounting for the portion of demand met by the Shell Creek WTP.

While the District's model assumed 3.5 mgd of RO usage in Block 1 on average throughout a month, the RO facility is modular in nature and would be operated at capacities of either 2 or 4 mgd on a daily basis. Therefore, Carollo completed additional scenario analysis to determine what specific water sources would be used under various demand conditions. These scenarios evaluated monthly average and maximum day demand conditions for 2020 and 2040 under the different MFL block restrictions, as well as for the existing situation of no MFL restrictions. The RO usage was assumed based on the estimated amount of RO that would be required to meet monthly demands under the MFL conditions as shown in Table 7.

The results of each scenario are summarized in the following sections.

Table 7 Summary of City Water Supply Scenarios Evaluated under MFL Conditions

Scenario	Monthly Average Demand	Maximum Day Demand	Projected Monthly Average Demand	Projected Maximum Day Demand	Proposed MFL Block	RO Usage, mgd
2020 Demand Scenarios						
1	x				None	2.0
2	x				Block 1	2.0
3	x				Block 2/3	2.0
4		x			Block 1	4.0
5		x			Block 2/3	2.0
2040 Demand Scenarios						
1			x		None	2.0
2			x		Block 1	3.5(1)
3			x		Block 2/3	2.0
4				x	Block 1	4.0
5				x	Block 2/3	2.0/4.0

Note:
(1) Monthly average RO usage.

3.6.1 2020 Scenario 1 – Monthly Average Demands with No MFL Restrictions

This scenario considered 2020 monthly average demands with no MFL restrictions and the RO facility coming online in July operating at a monthly average production of 2.0 mgd. The results are displayed in Figure 2. This shows how the City's current monthly demands can be met using the reservoir and the RO facility without any MFL restrictions.

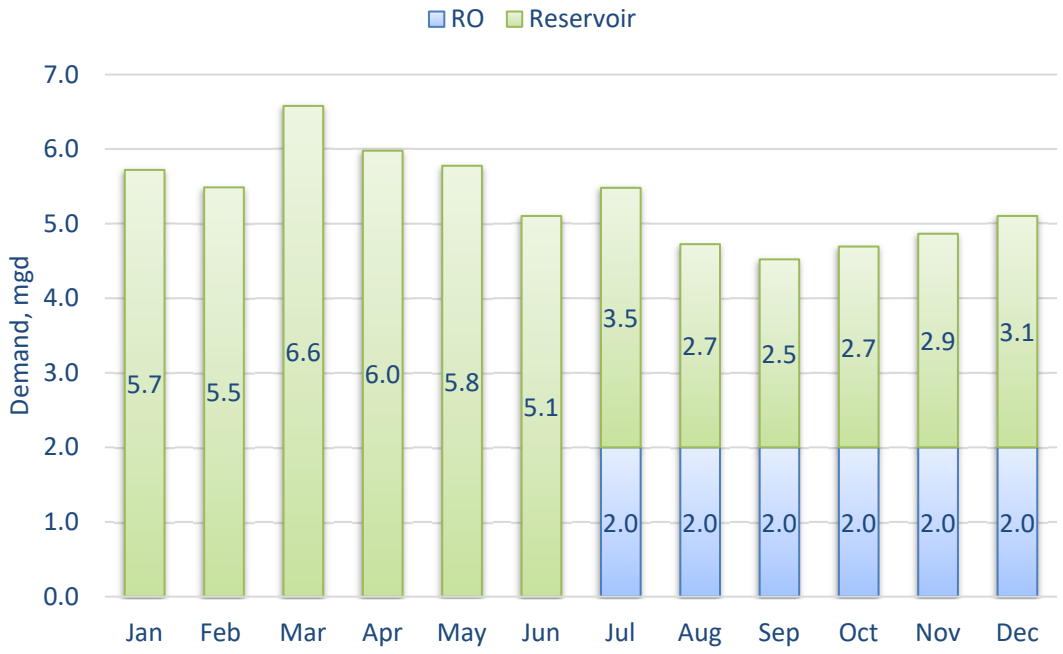


Figure 2 2020 Monthly Average Demands and Water Sources without MFL Restrictions

3.6.2 2020 Scenario 2 – Monthly Average Demands under MFL Block 1

This scenario used monthly average demands for 2020 and assumed Block 1 conditions to show how operations may have been affected in 2020 if the proposed MFL were already in place. It should be noted that Block 1 conditions typically occur only 25-30 percent of the time, and typically would occur during dry weather periods; however, all months were included to show how the City could meet monthly demands under Block 1 conditions.

It was assumed that the RO facility would operate at an average of 2.0 mgd under this demand condition. If demands could not be met at a monthly average of 2.0 mgd from the RO and allowed reservoir withdrawals under the Block 1 MFL conditions, then the RO was increased to meet monthly demand.

The results are displayed in Figure 3. This shows that RO would have needed to be increased above 2 mgd on some days in March, May, and July to meet monthly demands in 2020 if the City were in Block 1 of the MFL every day.

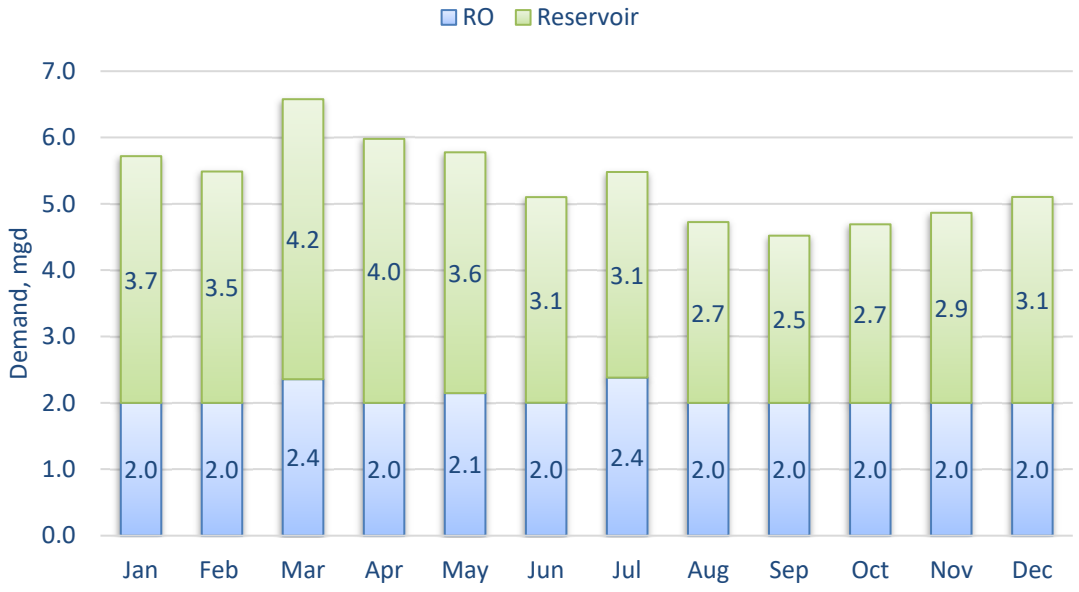


Figure 3 2020 Monthly Average Demands and Water Sources in Block 1 of MFL

3.6.3 2020 Scenario 3 – Monthly Average Demands under MFL Blocks 2 and 3

This scenario used monthly average demands for 2020 and assumed the minimum allowable reservoir withdrawal amount under Block 2 and 3 conditions (approximately 8.4 mgd) for every month to show how operations may have been affected in 2020 if the proposed MFL were already in place. It was assumed that the RO facility would operate at an average of 2.0 mgd to meet TDS requirements.

The results are displayed in Figure 4. This shows that monthly demands would have been met in 2020 using the reservoir and 2.0 mgd from the RO facility.

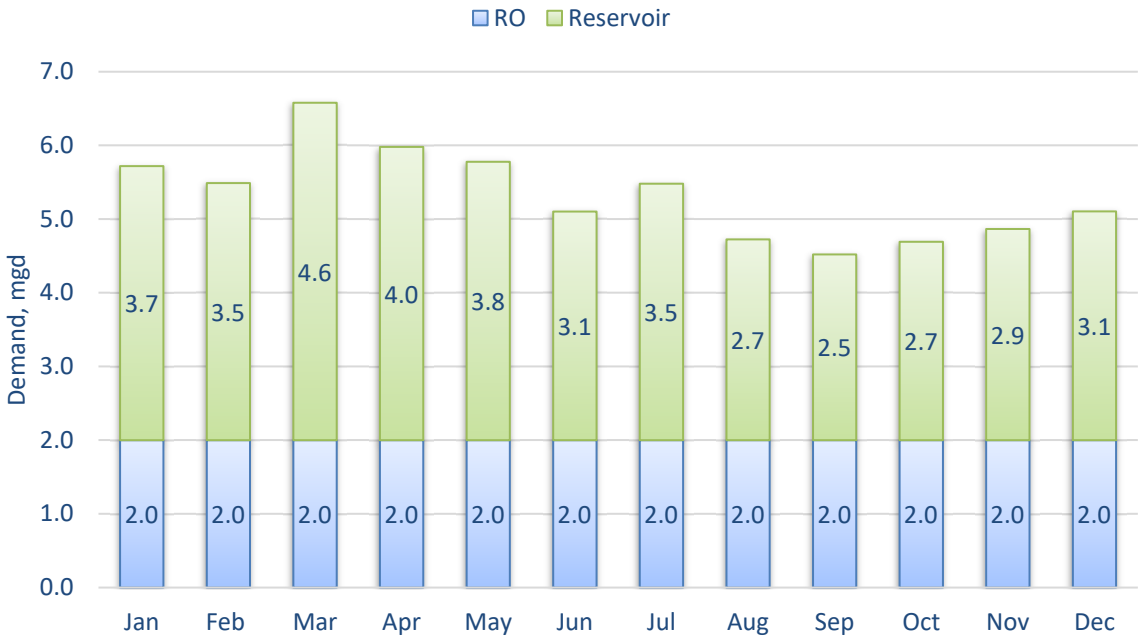


Figure 4 2020 Monthly Average Demands and Water Sources in Blocks 2 and 3 of MFL

3.6.4 2020 Scenario 4 – Maximum Day Demand under MFL Block 1

This scenario used the highest demand day experienced in 2020 (8.05 mgd) and Block 1 conditions for every month to show how the City would have been affected in 2020 if the proposed MFL were already in place. It was assumed that the RO facility would operate at 4.0 mgd under a maximum day demand situation. If demand could not be met using 4.0 mgd from the RO, then water was purchased from PRMRWSA to meet the demand.

The results are displayed in Figure 5. This shows that under Block 1 conditions, the City would have needed to purchase approximately 1 mgd from PRMRWSA if a maximum day demand of 8.05 mgd occurred between May and October.

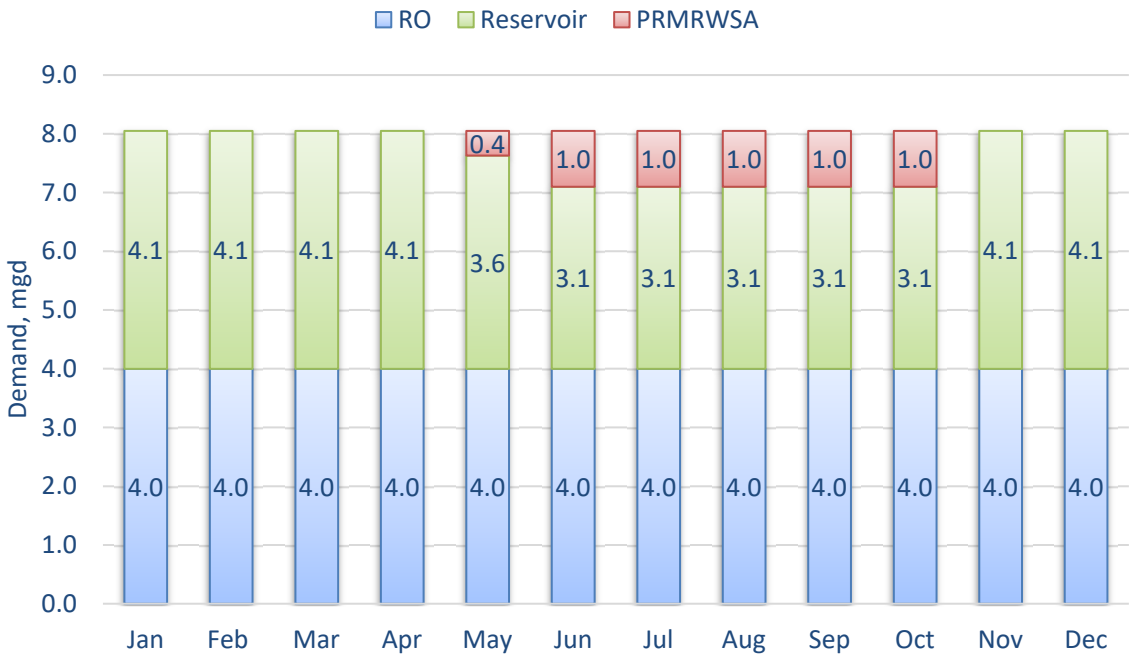


Figure 5 2020 Maximum Day Demand and Water Sources in Block 1 of MFL

3.6.5 2020 Scenario 5 – Maximum Day Demand under MFL Blocks 2 and 3

This scenario used the highest 2020 demand day experienced in 2020 (8.05 mgd) under Block 2 and 3 streamflow conditions for every month to show how the City could supply water on a maximum day demand condition should it occur during Block 2 or 3. It was assumed that the RO facility would operate at 2.0 mgd since MFL restrictions would not limit withdrawals under Blocks 2 and 3.

The results are displayed in Figure 6. This shows that the maximum day demand of 8.05 mgd could have been met in 2020 using 6.1 mgd from the reservoir and 2.0 mgd from the RO facility under Block 2 or 3 conditions of the MFL.

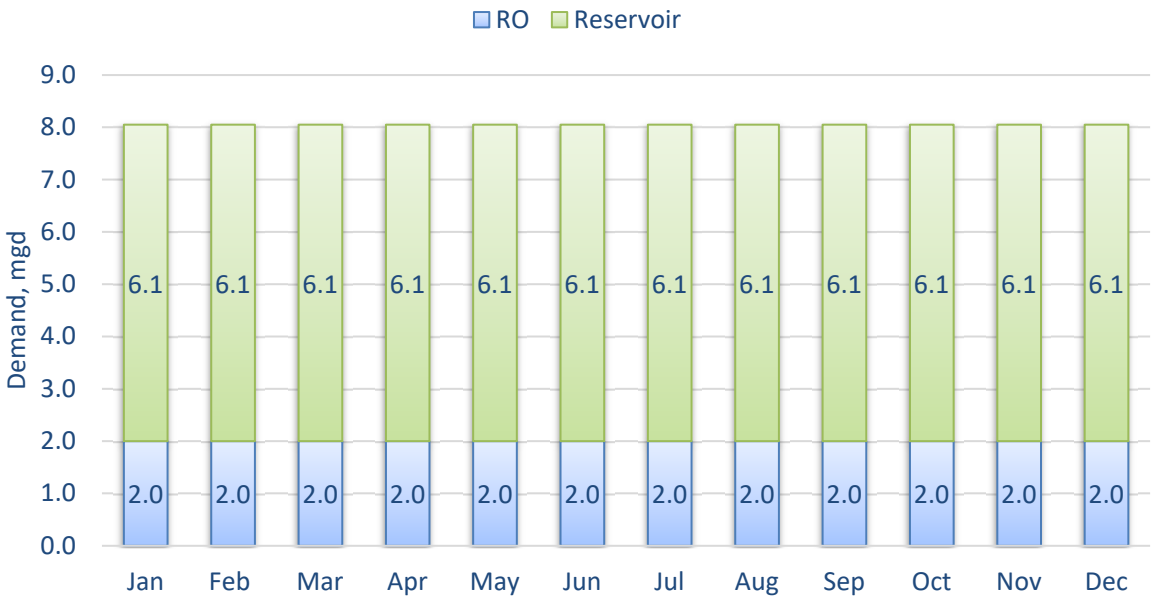


Figure 6 2020 Maximum Day Demand and Water Sources in Blocks 2 and 3 of MFL

3.6.6 2040 Scenario 1 – Monthly Average Demands with No MFL Restrictions

This scenario used historical monthly peaking factors and the projected 2040 annual average demand of 6.59 mgd to determine how monthly demands might be met in 2040 without MFL restrictions. It was assumed that the RO facility would operate at an average of 2.0 mgd.

The results are displayed in Figure 7. This shows how monthly demands can be met in 2040 using the reservoir and the RO facility without the MFL.

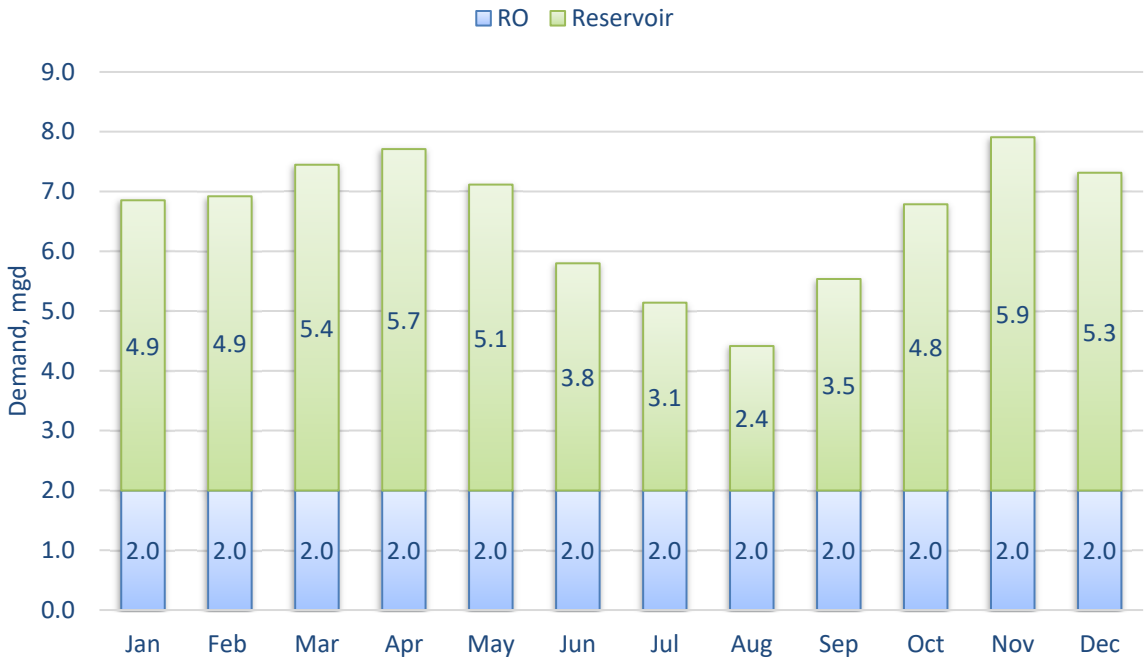


Figure 7 2040 Monthly Average Demands and Water Sources without MFL Restrictions

3.6.7 2040 Scenario 2 – Monthly Average Demands under MFL Block 1

This scenario used monthly peaking factors and the projected 2040 annual average demand of 6.59 mgd to determine how monthly demands might be met in 2040 under Block 1 conditions of the MFL. It was assumed that the RO facility will operate at a monthly average of 3.5 mgd during Block 1. If demands could not be met with an average of 3.5 mgd from the RO under Block 1 MFL conditions, then water was purchased from PRMRWSA to meet monthly demand.

The results are displayed in Figure 8. This shows that under Block 1 restrictions and 2040 monthly demands, the City would have needed to purchase water from PRMRWSA on some days in October. However, the City would be able to sell this water back to PRMRWSA to achieve an annual net purchase of zero in months where there is an MFL excess. Figure 8 shows the excess withdrawal amount allowed by the MFL during each month under Block 1 conditions, assuming the RO facility is operated at a monthly average capacity of 3.5 mgd.

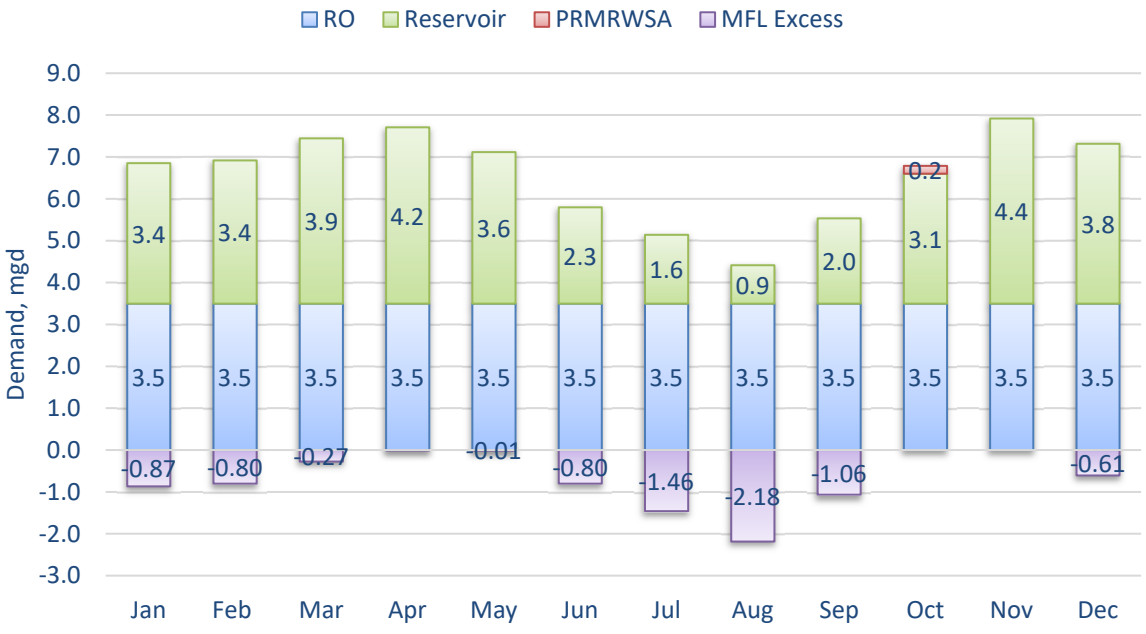


Figure 8 2040 Monthly Average Demands and Water Sources in Block 1 of MFL

3.6.8 2040 Scenario 3 – Monthly Average Demands under MFL Blocks 2 and 3

This scenario used monthly peaking factors and the projected 2040 annual average demand of 6.59 mgd to determine how monthly demands might be met in 2040 using allowable reservoir withdrawals amount under Block 2 and 3 conditions for each month in 2040. It was assumed that the RO facility would operate at an average of 2.0 mgd.

The results are displayed in Figure 9. This shows that monthly demands would be met in 2040 using the reservoir and 2.0 mgd from the RO facility. The results of this scenario are identical to the results of the scenario if the MFL did not exist in 2040.

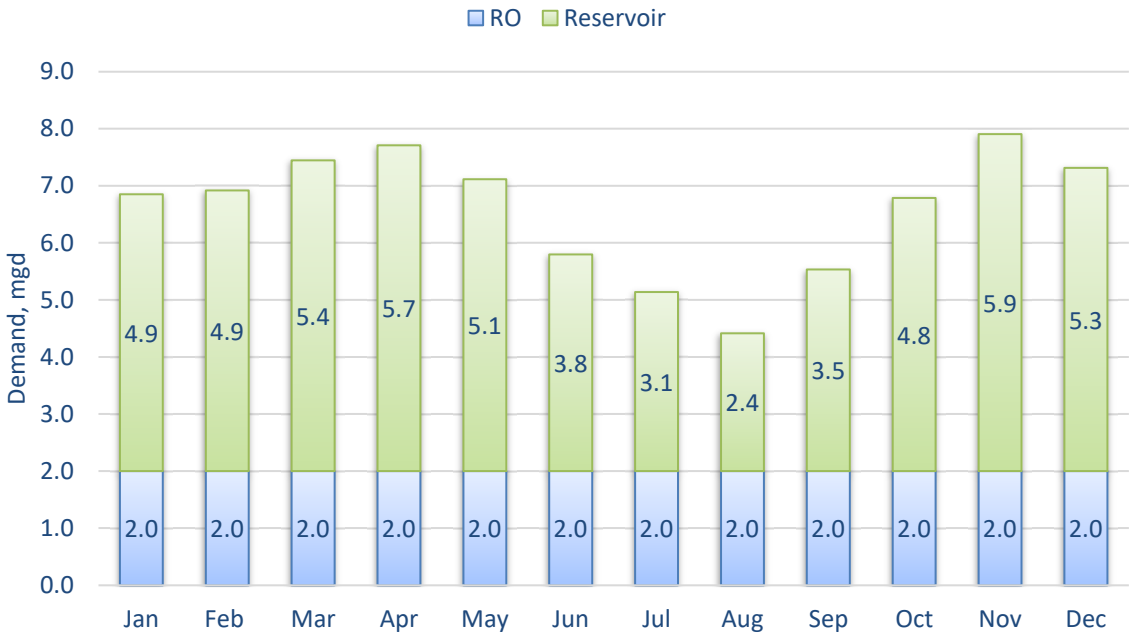


Figure 9 2040 Monthly Average Demands and Water Sources in Block 2 and 3 of MFL

3.6.9 2040 Scenario 4 – Maximum Day Demand under MFL Block 1

This scenario used a maximum day peaking factor of 1.5 and the projected 2040 annual average demand of 6.59 mgd to determine the projected maximum day demand in 2040 (9.89 mgd). This scenario assumed Block 1 conditions to show how the maximum day demand could be met under each month in 2040. Maximum day demand conditions may be experienced for two to three consecutive days, but maximum day events typically do not last more than three days. It was assumed that the RO facility would operate at 4.0 mgd. If demands could not be met with 4.0 mgd from the RO facility under Block 1 MFL conditions, then water was purchased from PRMRWSA to meet demand.

The results are displayed in Figure 10. This shows that under Block 1 conditions and a maximum day demand of 9.89 mgd, the City would need to purchase up to 2.8 mgd of water from PRMRWSA.

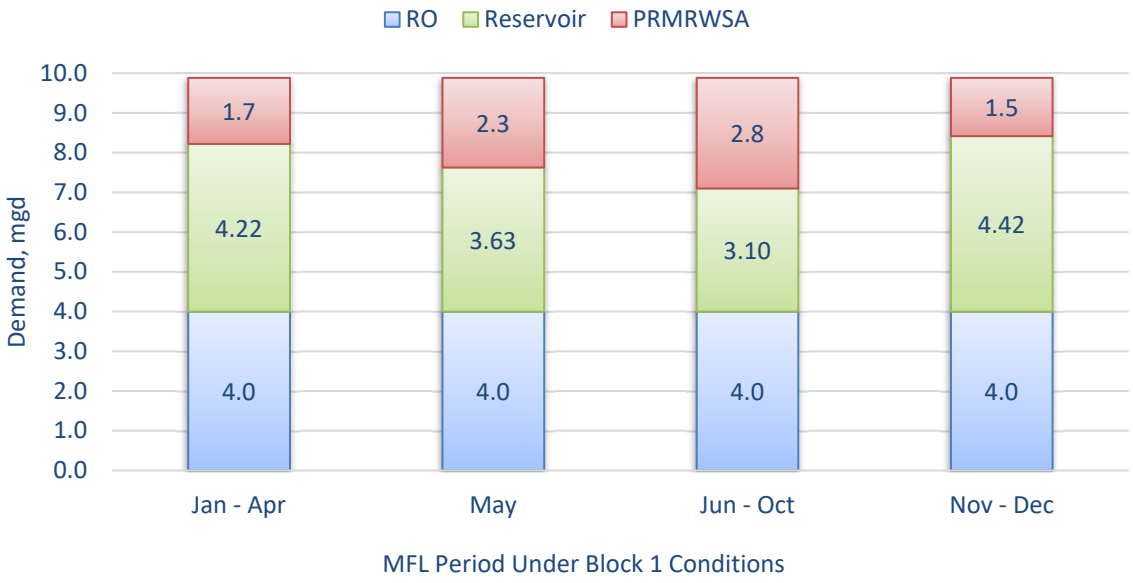


Figure 10 2040 Maximum Day Demand and Water Sources in Block 1 of MFL

3.6.10 2040 Scenario 5 – Maximum Day Demand under MFL Blocks 2 and 3

This scenario used a maximum day peaking factor of 1.5 and the projected 2040 annual average demand of 6.59 mgd to determine the max day demand in 2040 (9.89 mgd). It should be noted that a maximum day demand during Blocks 2 and 3 would not be typical, as these are wetter months with lower irrigation demands.

RO facility operation at 2.0 and 4.0 mgd were evaluated to show that the maximum day demand could be met in either case. The results are displayed in Figure 11. This shows that the City could operate the RO at 2.0 mgd and meet the remainder of a 2040 maximum day demand using about 8.0 mgd from the reservoir. Alternatively, if the City operated the RO facility at 4.0 mgd, they could meet the remainder of a 2040 maximum day demand using about 6.0 mgd from the reservoir.

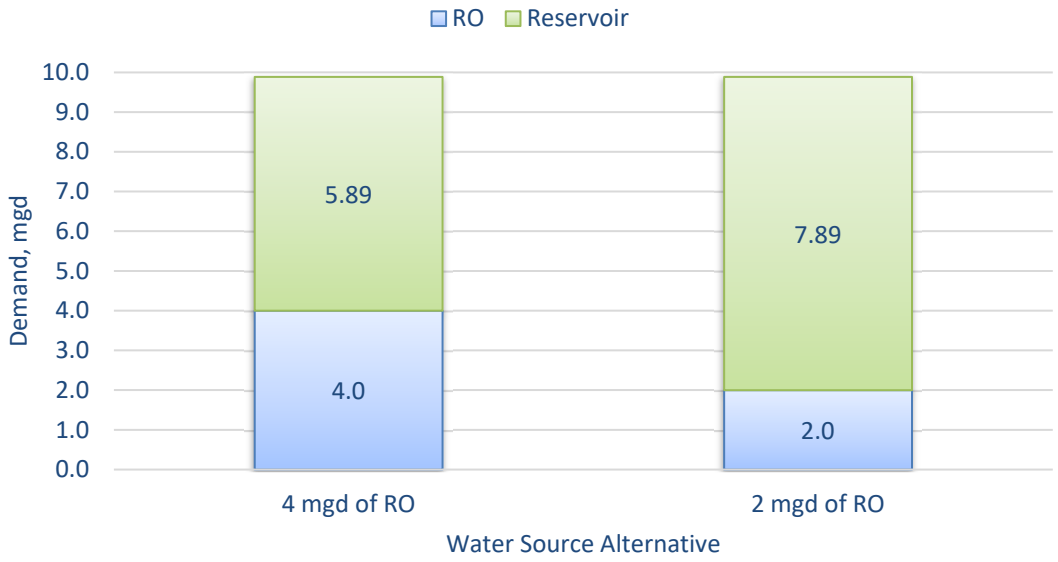


Figure 11 2040 Maximum Day Demand and Water Sources in Blocks 2 and 3 of MFL

3.6.11 Summary of City Water Supply Scenarios under 2020 and 2040 Demand Conditions

Various water supply scenarios were evaluated under monthly average and maximum day demand conditions under the proposed MFL restrictions. The MFL withdrawal limits during Blocks 2 and 3 do not impact the City's ability to withdraw water from the reservoir to meet projected demands through 2040. During Block 1, the MFL restrictions limit the reservoir withdrawals allowing the Shell Creek WTP to treat 3.10 to 4.42 mgd of water, depending on the month, limiting the production of this facility. During Block 1, the City would rely more heavily on the RO facility and would meet demands by purchasing a small amount of water from PRMRWSA during high demand days.

With the MFL in place in 2020, the City would have been able to meet monthly average demands using the reservoir and the RO facility operating at 2.0 mgd except for under Block 1 conditions in March, May, and July, during which the City would have had to increase the monthly average RO production to 2.4 mgd. Under the maximum day demand and Block 1 MFL restrictions, the City would have had to operate the RO at 4.0 mgd and purchase 1.6 mgd from PRMRWSA if the maximum day demand occurred between January and July.

Based on 2040 water demand projections, the City would be able to meet 2040 average monthly demands using 2.0 mgd of RO and the reservoir under Block 2 and 3 conditions. However, under Block 1 conditions, the City would need to operate the RO facility at an average of 3.5 mgd and may need to purchase up to 0.2 mgd (or increase RO) in the month of October. Any purchase could be sold back during wetter conditions or times of lower demands.

Under a maximum day demand in 2040, the City would need to operate the RO facility at 4.0 mgd and may need to purchase up to 2.8 mgd if the maximum day demand occurred between June and October under Block 1 restrictions. The reservoir withdrawals are restricted to treat between 3.10 mgd and 4.42 mgd during Block 1, limiting the production of the Shell Creek WTP during dry times.

The 2040 maximum day demand can be met under Block 2 and 3 conditions with the RO facility producing either 2.0 mgd or 4.0 mgd and still meet the remainder of demand using the reservoir. The City could operate the RO at 2.0 mgd and withdraw about 8.0 mgd from the reservoir with treatment at the Shell Creek WTP. Alternatively, if the City operated the RO facility at 4.0 mgd, they could meet the remainder of a 2040 maximum day demand using about 6.0 mgd from the reservoir with treatment the Shell Creek WTP.

3.7 Lower Shell Creek MFL Implementation Daily Analysis

Following discussions with the City, it was decided that more resolution was needed to understand how the MFL would affect daily operations now and in the future. Thus, Carollo created a spreadsheet model to evaluate the water supply reliability under the MFL conditions for historical and 2040 demands. This spreadsheet was designed to calculate allowable reservoir withdrawals upon implementation of the proposed MFL.

It is expected that the MFL will be implemented through a modification of the City's WUP, and the City will be responsible for tracking and reporting daily conditions to comply with and implement the MFL. Carollo created a spreadsheet model that could be used for implementation of the MFL. This model was also used to determine the City's daily water supply reliability based on five years of historical data (2016 – 2020) as well as daily reliability for 2040 demands using actual hydrologic conditions from 2020.

For the historical daily operational analysis, it was assumed that the proposed MFL was in place from January 1, 2016 to December 31, 2020. The same equation shown previously was used to calculate the inflow:

$$\text{Inflow}_{(\text{yesterday})} = \text{Reservoir Volume}_{(\text{today})} - \text{Reservoir Volume}_{(\text{yesterday})} + \text{Outflow}_{(\text{yesterday})} + \text{Withdrawal}_{(\text{yesterday})}$$

The reservoir volume and withdrawal data were provided by the City for 2016 to 2020. The outflow data was obtained from the USGS online database for gauge 02298202 for the same period. Gauge data were converted from cfs to mgd, and the daily inflow was calculated using the above equation. The monthly average agricultural flows shown in Table 2 were subtracted from the daily inflows to determine the block for each day. Based on each day's block and the conditions outlined in Table 1, the City's allowed reservoir withdrawal was calculated. This allowed withdrawal also accounted for a 9.1 percent treatment loss at the Shell Creek WTP as calculated from five years of historical data (2015 – 2019).

The City provided five years (2016 – 2020) of historical daily demand data that was used to determine what water supply source and what amount of water from each source would be required to meet both the MFL and the daily demand over the past five calendar years. Figure 12 shows the historical daily demand and the water sources that might have been used to meet both the MFL and the City's water demands. The RO facility was operated at 2.0 mgd or 4.0 mgd as needed to meet the daily demands.

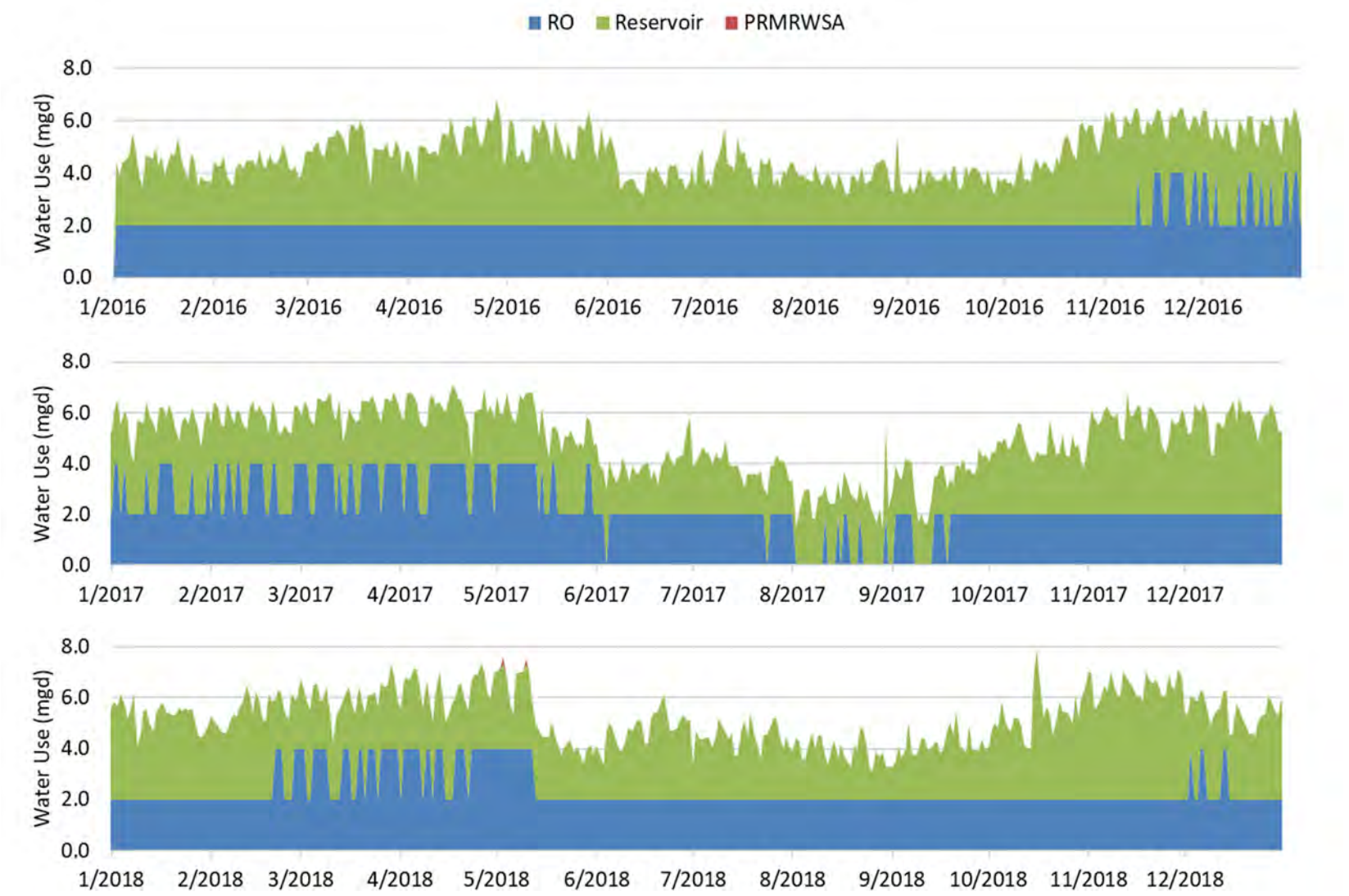


Figure 12 Historical (2016 – 2020) Daily Water Sources with MFL

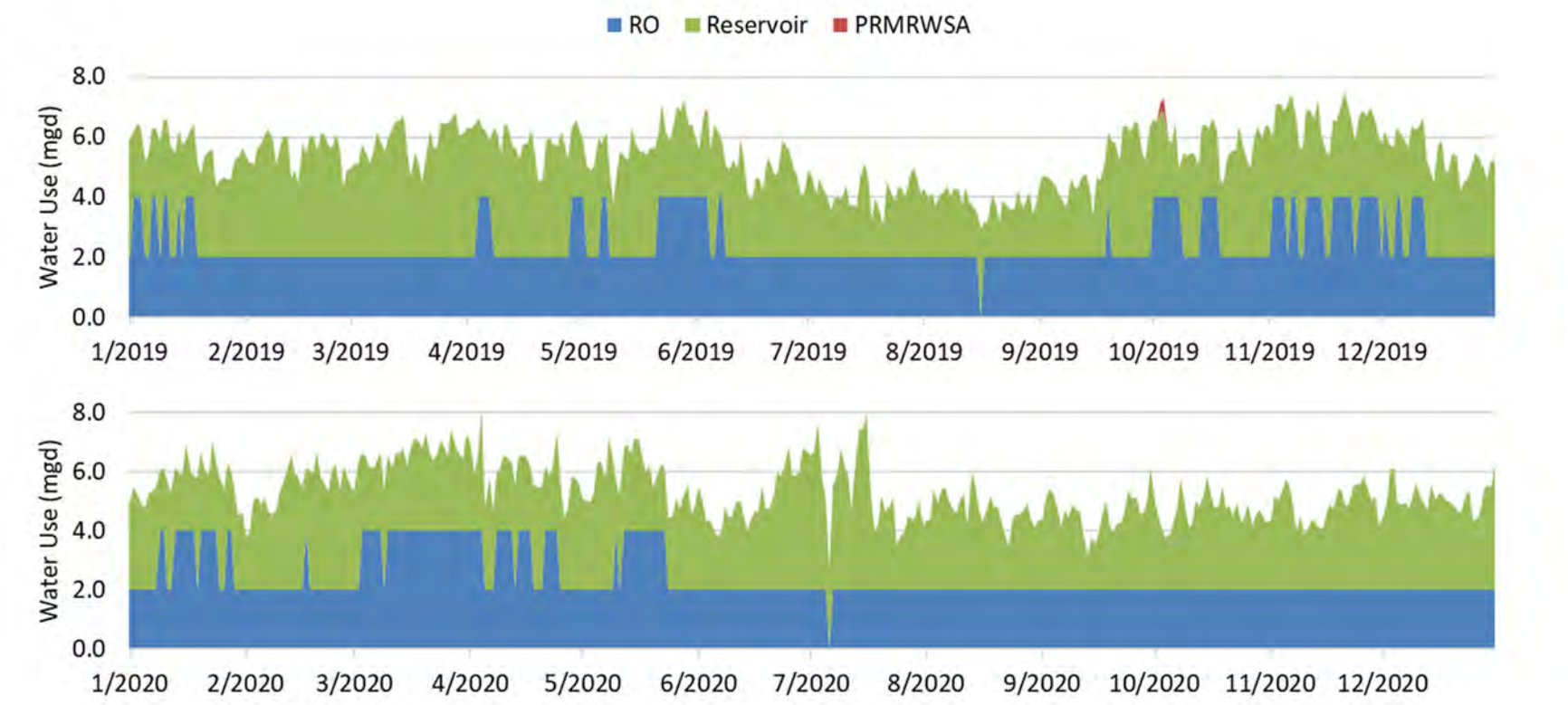


Figure 12 Historical (2016 – 2020) Water Sources with MFL (continued)

The water sources required to meet the MFL and the City's past five years of daily water demands as displayed in Figure 12 shows that, over the past five years, the City would have needed to purchase water from the PRMRWSA on 6 days for a total amount of 1.6 MG. A full summary of the days and amounts of water that would have been needed to be purchased over the past five years is summarized in Table 8.

Table 8 Historical Days Requiring Water Purchase from PRMRWSA under MFL Restrictions

Month and Year	Amount, MG
May 3, 2018	0.26
May 10, 2018	0.20
June 4, 2019	0.13
October 3, 2019	0.32
October 4, 2019	0.48
April 4, 2020	0.21

The same method was used to evaluate 2040 projected demands. The 2020 hydrologic conditions were used to determine how implementing the MFL might affect the City's daily water supply reliability in 2040. To do this, a daily peaking factor was calculated for each day in 2020 and applied to the 2040 average annual demand projection (6.59 mgd). The daily hydrologic conditions in 2020 for outflow, reservoir volume, and withdrawals were used for the 2040 scenario. It is speculated that the withdrawals in 2040 would be higher because the demands are higher; however, the amount was insignificant and there was no difference in operations when applying a higher withdrawal that was proportional to the increased demand.

The number of days in each block in 2020 was compared to the average number of days in each block for the past five years (2016 – 2020) as shown in Figure 13. This comparison shows that 2020 is a good selection for projecting hydrologic conditions into 2040. Although there were more days in Block 1 in the beginning of 2020, suggesting drier than average conditions, there were more days in Block 3 in the end of 2020, suggesting wetter than average conditions. June of 2020 was also wetter than average. Overall, 2020 was an average year in terms of dryness and wetness.

Similarly, the monthly average peaking factor for the past five years was calculated, and the average was compared to 2020 monthly peaking factors. This comparison is in Figure 14 and shows that the 2020 demands were lower than average in June, July, and August and higher than average in October, November, and December. Overall, 2020 was an average year in terms of potable water demands.

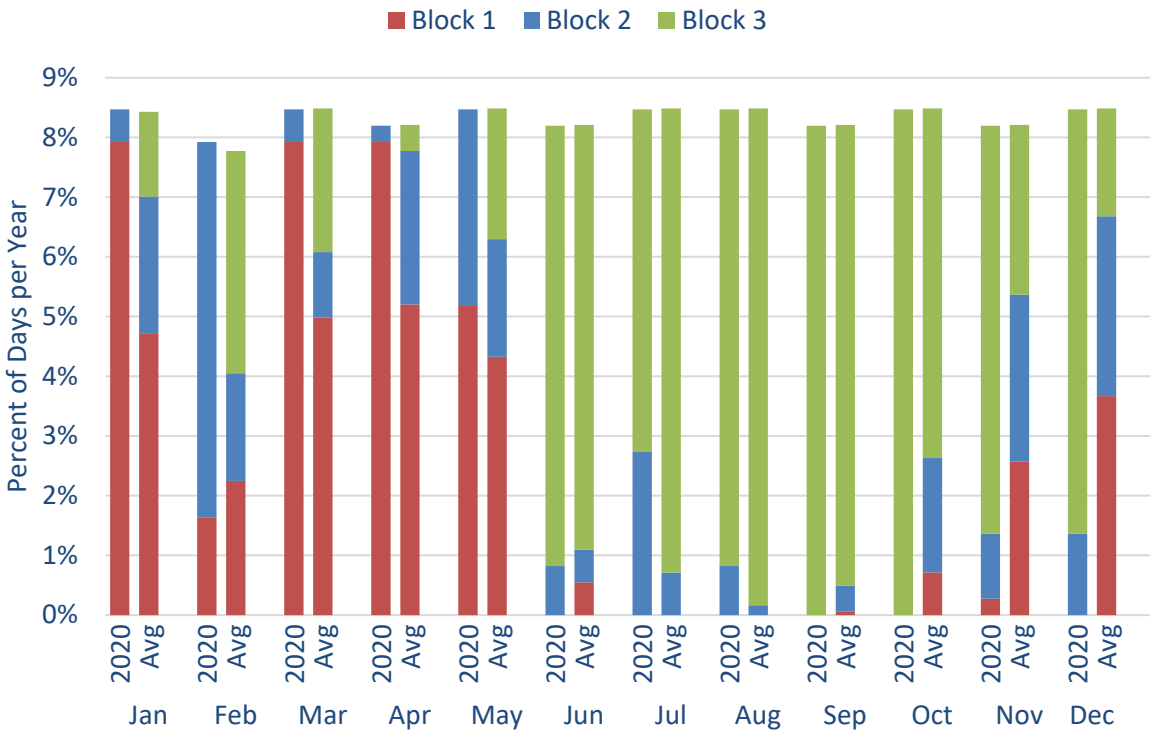


Figure 13 Comparison of Days in Blocks between 2020 and the Five Year Average

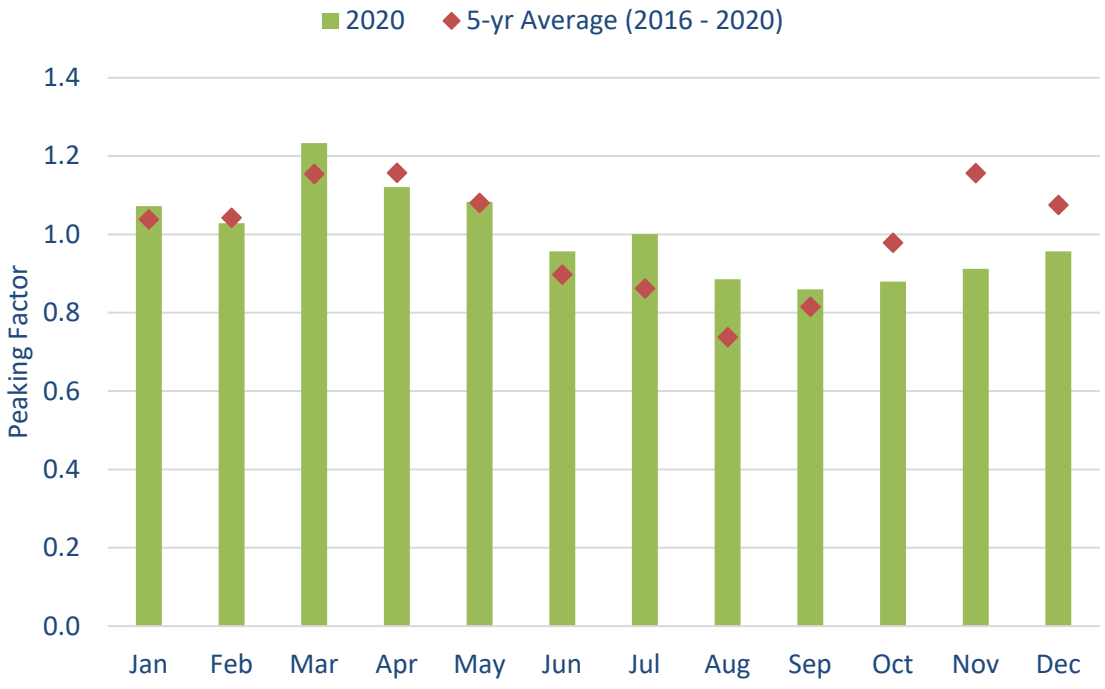


Figure 14 Comparison of Monthly Demand Peaking Factors between 2020 and the Five Year Average

Using 2020 as a model year and applying 2040 projected demands allowed Carollo to breakdown how the City would meet daily water demands in the future under implementation of the MFL rule. The following assumptions were applied in terms of facility operations:

1. The reservoir would be used for any demand under 3.0 mgd. This assumption is not affected by the MFL rule because the minimum amount allowed to be withdrawn under the MFL rule is 3.10 mgd.
2. The RO facility would operate at 2.0 mgd when demand is greater than 3.0 mgd.
3. The RO facility would increase to 4.0 mgd when needed so that demand is met using only the RO facility and reservoir withdrawals.
4. If the demand cannot be met using 4.0 mgd of RO and the allowed reservoir withdrawals, the remaining demand amount will come from purchasing water from PRMRWSA.

The City's estimated 2040 reliability based on 2020 hydrologic conditions is shown in Figure 15. Based on this analysis, the City would be able to meet 98.8 percent of 2040 demands using the reservoir (59.7 percent) and the RO facility (39.1 percent). The City would need to purchase 1.2 percent of their water from PRMRWSA, or 27.9 MG, to meet a total estimated demand of 2,412 MG for the whole year. The bulk of these purchases would be required during the drier season (March to May). Any purchases required in the beginning of the year could be sold back to PRMRWSA at the end of the year to have an annual net purchase amount of zero.

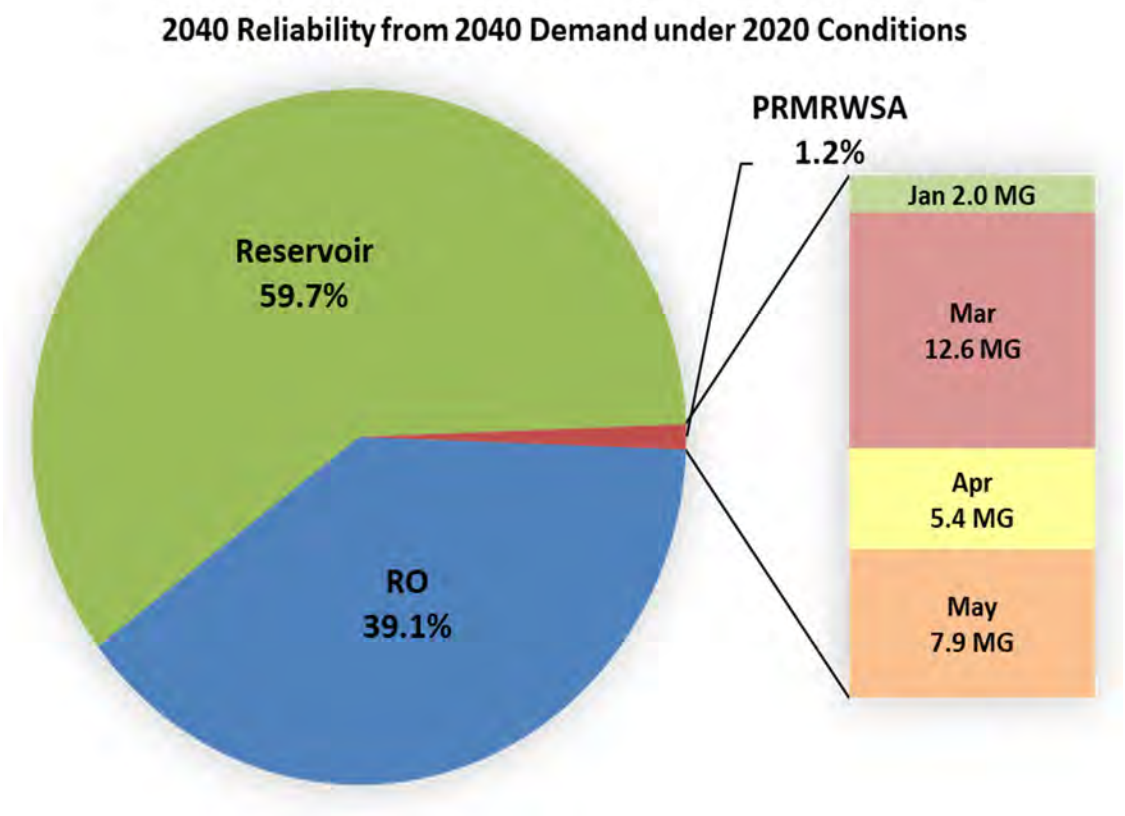


Figure 15 Estimated 2040 Reliability based on 2020 Hydrologic Conditions

Figure 16 shows the estimated 2040 water sources based on 2040 demands and 2020 hydrologic conditions with the MFL. However, this figure shows the water sources required for each day to capture the daily fluctuations in demands and operational requirements. This chart shows that water would need to be purchased from PRMRWSA during several days in the spring, particularly in March (since March 2020 was a drier than average month and had higher than average demands). These extra transfers to the City could be returned to PRMRWSA later in the year.

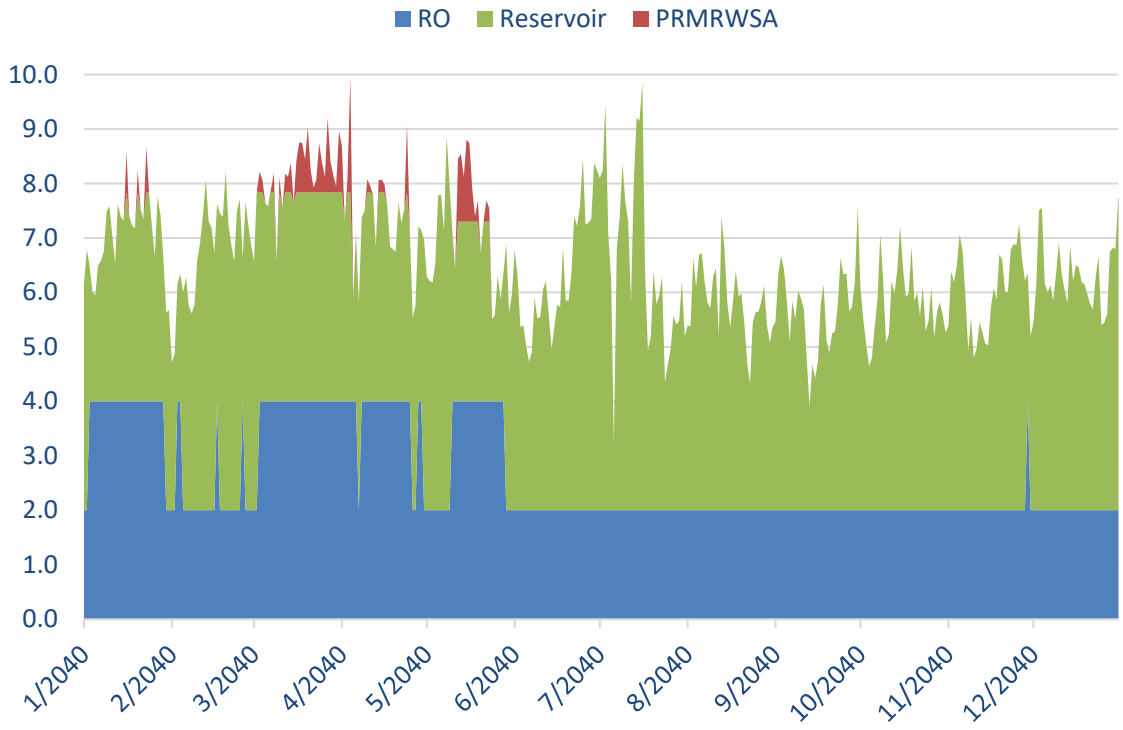


Figure 16 Estimated 2040 Water Sources based on 2040 Demands and 2020 Hydrologic Conditions with the MFL

Section 4

CONCLUSIONS

The Shell Creek Reservoir is the primary potable water source for Punta Gorda utility customers. MFLs that affect the Lower Shell Creek and the City's reservoir will restrict raw water withdrawal and impact system yields. In April 2019, the District presented to the City the proposed Lower Shell Creek MFL which flows from the Hendrickson Dam to Peace River. The City contracted with Carollo to determine how this proposed MFL would impact the City's operations and water supply reliability. The proposed MFL underwent a scientific peer review in which third party experts reviewed the proposed MFL and provided feedback to the District. This process lasted about three months. Following the peer review, Carollo recommended that the District use 2040 demand projections and monthly peaking factors based on the latest data.

The District worked with the City to develop an MFL for Lower Shell Creek that meets the environmental restoration and protection intent, but also allows the City to meet their water supply needs. The result was an MFL that was projected to be met 99.6 percent of the time for the next 20 years and a water supply reliability using RO and the reservoir of 98.8 percent in 2040. The remaining 1.2 percent of the City's water demand can be met through purchases from the PRMRWSA. An equivalent amount of water could be sold back to PRMRWSA when the City is not limited by the MFL (Blocks 2 and 3) to have a net zero purchase at the end of a year. The District plans to present the proposed Lower Shell Creek MFL to their Governing Board by the end of 2021.

The City should work with PRMRWSA to amend the Water Systems Interconnect and Water Transfer Contract to document that PRMRWSA will assist the City in meeting their water demands as needed under the MFL conditions.

From: Doug Leeper
To: jhecker@chnep.org
Cc: Chris Zajac; Randy Smith; Kristina Deak; Xinjian Chen; Yonas Ghile
Subject: SWFWMD MFLs and Reservations
Date: Wednesday, July 28, 2021 9:19:00 AM

Ms. Hecker:

- I'm writing to see if there is a need to follow-up on any questions you may still have regarding the Southwest Florida Water Management District's development of minimum flows and levels and water reservations that you inquired about during the recent Environmental Advisory Committee meeting.
- Also, I want to let you know that I would be happy to schedule a call or Teams meeting to discuss any questions you may have and/or to provide you with additional information on MFLs and reservations.

Thanks,

Doug Leeper
MFLs Program Lead
Southwest Florida Water Management District
2379 Broad Street
Brooksville, FL 34604
Doug.leeper@swfwmd.state.fl.us
1-800-423-1476, ext. 4272 or 352-796-7211, ext. 4272

From: Jennifer Hecker
To: Doug Leeper
Cc: Chris Zajac; Randy Smith; Kristina Deak; Xinjian Chen; Yonas Ghile
Subject: Re: [EXTERNAL] SWFWMD MFLs and Reservations
Date: Thursday, July 29, 2021 1:31:46 PM

[EXTERNAL SENDER] Use caution before opening.

Hi Mr. Leeper, thank you for following up. We do have a couple follow-up questions...

In our staff reading the Recommended Minimum Flows for the Lower Peace River Draft Report where it states "Minimum flows status assessments for the Lower Peace River were conducted using flow and water withdrawal records, block-specific and five-year and ten-year moving mean and median flow statistics, and review of water use permit conditions aligned with adopted minimum flows. The assessment results indicated that the recommended minimum flows for the Lower Peace River are being met and are also expected to be met over the next 20 years. Development of a recovery strategy or specific prevention strategy associated with adoption of the minimum flows for the Lower Peace River is, therefore, not necessary."

- Regarding the minimum flow status assessment and recovery strategy, are any exceedances of the MFL allowed due to the basis on averages and median flow statistics?
- If so, how many exceedances are allowed before it is determined that a recovery strategy is necessary?

We appreciate you providing additional information and look forward to the SWFWMD's MFL presentation at the upcoming CHNEP TAC meeting.
Thank you again, Jennifer

Jennifer Hecker
Executive Director
Coastal & Heartland National Estuary Partnership
326 West Marion Ave.
Punta Gorda, FL 33950
941-575-3392
Toll-free 866-835-5785
www.CHNEP.org

From: Doug Leeper <Doug.Leeper@swfwmd.state.fl.us>
Sent: Wednesday, July 28, 2021 9:19 AM
To: Jennifer Hecker
Cc: Chris Zajac; Randy Smith; Kristina Deak; Xinjian Chen; Yonas Ghile
Subject: [EXTERNAL] SWFWMD MFLs and Reservations

Ms. Hecker:

- I'm writing to see if there is a need to follow-up on any questions you may still have regarding the Southwest Florida Water Management District's development of minimum flows and

levels and water reservations that you inquired about during the recent Environmental Advisory Committee meeting.

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Thanks,

Doug Leeper
MFLs Program Lead
Southwest Florida Water Management District
2379 Broad Street
Brooksville, FL 34604
Doug.leeper@swfwmd.state.fl.us
1-800-423-1476, ext. 4272 or 352-796-7211, ext. 4272

From: Jennifer Hecker
To: Doug Leeper
Subject: RE: [EXTERNAL] SWFWMD MFLs and Reservations
Date: Tuesday, August 10, 2021 8:49:29 AM

[EXTERNAL SENDER] Use caution before opening.

Good morning, just following up to confirm if you received below and whether you had any additional information to share regarding the questions below? Thank you, Jennifer

---

From: Jennifer Hecker
Sent: Thursday, July 29, 2021 1:32 PM
To: Doug Leeper <Doug.Leeper@swfwmd.state.fl.us>
Cc: Chris Zajac <Chris.Zajac@swfwmd.state.fl.us>; Randy Smith <Randy.Smith@swfwmd.state.fl.us>; Kristina Deak <Kristina.Deak@swfwmd.state.fl.us>; Xinjian Chen <Xinjian.Chen@swfwmd.state.fl.us>; Yonas Ghile <Yonas.Ghile@swfwmd.state.fl.us>
Subject: Re: [EXTERNAL] SWFWMD MFLs and Reservations

Hi Mr. Leeper, thank you for following up. We do have a couple follow-up questions...

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Regarding the minimum flow status assessment and recovery strategy, are any exceedances of the MFL allowed due to the basis on averages and median flow statistics?

If so, how many exceedances are allowed before it is determined that a recovery strategy is necessary?

We appreciate you providing additional information and look forward to the SWFWMD's MFL presentation at the upcoming CHNEP TAC meeting.

Thank you again, Jennifer

Jennifer Hecker
Executive Director
Coastal & Heartland National Estuary Partnership
326 West Marion Ave.
Punta Gorda, FL 33950
941-575-3392
Toll-free 866-835-5785
www.CHNEP.org

From: Doug Leeper <Doug.Leeper@swfwmd.state.fl.us>

Sent: Wednesday, July 28, 2021 9:19 AM
To: Jennifer Hecker
Cc: Chris Zajac; Randy Smith; Kristina Deak; Xinjian Chen; Yonas Ghile
Subject: [EXTERNAL] SWFWMD MFLs and Reservations

Ms. Hecker:

- I'm writing to see if there is a need to follow-up on any questions you may still have regarding the Southwest Florida Water Management District's development of minimum flows and levels and water reservations that you inquired about during the recent Environmental Advisory Committee meeting.
- Also, I want to let you know that I would be happy to schedule a call or Teams meeting to discuss any questions you may have and/or to provide you with additional information on MFLs and reservations.

Thanks,
Doug Leeper
MFLs Program Lead
Southwest Florida Water Management District
2379 Broad Street
Brooksville, FL 34604
Doug.leeper@swfwmd.state.fl.us
1-800-423-1476, ext. 4272 or 352-796-7211, ext. 4272

From:	Chris Zajac
To:	Jennette Seachrist
Cc:	Randy Smith; Eric DeHaven; Adrienne E. Vining; Doug Leeper; Yonas Ghile; Dennis Ragosta
Subject:	FW: Lower Shell Creek MFL
Date:	Tuesday, August 10, 2021 9:20:04 AM
Attachments:	M - MFL comment memo to Chris Zajac 6-17-21.pdf chris zajac 8-10-21.pdf

Jennette,

I received the response below from the City of Punta Gorda.

Chris Zajac
Environmental Flows and Levels Manager
Natural Systems and Restoration Bureau
2379 Broad Street
Brooksville, FL 34604
(352) 796-7211, Ext. 4413
(352) 586-3776
Chris.Zajac@WaterMatters.org

From: Steve Adams <SAdams@cityofpuntagordafl.com>
Sent: Tuesday, August 10, 2021 9:00 AM
To: Chris Zajac <Chris.Zajac@swfwmd.state.fl.us>
Cc: Chuck Pavlos <CPavlos@cityofpuntagordafl.com>; Gregory B. Murray <GMurray@cityofpuntagordafl.com>
Subject: RE: Lower Shell Creek MFL

[EXTERNAL SENDER] Use caution before opening.
Hi Chris:

We have reviewed your recent response letter. The City's memo 6-17-21 requested a minimum water use of 4.5 MGD during Block 1. Please revise your letter to indicate water use by the City will be provided at 4.5 MGD during Block 1.

Steve Adams
Utilities Engineering Manager
Utilities

City of Punta Gorda
326 West Marion Avenue
Punta Gorda, Florida 33950
941-575-3325
www.CityofPuntaGordaFL.com

From: Chris Zajac [mailto:Chris.Zajac@swfwmd.state.fl.us]
Sent: Friday, August 06, 2021 9:19 AM
To: Steve Adams <SAdams@cityofpuntagordafl.com>
Cc: Chuck Pavlos <CPavlos@cityofpuntagordafl.com>; Laura Baumberger <LBaumberger@carollo.com>; Jennette Seachrist <Jennette.Seachrist@swfwmd.state.fl.us>; Randy Smith <Randy.Smith@swfwmd.state.fl.us>
Subject: [EXTERNAL] Lower Shell Creek MFL

MESSAGE FROM AN EXTERNAL SENDER: Please use caution when opening attachments, clicking links, or replying to this message.

Steve,

Just checking in to confirm that you received the District's response letter regarding the proposed minimum flows for Lower Shell Creek. I sent the response on July 28th via email and hopefully you've received a hard copy by now. We look forward to meeting with City staff to discuss the next steps. Can you provide some dates/times that City staff, including the City Manager, would be available to meet with us?

Chris Zajac
Environmental Flows and Levels Manager
Natural Systems and Restoration Bureau
2379 Broad Street
Brooksville, FL 34604
(352) 796-7211, Ext. 4413
(352) 586-3776
Chris.Zajac@WaterMatters.org

CITY OF PUNTA GORDA
UTILITIES DEPARTMENT

326 West Marion Avenue
Punta Gorda, Florida 33950
941-575-3339

TO: Chris Zajac
Environmental Flows and Assessments Manager
FROM: Steve Adams
DATE: June 17, 2021
SUBJECT MFL Summary Report

Laura Bamberger P.E. with Carollo Engineers has completed a MFL Summary Report for the City. The Summary Report demonstrates how the proposed Shell Creek MFL will impact the City's ability to meet water supply needs during a planning period of 2020 to 2040.

Utility staff is concerned that the proposed MFL strategy reduces the reliability of water supply the City recently accomplished. Utility staff is concerned the proposed MFL strategy will reduce the capacity of the City WTP facilities during Block 1, and the reduced capacity will NOT meet water supply needs of the planning period. Utility staff is concerned the District is seeking for the City to choose to DEPEND upon water supply from the Authority, instead of retaining 100% reliability of self-supply from City owned water supply facilities.

The Summary Report findings show, with the proposed MFL in place;

2020 SCENARIO
The City would have been able to meet monthly average demands of 2020
The City would NOT have been able to meet peak day demand in Block 1 2020

2040 SCENARIO
The City would NOT be able to meet monthly average demands of 2040 in Block 1
The City would NOT be able to meet peak day demand in Block 1

Under scenarios where the City is unable to meet water supply needs with the City surface water WTP facilities and the City RO WTP facilities, the City would be dependent upon water supply from the Authority.

Prior to scheduling the Draft MFL presentation to City Council, Utility staff is recommending the following approach:

1. Change the MLF to 4.5 mgd during Block 1. The surface water treatment process has a 10% treatment loss. A 4.5 mgd flow from Shell Creek will provide 4.0 mgd of finish water.
2. Change MFL compliance to average month water use
3. The City will obtain water supply from the Authority during Block1 when peak day demand exceeds 8.0 mgd, (4 mgd of surface water, plus 4 mgd of RO) A water transfer agreement with the Authority may be needed.
4. The City may seek to expand the RO from 4 mgd to 8 mgd during the 20 year planning period when needed.

We are providing the MFL Summary Report. Upon your review and consideration, please call or email to let us know the best approach for modifying the MFL strategy. Many thanks for your help.

Southwest Florida Water Management District

2379 Broad Street, Brooksville, Florida 34604-6899
(352) 796-7211 or 1-800-423-1476 (FL only)
WaterMatters.org

An Equal Opportunity Employer

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170 Century Boulevard
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Sarasota Office
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Sarasota, Florida 34240-9770
(941) 377-3722 or
1-800-320-3503 (FL only)

Tampa Office
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(813) 985-7481 or
1-800-836-0797 (FL only)

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William Hogarth
Pinellas
John Mitten
Hernando, Marion
Seth Weightman
Pasco
Michelle Williamson
Hillsborough

Brian J. Armstrong, P.G.
Executive Director

July 28, 2021

Mr. Steve Adams
Utilities Engineering Manager
City of Punta Gorda Utilities Department
326 W. Marion Avenue
Punta Gorda, FL 33950

Subject: Lower Shell Creek MFLs Letter and Summary Report

Dear Mr. Adams:

The Southwest Florida Water Management District (District) acknowledges receipt of your letter dated June 17, 2021, along with the report "Review of the Proposed Lower Shell Creek MFL" prepared by Carollo Engineers, Inc.

District staff has reviewed the report and the methods Carollo used to assess impacts of the District's proposed minimum flows (MFLs) for Lower Shell Creek on the City's peak day water-use demands. As part of their assessment, Carollo staff identified errors in the City's historical withdrawal data and shared that information with District staff on May 3, 2021. After correcting the historical withdrawal data, District staff updated the maximum allowable withdrawals from the reservoir during the low-flow Block 1 associated with the proposed MFLs as shown in the table below. These changes will slightly improve the City's water supply reliability and address some of the issues raised in your letter.

Previously proposed withdrawals			Updated withdrawals		
If adjusted flows on previous day is:		Maximum withdrawal is:	If adjusted flows on previous day is:		Maximum withdrawals
≤56 cfs	Jan - Apr	4.22 mgd	≤56 cfs	Jan - Apr	4.22 mgd
	May	3.63 mgd		May - Sep	4.05 mgd
	Jun - Oct	3.10 mgd		Oct	3.40 mgd
	Nov - Dec	4.42 mgd		Nov - Dec	4.42 mgd
>56 cfs and ≤137 cfs		23% of inflow	>56 cfs and ≤137 cfs		23% of inflow
>137 cfs		40% of inflow	>137 cfs		40% of inflow

Comments and recommendations from your letter are numbered and reproduced below, along with District responses.

2. *Change MFL compliance to average month water use*

   District response: Again, we note the MFLs must be met on a daily basis and have concerns that monthly based compliance evaluations will likely lead to violations of this requirement.

3. *The City will obtain water supply from the PRMRWSA during Block1 when peak day demand exceeds 8.0 mgd, (4 mgd of surface water, plus 4 mgd of RO). A water transfer agreement with the PRMRWSA may be needed.*

   District response: We agree. As indicated in the Carollo report, Blocks 2 and 3 flow conditions account for more than 70% of the year and this will allow the city to export water back to the PRMRWSA with net zero transactional costs on an annual basis.

4. *The City may seek to expand the RO from 4 mgd to 8 mgd during the 20-year planning period when needed.*

   District response: We do not currently see the need for an additional 4 mgd expansion of the RO facility to meet the 2040 projected water demands.

In summary, Carollo concluded that the District developed recommended minimum flows for Lower Shell Creek that protect the environmental resources, but also allow the City to meet its water supply needs. Carollo's report indicates that the reservoir and the RO facilities would allow the City to meet 98.8% percent of its 2040 demands and the remaining 1.2% can be met through purchases from PRMRWSA. The District agrees with these findings.

With updates made to the potentially allowable maximum withdrawals during Block 1, the 2020 monthly average and peak day demand and the 2040 monthly average demand will be met with the use of surface water and the RO facility. Potential surface water withdrawals during Block 1 have been optimized and withdrawals above the specified thresholds would lead to violation of the proposed MFLs and could result in unnecessary environmental impacts. The City should use the interconnect pipeline to meet the peak day demand of 9.89 mgd during Block 1.

The District would like to have a meeting with Utility staff and the City Manager prior to presenting the proposed MFLs to the City Council and the District's Governing Board. I look forward to hearing from you regarding our request.

Sincerely,

Chris Zajac
Section Manager
Environmental Flows and Levels Section
Natural Systems and Restoration Bureau

CZ:jlo

AGENDA

Connect Remotely via WebEx
https://puntagorda.webex.com/puntagorda/j.php?MTID=mcff3e99f2facb070491bf619fbfd5c3a
Meeting ID/Access Code: 182 669 9917
Passcode: X3TwtXRmZ87
Call in Number: 1-650-479-3208 (Use **Access Code:** 182 669 9917)

1. Call to Order and Introductions — Devon Moore, Co-Chair
2. Agenda Additions or Deletions — Devon Moore, Co-Chair
3. Public Comment on Agenda Items — Devon Moore, Co-Chair
4. Technical Advisory Committee April 15, 2021 Meeting Minutes — Devon Moore, Co-Chair
5. CHNEP Update — Jennifer Hecker, CHNEP
6. 2020 Seagrass Mapping Results for Charlotte Harbor Estuaries — Chris J. Anastasiou, PhD, Southwest Florida Water Management District
7. Mesocosm and field studies of tape grass (*Vallisneria americana*) capacity to sequester nutrients and suppress algal growth — James Douglass, PhD, Associate Professor of Marine Science in the Water School at Florida Gulf Coast University
8. Recommended minimum flows for Lower Shell Creek — Yonas Ghile, PhD, PH, Southwest Florida Water Management District
9. 2021 Red Tide Event in Upper Charlotte Harbor Discussion — Sarina Weiss, CHNEP
10. Enhancing Coastal Resilience through Nature-based Risk Reduction - Examining a Mangrove Insurance Option — Laura Geselbracht, The Nature Conservancy
11. CHNEP Technical Projects Updates — Nicole Iadevaia, CHNEP
12. TAC Membership Project Updates — Devon Moore, Co-Chair
13. Public Comment — Devon Moore, Co-Chair
14. Future Meeting's Topics, Location and Date — Devon Moore, Co-Chair
    Upcoming Dates for 2021 and 2022: 12/2/21, 4/14/22, 8/11/22, 12/1/22
15. Adjourn — Devon Moore, Co-Chair

1. **CALL TO ORDER AND INTRODUCTIONS**

   After TAC Co-Chair calls meeting to order, members will introduce themselves.

2. **AGENDA ADDITIONS OR DELETIONS**

3. **PUBLIC COMMENT ON AGENDA ITEMS**

   Each participating member of the public is afforded up to 3 minutes total to speak on agenda topics only at this point in the meeting.

4. **TECHNICAL ADVISORY COMMITTEE APRIL 15, 2021 MEETING MINUTES**

   Recommendation: Approval of the minutes from April 15th, 2021 meeting.
   Attachment: Draft April 15th, 2021 TAC Meeting Minutes.

5. **CHNEP UPDATE**

   The following represents program activity highlights since the beginning of the last Management Conference cycle to the beginning of this one.

   Program administration

   - Hired Research Specialist Sarina Weiss. Sarina has a BS from University of Florida in Wildlife Ecology and Conservation, and had previous been serving as a Conservation Associate intern to the CHNEP.
   - Hired Public Outreach Specialist hired Sophia Brown. Sophia has a BS from Florida Gulf Coast University (FGCU) in Biology, and had previous been serving as a Conservation Associate intern to the CHNEP.
   - Finalized a formal Interlocal Agreement with University of Florida, to begin partnership work in the CHNEP area between the CHNEP and UF's Center for Coastal Solutions.
   - Formally joined Growing Climate Solutions, a regional climate initiative of local organizations working to build climate awareness in Southwest Florida to advance climate solutions.

   CHNEP financial contributions

   - Sent customized letters and information packets to City & County partners who contribute to the CHNEP on April 1st, providing an overview of what value & projects CHNEP provides to their areas. This is sent during the spring budgeting season for upcoming FY22 CHNEP work plan and budget with actual invoice letters being sent at beginning of the FY22 CHNEP fiscal year in October.
   - Received $787 in small individual private donations from private citizens since last cycle.

   Grants submitted and/or awarded

   - Received 3 Conservation grant applications that have been selected for reimbursement once the project is complete and deliverables reviewed.
   - Received two proposals which were reviewed by staff in May from the Call for Project Proposals for CHNEP FY22 Funding sent out in April.
   - Submitted a grant application to Fish Florida for 250 fishing poles that will be used at the CHNEP's sustainable fishing clinics in June 2021.
   - Updated the conservation grant page of the website to include the upcoming FY22 application (deadline of August 1st for an October 1 award notice if the project is selected.)
   - Wrote a Letter of support for Charlotte County applying for a grant for septic to sewer conversion project.

Grant progress reports submitted

- Mid-year progress report submitted to the EPA that reports on the period of October 2020-March 2021 in April 2021.
- Q2 Progress Report submitted to FDEP for NRDA grant for the LCHFI project in April 2021
- Q2 Progress Report submitted to FDEP for salary agreement with CHNEP
- SWFWMD Q2 report for FY 19, FY20 & FY21 was submitted April 2021

Other Finance/Admin Items

- Worked with SFWMD to receive funding for additional tasks of the South Lee County Watershed Initiative (SLCWI), as well as to get set up recurrent annual funding for implementation of SLCWI and the Lower Charlotte Harbor Flatwoods Initiative hydrological restoration projects.
- Amended FY21 budget was updated and approved by the Policy Committee.
- Finalized FY22 budget, which was approved by the Policy Committee.
- Submitted EPA FY22 grant funding application, which includes the FY22 budget approved by Policy Committee as well as other forms/metrics required by the EPA.
- Completed and submitted budget narratives and performance measures to the City of Punta Gorda that details CHNEP's plan for upcoming FY 2022.
- Drafted and worked with Charlotte County staff for the successful passage of a resolution to support CHNEP request to SFWMD for recurrent dedicated funding support to implement hydrological restoration associated with the Lower Charlotte Harbor Flatwoods Watershed Initiative.
- Submitted letters to the SWFWMD to define the TBD projects that are outlined in the FY19 & FY21 agreements. The letters are under review by the SWFWMD staff and if approved they will change the TBD project to the Myakka Headwaters Pilot Project.
- Began work on the leveraging portion of NEPORT for projects that have occurred in the CHNEP area.

Regional and multi-jurisdictional organizational meetings CHNEP staff participated in

- Hosted CHNEP Spring Management Committee Mtgs. (4)
- Co-Hosted Florida Macroalgae Workshop
- Hosted 2021 Southwest Florida Climate Summit
- ANEP Board Meeting. (2)
- ANEP Executive Committee Meeting
- ANEP External Affairs Committee Meeting (2)
- Charlotte Harbor Comprehensive Coastal Observing Network Meeting
- Charlotte Harbor Flatwoods Initiative
- Charlotte Harbor Flatwoods Hydrological Modeling Meeting
- Cyanobacteria Rapid Response Pilot Project Meeting
- Pine Island Flatwoods Restoration Scoping Meeting (Lee Co, and FWC)
- South Lee County Hydrological Modeling Project Meeting (3)
- South Lee County Hydrological Modeling Project Stakeholders Meeting
- CHNEP Water Atlas Mtg. with USF and UF (3)
- CHNEP Water Atlas Re-Design Meeting
- CHNEP Water Atlas Meeting
- CHNEP Water Atlas New Features UF
- CBDG MIT Funding: Rebuild Florida Mitigation General Infrastructure Program
- Coastal Center for Climate Solutions Meeting
- DeSoto BOCC Workshop Mosaic Water Quality Monitoring
- EJ/DEI Planning Mtg. and Workgroup Mtg. (2)

- EPA Tech Transfer Meeting: Applying "One Water" Principles, State Coastal Zone CZM/NEP Nexus, and NEPs Making a National Impact on Nutrient Pollution (3)
- EPA Webinar: Accounting for the Influence of Climate Change on Nutrient Management Approaches (3)
- Barrier Island Parks Society Res Tide Forum
- Estero Bay Agency for Bay Management Meeting
- FDEP Blue Green Algae Task Force Meeting
- Florida NEP/CZMP Coordination
- GOMA Workshop: Climate Change Adaptation
- Gulf of Mexico Alliance: Building Partnerships for a Healthier Gulf
- Gulf of Mexico Ecosystem Service Logic Models and Socio-Economic Indicators (GEMS)
- Myakka River Management Coordinating Council Meeting
- Science and Environment Council Meeting
- SOCAN (Coastal Acidification Network) Group Meeting
- SFWMD Governing Board Workshop Lake Okeechobee System Operating Manual
- 2020 Charlotte Harbor & Lemon Bay Seagrass Map Results Meeting with Water Management District, Charlotte County, and Sea Grant (3)
- Southwest Florida Seagrass Working Group Meeting
- South Florida Ecosystem Restoration Task Force Working Group Meeting
- Southwest Florida Water Management District Working Group Meeting
- Chaired the Southwest Florida Water Management District Environmental Advisory Committee Meeting
- Congressman Greg Steube and staff, Congressman Scott Franklin's staff, and Senator Marco Rubio's staff
- Charlotte County Water Quality Manager
- SFWMD Exec. Director

CHNEP staff presentations

- Presented to the Macroalgae Workshop regarding Charlotte Harbor area estuaries' macroalgae and seagrass data, and led facilitation of Charlotte Harbor area estuaries breakout session. Also, participated in Workshop debrief to draft Workshop Report.
- Presented at the Greater Everglades Ecosystem Restoration Science Conference (GEER) on "Uniting partners and resources to protect Central and Southwest Florida's water, wildlife, and habitat: a Habitat Restoration Needs Plan for the Coastal & Heartland National Estuary Partnership Area"
- Presented at US EPA: 2021 NEP Workshop Session 1: Environmental Justice & Climate Change on Environmental Equity Initiatives in the CHNEP area as well as guided a breakout room discussion.
- Presented at the 2021 Southwest Florida Climate Summit on "Habitat Shifts and Migration in Response to Climate Change in Our Region" and "Regional Climate Change Vulnerability Assessment"
- Prepared Presentation for the Florida Snook Symposium on Water Quality and Status in CHNEP Region
- Presented to Environmental Discussion Group of Manatee County on work of CHNEP
- Presented to the Charlotte County Board of County Commission on Seagrass Status and Trends
- Presented to Lower Charlotte Harbor Flatwoods Initiative on Seagrass Status and Trends

CHNEP publications and external outreach events

- Co-authored scientific journal article "Developing a Water Quality Assessment Framework for Southwest Florida Tidal Creeks", which was published in the July 2021 *Estuaries and Coasts*

- Reached out to CHNEP Congressional offices, with Congressmen Steube, Soto and Buchanan signing onto Congressional NEP Appropriations sign-on letter.
- Created and sent out customized CHNEP Update video presentations to all State Senators in the CHNEP area.
- Mailed postcards to update contact information into our Constant Contact database, allowing our educational materials to reach a much larger audience than before.
- Held an educational booth at the Frostproof Earth Day Festival to reach our members in Polk County, where staff handed out over 50 educational packets to children attending.
- Launched the 2021 Nature Calendar Photo Contest, to be completed on August 1st.
- Planned and hosted the inaugural 2021 Southwest Florida Climate Summit. Summit proceedings, videos, Citizen Climate Change Action Guide of organizations and resources for participants can be found on CHNEP website linked above.
- Made a number of social media posts on variety of events including CHNEP volunteer events, World Ocean's Day and National Pollinator Week.
- Created Seagrass Fact Sheets for CHNEP estuaries including 2020 data gathered by partners.
- Draft, printed and mailed Harbor Happenings Spring/Summer 2021 Issue: A Changing Climate to members and partners.

CHNEP monthly volunteer events

- Following the Earth Echo Water Challenge virtual presentation that was hosted by CHNEP in March-participants received water testing kits for World Water Day to contribute to a global effort in water monitoring reporting. Additional test kits were given out to members of the public who completed the virtual training in April and reached out to follow up.
- Hosted an Earth Day Cleanup of Ponce de Leon Park with 43 attendees. Volunteers participated by cleaning up the park and by kayaking the local waterway to collect trash. We partnered with Keep Charlotte Beautiful for a productive day that collected over 100 lbs. in trash.
- Hosted a Florida Native Plantings seminar in collaboration with Charlotte Harbor Environmental Center and Florida Master Gardeners with 25 attendees.
- Hosted a citizen science training for the 'Eyes on Seagrass' project with over 25 attendees, which trained volunteers to engage in citizen science seagrass and macroalgae surveys of Charlotte Harbor and included a guest Sea Grant presentation.

Outreach analytics

- 6,314 subscribers for CHNEP educational mailings
- 2,431 unique visitors and 3,973 page visits to CHNEP website
- 106 new Facebook followers (1,602 followers)
- 49 new Facebook Likes (1,380 total likes)

Media/Press

6/14 Charlotte Harbor seagrass lost 3 decades of recovery in 2 years - WINK
5/21 Taking a holistic approach to water quality - Port Charlotte Sun
5/21 'We are ground zero': How sea level rise could impact SWFL roads - NBC2
4/21 We Preview the 2021 Southwest Florida Climate Summit - WGCU
4/21 County cleans up fill kill at Port Charlotte Beach Park - NBC2
4/21 2021 Southwest Florida Climate Summit announced - Caloosa Belle
4/21 Piney Point wastewater may fuel harmful algae bloom along Florida coast, experts say - USA Today

CHNEP Executive Director Jennifer Hecker will be presenting the CHNEP Update.

Recommendation: For discussion only.

Attachments: None

6. 2020 Seagrass Mapping Results for Charlotte Harbor Estuaries

The Southwest Florida Water Management District (SWFWMD) collects and interprets aerial photography for seagrass coverage estimates on a biennial basis in its service area. These data provide accurate and location-explicit estimates of seagrass coverage to track progress in achieving acreage goals, bay-wide and by major bay segments. The SWFWMD has been mapping seagrass habitat in the estuaries of west-central Florida, including Charlotte Harbor and Lemon Bay, for more than 30 years. The SWFWMD's efforts represent one of the most comprehensive seagrass mapping programs in the world.

This presentation, given by Dr. Chris Anastasiou, will go over methodology for collecting the aerial photography data, photointerpretation and QA/QC process for the results, and present the results for the Charlotte Harbor and Lemon Bay estuaries during the 2018-2020 period.

Recommendation: For discussion only.
Attachments: None

7. Mesocosm and field studies of tape grass (*Vallisneria americana*) capacity to sequester nutrients and suppress algal growth

Submerged aquatic plants are expected to improve water quality by sequestering nutrients and suppressing algal blooms, but we have lacked clear demonstrations and quantifications of this ecosystem service for tape grass, *Vallisneria americana*, in Southwest Florida. Such data could be useful in crediting seagrass restoration projects as nutrient removal projects in area Basin Management Action Plans, furthering incentivizing seagrass replanting and restoration. To learn more about the capacity of tape grass meadows to improve water quality, CHNEP funded FGCU to perform a factorial manipulation of nutrient addition and plant presence in mesocosm tanks, and followed it with a similar factorial manipulation in natural tape grass beds and unvegetated areas in the Caloosahatchee Estuary.

Nutrient addition had a very strong effect in the mesocosms, but water column nutrients and Chl a levels were lower, on average in treatments with tape grass. In the field, nutrient addition effects were weaker because it was already a nutrient-replete environment and because currents and mixing diluted the nutrient addition signal. A follow-up mesocosm experiment, in progress, is examining tape grass effects across a gradient of nutrient loading levels and indicates that the plant can counteract low levels of nutrient loading, but algae dominate with high and sustained nutrient loading. For tape grass restoration to have an appreciable effect on nutrient concentrations and algal blooms in the Caloosahatchee, it will require a high biomass and productivity of tape grass relative to the flux of nutrients through the system. Therefore, increasing tape grass coverage and density in concert with reducing nutrient loading will give the best results in improving water quality.

James Douglass, PhD, Associate Professor of Marine Science in the Water School at Florida Gulf Coast University, will be presenting on this research project.

Recommendation: For discussion only.
Attachments: Quantification of Submerged Aquatic Vegetation Restoration Benefits Project Fact Sheet

8. Recommended minimum flows for Lower Shell Creek

The Southwest Florida Water Management District SWFWMD) has been directed by the State Legislature to establish minimum flows and levels (MFL) for flowing watercourses within its boundary. As currently defined by statute, "the minimum flow for a given watercourse shall be the limit at which further withdrawals would be significantly harmful to the water resources or ecology of the area." Once adopted into the District's Water Levels and Rates of Flow Rules within the Florida Administrative Code, MFLs can be used for water supply planning, water use permitting and environmental resource regulation.

SWFWMD staff have developed new, proposed MFL for the Lower Peace River and proposed minimum flows for Lower Shell Creek. The recommended MFL for Lower Peace River became effective in the rule on April 12, 2021, and the recommended MFL flows for Lower Shell Creek is also scheduled for this year. Both systems were modeled together as one system and the MFLs report and appendices can be accessed at: https://www.swfwmd.state.fl.us/projects/mfl/documents-and-reports.

Dr. Yonas Ghile of the SWFWMD will be presenting the ongoing re-evaluation of minimum flows established for Lower Shell Creek.

Recommendation: For discussion only.
Attachments: Recommended Minimum Flows for the Lower Peace River and Proposed Minimum Flows Lower Shell Creek, Draft Report

9. 2021 Red Tide Event in Upper Charlotte Harbor Discussion

In April 2021, an unusually severe red tide occurrence occurred in upper reaches of Charlotte Harbor – including in the upper Harbor and into the tidal Peace River. Charlotte County analyzed the extent to which winds could have been a contributing factor in pushing this marine organism so far upstream into brackish waters. The CHNEP performed an analysis looking at the previous and current established Minimum Flows and Levels (MFLs), actual flow and residence time, and red tide in the Lower Peace River to determine if freshwater flow rates could have been a contributing factor.

Sarina Weiss, CHNEP Research Specialist, will be presenting the analysis and its results for discussion purposes.

Recommendation: For discussion only.
Attachments: None.

10. Enhancing Coastal Resilience through Nature-based Risk Reduction - Examining a Mangrove Insurance Option

The Nature Conservancy is exploring the potential use of mangrove insurance to enhance coastal resilience in Florida, Mexico, and the Caribbean. Following the encouraging results of a prefeasibility study completed last year and modeled on the reef insurance concept launched in Quintana Roo, Mexico, the ongoing full feasibility study will help to determine if, how, and where mangrove insurance could be employed as part of an overall strategy of using nature-based solutions like mangroves to bring sustainable coastal protection and improved natural habitats to Florida and the broader Gulf of Mexico/Caribbean region. TNC is now assessing where such programs make sense and what entities are most receptive to a potential product.

Laura Geselbracht, Senior Marine Scientist at The Nature Conservancy, will be presenting on this coastal resiliency innovation.

Recommendation: For discussion only.
Attachments: None.

11. CHNEP TECHNICAL PROJECTS UPDATES

In addition to the projects featured earlier on the agenda, several other research and/or restoration projects (or phases of projects) in the program area are currently underway with CHNEP FY19/FY20 and FY21 funds.

2019/2020 Projects:

- Gateway to Myakka River State Park – Marsh Restoration
- Warm Mineral Springs Creek Restoration
- Charlotte Harbor Flatwoods Hydrological Modeling Project
- South Lee County Watershed Initiative Hydrological Modeling Project
- Pine Island Flatwoods Restoration Project

Nicole Iadevaia, CHNEP Research & Outreach Manager, will be presenting updates of progress made on these projects since the last CHNEP Management Conference committee meeting cycle.

Recommendation: For discussion only.
Attachments: Updated Project Fact Sheets

11. TAC MEMBERSHIP UPDATES

Each member will have up to 5 minutes to update the Committee on their respective research, restoration, and/or public environmental education and engagement projects currently being completed to protect and restore the CHNEP program area. This time also serves as an opportunity for member to discuss topics of interest to the Committee members. TAC Co-Chair Devon Moore will be leading and facilitating this discussion.

12. PUBLIC COMMENT

Each participating member of the public is afforded up to 3 minutes total to speak at this point in the meeting.

13. FUTURE MEETING'S TOPICS, LOCATION AND DATE

The TAC meeting schedule for 2021/2022 is as follows; please mark these dates in your calendar:

2021
December 2nd 2021
2022
April 14th 2022
August 11th 2022
December 1st 2022

If you have ideas of new research and restoration topics and/or presenters (including those outside the CHNEP area if applicable to CHNEP CCMP efforts), please email CHNEP Research & Outreach Manager Nicole Iadevaia at niadevaia@chnep.org.

14. ADJOURN

SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

Recommended Minimum Flows for Lower Shell Creek

Coastal and Heartland National Estuary Partnership (CHNEP)

Yonas Ghile, Xinjian Chen, Douglas Leeper, Chris Anastasiou and Kristina Deak
Natural Systems & Restoration Bureau
August 12, 2021

1

SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

Planned Schedule

Major Activities	Schedule
Peer review of minimum flows report	March - June 2020
Stakeholder outreach	March 2020 - Present
Presentation to Environmental Advisory Committee	April 13, 2021
Presentation to Public Supply Advisory Committee	May 11, 2021
Presentation to CHNEP TAC	August 12, 2021
Public workshop	Summer 2021
Presentation to Governing Board – Final minimum flows report and rule	Fall 2021

2

2

SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

Minimum Flows

- The **minimum flow** for a given watercourse is the limit at which further withdrawals would be significantly harmful to the water resources or ecology of the area.

– Section 373.042, Florida Statutes

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SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

Lower Peace River and Lower Shell Creek

- Lower Peace River and Lower Shell Creek modeled together as one system
- Reevaluated Lower Peace River MFLs approved by Governing Board in December 2020 and became effective on April 12, 2021
- Minimum flows establishment for Lower Shell Creek scheduled for 2021



4

SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

Lower Shell Creek



5

SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

Developed Baseline Flows

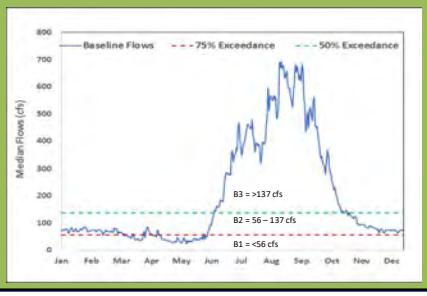
- Developed baseline flows (flows with no withdrawal effects) for the period from 1966 through 2018



6

SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

Developed Flow-Based Blocks



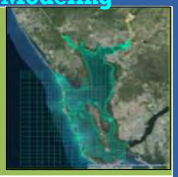
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SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

Enhanced Hydrodynamic Modeling

Current model (Chen 2020)

- Unstructured 3D hydrodynamic model
- Includes entire Charlotte Harbor
- New LiDAR and bathymetry data
- 21-month calibration/validation period
- 7.7-year simulation period (Jan 2007 - Aug 2014)



Previously used model (Chen 2010)

- Structured 3D hydrodynamic model
- Limited to Upper Charlotte Harbor
- 13-month calibration/validation period
- 3-year simulation period (2000 - 2002)



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SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

Enhanced Ecological Criteria and Considerations

Current Ecological Criteria and Considerations	Previous (2010 Evaluation) Ecological Criteria and Considerations
▪ Salinity-based habitats (≤2, ≤8, ≤10, ≤15, ≤20 psu) ▪ Habitats for 8 estuarine dependent taxa ▪ Water quality (dissolved oxygen, nutrients, chlorophyll, color)	▪ Salinity-based habitats (≤2, ≤8, ≤10, ≤15, ≤20 psu)

- **≤ 2 psu salinity volume** was the metric most sensitive to flow reductions
- Minimum flows developed based on preserving 85% of **≤2 psu salinity volume**

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SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

Recommended Minimum Flows for Lower Shell Creek

Flow-based Blocks	If Baseline Flow on Previous Day is:	Minimum Flow is:	Maximum Flow Reduction is
1	≤ 56 cfs	87% of flow	13% of flow
2	56 cfs to 137 cfs	77% of flow	23% of flow
3	>137 cfs	60% of flow	40% of flow

10

SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

Minimum Flows Status Assessment: Flows

Initial Assessment (2020)	Updated Assessment (2021)

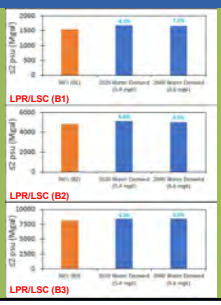
▪ Based on gaged flows (existing flows)
▪ Projected 2040 water demand = 6.3 mgd
▪ Alternative water supplies (reverse osmosis or Peace River pipeline interconnect) not considered in the analyses
▪ Minimum flows not met in Block 1
▪ Recovery/prevention strategy required
	▪ Based on baseline flows (corrected for Agricultural flows)
	▪ Projected 2040 water demand = 6.6 mgd
	▪ Use of reverse osmosis/Peace River pipeline interconnect considered in the analyses
	  ▪ 3.5 mgd in Block 1
	  ▪ 2 mgd in Blocks 2 and 3
	▪ Minimum flows met
	▪ Additional recovery/prevention strategy not required

11

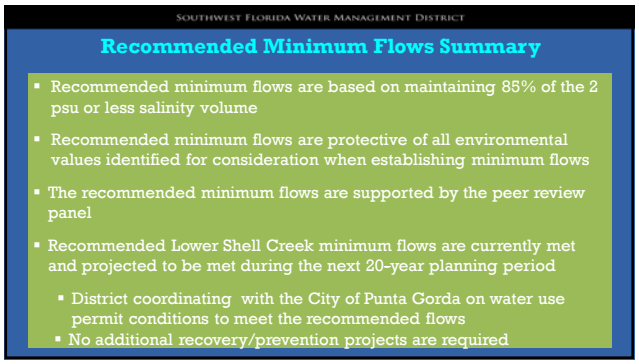
SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

Minimum Flows Status Assessment: Habitats

- Use of alternative water supplies (RO & Peace pipeline interconnect)
  - 3.5 mgd in Block 1
  - 2 mgd in Blocks 2 and 3
- Water demand scenarios
  - 2020 = 5.4 mgd
  - 2040 = 6.6 mgd



12


Southwest Florida Water Management District
Recommended Minimum Flows Summary
Recommended minimum flows are based on maintaining 85% of the 2 psu or less salinity volume
Recommended minimum flows are protective of all environmental values identified for consideration when establishing minimum flows
The recommended minimum flows are supported by the peer review panel
Recommended Lower Shell Creek minimum flows are currently met and projected to be met during the next 20-year planning period
District coordinating with the City of Punta Gorda on water use permit conditions to meet the recommended flows
No additional recovery/prevention projects are required

13


Southwest Florida Water Management District
Next Steps and Contact Information
Public workshop – Summer 2021
Presentation to Governing Board – Fall 2021
Minimum flows report and appendices:
https://www.swfwmd.state.fl.us/projects/mfl/documents-and-reports
Contact information:
Yonas Ghile
2379 Broad Street
Brooksville, FL 34604
(352) 796-7211, Ext. 4488
Yonas.Ghile@swfwmd.state.fl.us

14


Southwest Florida Water Management District
Thank you!

15

From: Jennifer Hecker
To: Yonas Ghile
Cc: Chris Zajac; Randy Smith; Doug Leeper; Nicole Iadevaia
Subject: CHNEP Presentation
Date: Thursday, August 12, 2021 6:00:51 PM
Attachments: image001.png

[EXTERNAL SENDER] Use caution before opening.

Hi Yonas,

Sarina conducted the analysis under the oversight and guidance of our senior staff, so I am going to ask that any further communications be directed to either Nicole or myself. Also, would like to table this if possible until Randy and I have a chance to discuss tomorrow afternoon. As I have expressed to Randy, we put it on the agenda for discussion purposes in terms of seeking additional insights and information from TAC members, as well as to stimulate thinking about the potential influence of flow and salinity as a possible contributing factor to red tide coming further into the Harbor and tidal River than previously – alongside the wind analysis that the County did. No action was taken and no technical comments were recommended, and we have happy to forward any additional information on the topic to the TAC if that is desired. The goal was to have the TAC consider whether there is any merit in having red tide salinities considered in future MFL updates or a recovery strategy eventually to supplement the withdrawal limits to maintaining salinities in the upper Harbor and River such as to discourage the potential future intrusion of red tide. We again greatly appreciated your presentation today, and look forward to learning more about this issue.

Thanks, Jennifer

From: Yonas Ghile [mailto:Yonas.Ghile@swfwmd.state.fl.us]
Sent: Thursday, August 12, 2021 5:28 PM
To: Sarina Weiss <SWeiss@chnep.org>; Nicole Iadevaia <NIadevaia@chnep.org>
Cc: Jennifer Hecker <JHecker@chnep.org>; Chris Zajac <Chris.Zajac@swfwmd.state.fl.us>; Randy Smith <Randy.Smith@swfwmd.state.fl.us>; Doug Leeper <Doug.Leeper@swfwmd.state.fl.us>
Subject: [EXTERNAL] RE: [EXTERNAL] CHNEP Presentation

Thank you Sarina

I didn't know that your presentation was on MFLs vs red tide, I could have stayed longer. Last week, Jennifer also asked Doug Leeper the same questions. Doug has been on leave and he will respond when he returns back. Can you please share the spreadsheet you used to calculate the analysis? I would like to check the data and formulas. Looking at your slides, it seems there is a misunderstanding in the MFLs interpretation.

Thank you

From: Sarina Weiss <SWeiss@chnep.org>
Sent: Thursday, August 12, 2021 3:09 PM

To: Yonas Ghile <Yonas.Ghile@swfwmd.state.fl.us>; Nicole Iadevaia <NIadevaia@chnep.org>
Subject: RE: [EXTERNAL] CHNEP Presentation

[EXTERNAL SENDER] Use caution before opening.
Hi Yonas,

Thank you for reaching out, I have attached my presentation to this email. I have also included our questions about MFLs below:

In our staff reading the Recommended Minimum Flows for the Lower Peace River Draft Report where it states "Minimum flows status assessments for the Lower Peace River were conducted using flow and water withdrawal records, block-specific and five-year and ten-year moving mean and median flow statistics, and review of water use permit conditions aligned with adopted minimum flows. The assessment results indicated that the recommended minimum flows for the Lower Peace River are being met and are also expected to be met over the next 20 years. Development of a recovery strategy or specific prevention strategy associated with adoption of the minimum flows for the Lower Peace River is, therefore, not necessary."
Regarding the minimum flow status assessment and recovery strategy, are any exceedances of the MFL allowed due to the basis on averages and median flow statistics?
If so, how many exceedances are allowed before it is determined that a recovery strategy is necessary?
We appreciate you providing additional information. Thank you again,

Sarina Weiss
Research Specialist
Coastal & Heartland National Estuary Partnership
326 West Marion Ave.
Punta Gorda, FL 33950
941-575-3385
www.CHNEP.org

From: Yonas Ghile [mailto:Yonas.Ghile@swfwmd.state.fl.us]
Sent: Thursday, August 12, 2021 2:33 PM
To: Nicole Iadevaia; Sarina Weiss
Subject: [EXTERNAL] CHNEP Presentation

Hi Sarina
Can you please send a copy of your presentation? I logged off the meeting after my presentation but I have learned from my manager that there were some questions about MFLs that we need to follow- up on.

Thank you

From:	Yonas Ghile
To:	Randy Smith
Cc:	Chris Zajac; Doug Leeper
Subject:	RE: [EXTERNAL] CHNEP Presentation
Date:	Friday, August 13, 2021 12:30:41 PM
Attachments:	SWeiss_Red Tide TAC Presentation_Final 8_11_21.pdf image001.png

Randy,

Attached please find Sarina's presentation

Thank you

From: Randy Smith <Randy.Smith@swfwmd.state.fl.us>
Sent: Friday, August 13, 2021 12:15 PM
To: Yonas Ghile <Yonas.Ghile@swfwmd.state.fl.us>
Subject: RE: [EXTERNAL] CHNEP Presentation

Yonas,

Can you send me the presentation Sarina sent you. Thanks

~~~~~~

Randy Smith, PMP
Bureau Chief
Natural Systems & Restoration Bureau
Southwest Florida Water Management District
(352) 796-7211 Ext. 4205
Email: randy.smith@watermatters.org
District website: www.watermatters.org

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Sent: Thursday, August 12, 2021 5:28 PM
To: Sarina Weiss <SWeiss@chnep.org>; Nicole Iadevaia <NIadevaia@chnep.org>
Cc: Jennifer Hecker <JHecker@chnep.org>; Chris Zajac <Chris.Zajac@swfwmd.state.fl.us>; Randy Smith <Randy.Smith@swfwmd.state.fl.us>; Doug Leeper <Doug.Leeper@swfwmd.state.fl.us>
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Thank you

9. 2021 RED TIDE EVENT IN UPPER CHARLOTTE HARBOR DISCUSSION

Sarina Weiss, CHNEP Research Specialist
Brandon Moody, Charlotte County Water Quality Manager

PURPOSE

To provide a briefing of the results of analyses conducted by CHNEP and Charlotte County to look at the previous and current Minimum Flows and Levels, actual flow and residence time, and red tide in the Lower Peace River to determine if freshwater flow rate could have been a contributing factor that influences an usually severe red tide even in upper Charlotte Harbor.

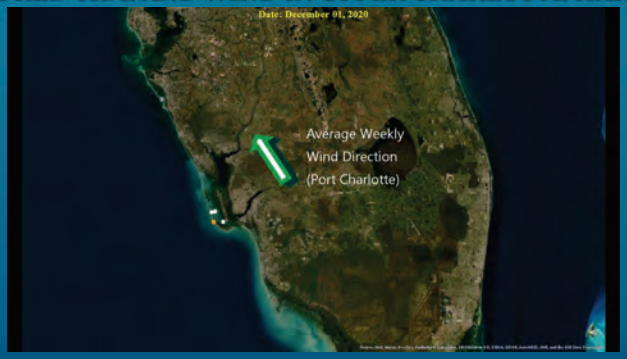


CCMP Connection:

This relates to Water Quality Improvement Action 5: Reduce harmful algae blooms (HAB); specifically Activity 5.1: Support HAB research and monitoring and measures to reduce their environmental, social and economic impacts through the ID and reduction of anthropogenic influences.

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2021 RED TIDE AND WIND IN UPPER CHARLOTTE HARBOR



Uniting Central and Southwest Florida to Protect Water and Wildlife

RED TIDE

Increasing Red Tide (*Karenia brevis*) in the Charlotte Harbor area since December 2020 according to NOAA Harmful Algal Blooms Observing System

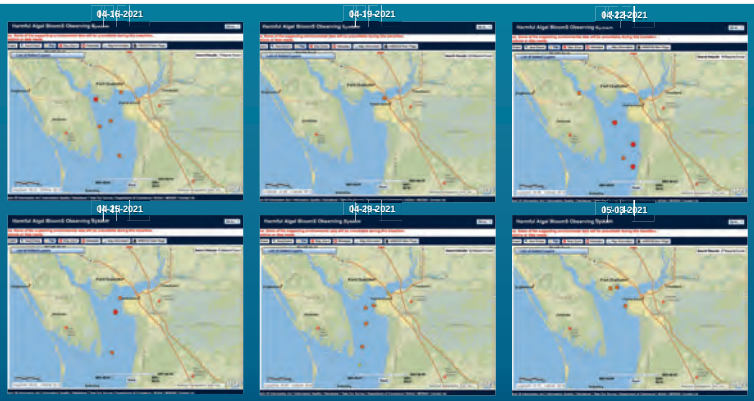
Description	K. brevis abundance	Possible effects (K. brevis only)
Very Low	> 1,000 - 10,000 cells/L	possible respiratory irritation; shellfish harvesting closures when cell abundance equals or exceeds 5,000 cells/L
Low	> 10,000 - 100,000 cells/L	respiratory irritation; shellfish harvesting closures; possible fish kills; probable detection of chlorophyll by satellites at upper range of cell abundance
Medium	> 100,000 - 1,000,000 cells/L	respiratory irritation; shellfish harvesting closures; probable fish kills; detection of surface chlorophyll by satellites
High	> 1,000,000 cells/L	as above, plus water discoloration

https://myfwc.com/research/redtide/statewide/



https://habsos.noaa.gov

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https://habsos.noaa.gov

RED TIDE ANALYSES

Recorded Red Tide data points (in Tidal Peace River and Upper Charlotte Harbor) from December 2020 – May 2021



➢ Multiplied counts by 100

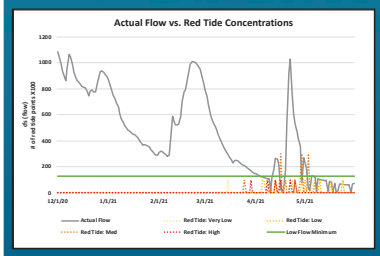
Red Tide in the Tidal Peace River and Upper Charlotte Harbor

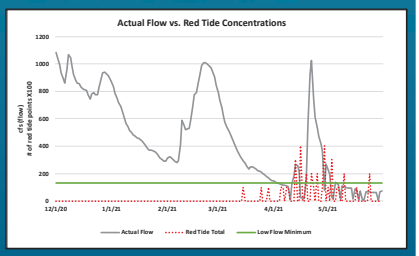
	Total	Very Low	Low	Med	High
4/1/21	0	0	0	0	0
4/2/21	0	0	0	0	0
4/3/21	0	0	0	0	0
4/4/21	0	0	0	0	0
4/5/21	100	0	100	0	0
4/6/21	100	0	100	0	0
4/7/21	0	0	0	0	0
4/8/21	100	0	0	0	100
4/9/21	100	0	0	100	0
4/10/21	0	0	0	0	0
4/11/21	0	0	0	0	0
4/12/21	0	0	0	0	0
4/13/21	300	0	100	100	100
4/14/21	0	0	0	0	0
4/15/21	0	0	0	0	0
4/16/21	400	0	0	300	100
4/17/21	0	0	0	0	0
4/18/21	0	0	0	0	0
4/19/21	200	100	0	100	0
4/20/21	0	0	0	0	0
4/21/21	0	0	0	0	0
4/22/21	200	0	100	0	100
4/23/21	100	0	100	0	0
4/24/21	0	0	0	0	0
4/25/21	200	0	0	100	100
4/26/21	0	0	0	0	0
4/27/21	0	0	0	0	0
4/28/21	100	0	0	100	0
4/29/21	400	0	100	300	0
4/30/21	0	0	0	0	0

https://habsos.noaa.gov

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ACTUAL FLOW VS. RED TIDE

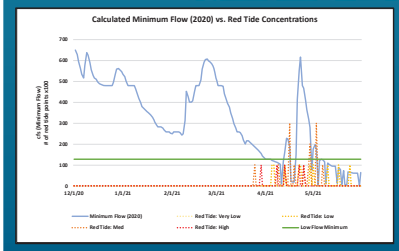


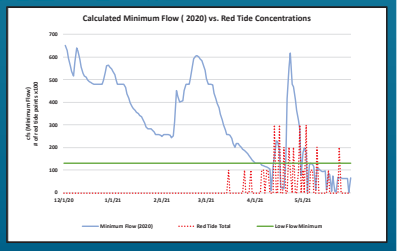


USGS Surface-Water Daily Data for the Nation (https://waterdata.usgs.gov/nwis/dv) https://habsos.noaa.gov

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CALCULATED MINIMUM FLOW (2020) VS. RED TIDE

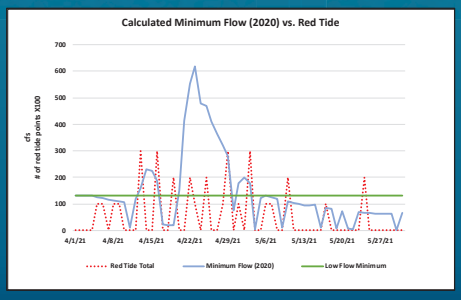




Southwest Florida Water Management District (SWFWMD). 2020. Recommended minimum flows for the Lower Peace River and proposed minimum flows Lower Shell Creek. November 2020 draft report. Brooksville, Florida. https://habsos.noaa.gov

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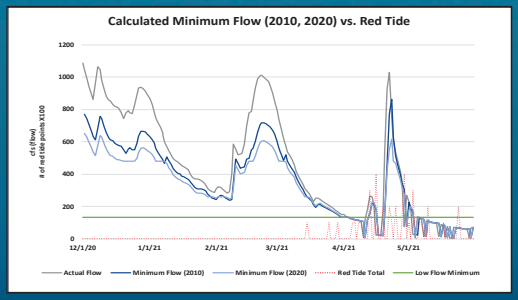
CALCULATED MINIMUM FLOW VS. RED TIDE (APRIL– MAY 2021)



Southwest Florida Water Management District (SWFWMD). 2020. Recommended minimum flows for the Lower Peace River and proposed minimum flows Lower Shell Creek. November 2020 draft report. Brooksville, Florida.

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CALCULATED MINIMUM FLOW (2010, 2020) VS. RED TIDE

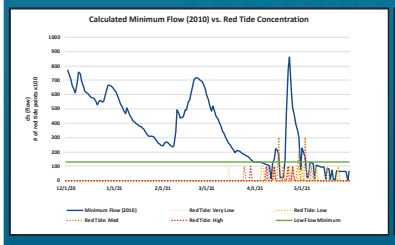


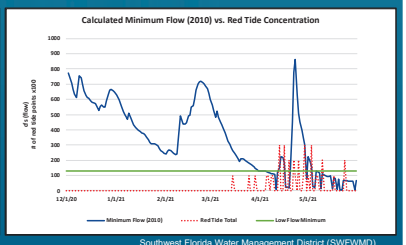
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Southwest Florida Water Management District (SWFWMD). 2010. Proposed minimum flows and levels for the Lower Peace River and Shell Creek. April 2010 final report. Brooksville, Florida.

Uniting Central and Southwest Florida to Protect Water and Wildlife

CALCULATED MINIMUM FLOW (2010) VS. RED TIDE





Southwest Florida Water Management District (SWFWMD). 2010. Proposed minimum flows and levels for the Lower Peace River and Shell Creek. April 2010 final report. Brooksville, Florida. https://habsos.noaa.gov

Uniting Central and Southwest Florida to Protect Water and Wildlife

LOWER PEACE RIVER MFL

- SWFWMD previously developed MFL for the Lower Peace River in 2010
- Based on combined flows for the previous day at 3 USGS gauge sites
  - Horse Creek near Arcadia
  - Joshua Creek near Nocatee
  - Peace River at Arcadia
- Calendar-based blocks
- Low Flow Threshold = 130 cfs
  - (withdrawals stop)
- Maximum Daily Withdrawal = 400 cfs

Period	Effective Dates	Where Flow on Previous Day Equals:	Minimum Flow is:	Potentially Allowable Flow Reduction is:
Annually	January 1 through December 31	≤130 cfs	Actual flow (no surface water withdrawals permitted)	0 cfs
		>130 cfs	Seasonally dependent – see Blocks below	
Block 1	April 20 through June 25	≤130 cfs	Actual flow (no surface water withdrawals permitted)	0 cfs
		>130 cfs	Previous day's flow minus 16% but not less than 130 cfs	Previous day's flow minus 84%
Block 2	October 28 through April 19	≤130 cfs	Actual flow (no surface water withdrawals permitted)	0 cfs
		>130 cfs and < 625 cfs	Previous day's flow minus 16% but not less than 130 cfs	Previous day's flow minus 84%
		≥ 625 cfs	Previous day's flow minus 29%	Previous day's flow minus 71%
Block 3	June 26 through October 27	≤130 cfs	Actual flow (no surface water withdrawals permitted)	0 cfs
		>130 cfs and < 625 cfs	Previous day's flow minus 16% but not less than 130 cfs	Previous day's flow minus 84%
		≥ 625 cfs	Previous day's flow minus 38%	Previous day's flow minus 62%

(SWFWMD 2010)

Uniting Central and Southwest Florida to Protect Water and Wildlife

REEVALUATION OF THE LOWER PEACE RIVER MFL

- Reevaluation of this MFL is required every five years to incorporate additional ecological data.
- Completed an initial reevaluation of the minimum flows in 2015.
- More comprehensive reevaluation in 2020:
  - Updated hydrologic data sets; re-mapped the bathymetry; LiDAR-based high resolution digital elevation model
  - Refined hydrodynamic model used to predict salinity, water level and temperature
  - Expanded application of hydrodynamic model to entire Charlotte Harbor.
  - Habitat modeling for several estuarine dependent fish species and Blue Crab
  - Water quality analysis and floodplain inundation analysis for the upper portion of the Lower Peace River were conducted.

UPDATED LOWER PEACE RIVER MFL

- Used baseline flow records from 1950 through 2014
- Flow-based blocks
  - Block 1 (Low flow)
  - Block 2 (Med flow)
  - Block 3 (High flow)
- Low Flow Threshold = 130 cfs
  - (withdrawals stop)
- Maximum Daily Withdrawal = 400 cfs

Flow-Based Block	If Combined Flow in cubic feet per second (cfs) on the Previous Day is:	Minimum Flow is:	Potentially Allowable Flow Reduction is:	Potentially Allowable Flow Reduction is (surface water withdrawals): Formula for Calculation of Potentially Allowable Flow Reduction (QRed) based on Combined Flow on Previous Day
1	≤130 cfs	Combined flow on the previous day	0 cfs	QRed = 0 cfs
	> 130 cfs and ≤149 cfs	130 cfs	Combined flow on the previous day minus 130 cfs	QRed = QPrev - 130 cfs
	> 149 cfs and ≤ 297 cfs	87% of combined flow on the previous day	13% of combined flow on the previous day	QRed = QPrev * 13%
2	> 297 cfs and ≤ 335 cfs	258 cfs	Combined flow on the previous day minus 258 cfs	QRed = QPrev - 258 cfs
	> 335 cfs and ≤ 622 cfs	77% of combined flow on the previous day	23% of combined flow on the previous day	QRed = QPrev * 23%
3	> 622 cfs and ≤ 798 cfs	479 cfs	Combined flow on the previous day minus 479 cfs	QRed = QPrev – 479 cfs
	> 798 cfs	60% of combined flow on the previous day	40% of combined flow on the previous day, but not exceeding 400 cfs	QRed = QPrev * 40%

(SWFWMD 2020)

ACTUAL FLOW IN THE LOWER PEACE RIVER (DEC 2020 – MAY 2021)

	Flow			
	Horse Creek Near Arcadia	Joshua Creek near Nocatee	Peace River at Arcadia	Combined
12/1/20	30.0	77.0	911	1018.1
12/2/20	30.1	72.2	892	1004.3
12/3/20	75.0	61.3	806	992.7
12/4/20	69.0	54.0	811	935.7
12/5/20	65.0	49.0	726	840.0
12/6/20	61.0	46.1	710	817.1
12/7/20	91.0	81.0	788	960.0
12/8/20	117	181	847	1068
12/9/20	104	90.0	830	1004.0
12/10/20	90	75.7	812	985.7
12/11/20	80.0	71.5	774	933.5
12/12/20	72.0	64.0	744	881.2
12/13/20	69.0	59.2	710	833.0
12/14/20	65.0	55.0	733	853.1
12/15/20	64	53.3	714	831.4
12/16/20	61.0	50.1	705	816.0
12/17/20	61.2	49.2	702	812.4
12/18/20	58	47.0	689	794.0
12/19/20	54.0	45.7	671	777.2
12/20/20	52	43	648	743
12/21/20	57.0	70.2	643	770.2
12/22/20	54.7	94.8	641	790.5
12/23/20	51.0	84.0	641	776.0
12/24/20	50.2	76	650	776.2
12/25/20	48.6	79.6	690	827.1
12/26/20	60.7	74.6	770	895.3
12/27/20	58.3	66.7	800	925.0
12/28/20	55.0	58	820	933.0
12/29/20	52.0	53	832	937.0
12/30/20	49.8	48.8	812	911.2
12/31/20	47.8	45.5	790	883.8

USGS Surface-Water Daily Data for the Nation. https://waterdata.usgs.gov/nwis

(SWFWMD 2010)

	2010 MFL		
	Combined Flow	Minimum Flow	Potentially Allowable Flow Reduction
12/1/20	1048.3	770.363	316.737
12/2/20	992.7	744.393	304.037
12/3/20	935.7	708.817	287.883
12/4/20	898.8	664.387	271.358
12/5/20	861.1	634.014	259.086
12/6/20	841.4	611.665	249.435
12/7/20	1065	682.059	276.606
12/8/20	1068.9	756.13	308.03
12/9/20	998.7	741.874	303.233
12/10/20	925.9	697.057	284.659
12/11/20	895.7	657.089	268.111
12/12/20	838.6	626.207	255.659
12/13/20	810.1	610.456	249.162
12/14/20	831.8	605.765	247.269
12/15/20	816.0	590.223	241.057
12/16/20	812.4	579.784	236.816
12/17/20	805.6	574.864	235.008
12/18/20	777.2	571.479	233.651
12/19/20	760	551.812	225.868
12/20/20	778.8	527.13	213.67
12/21/20	790.6	552.988	225.812
12/22/20	776.5	561.166	229.272
12/23/20	774.2	551.315	225.185
12/24/20	827.1	549.682	224.519
12/25/20	890.5	587.525	239.972
12/26/20	933.4	632.113	258.187
12/27/20	939.8	662.714	270.681
12/28/20	937.6	666.264	272.398
12/29/20	915.2	658.454	268.966
12/30/20	891.4	646.912	264.268
12/31/20	870.4	636.702	260.098

*Blue highlighted cells represent Calendar Block 2

(SWFWMD 2020)

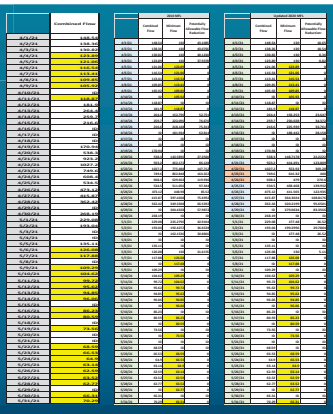
	Updated 2020 MFL		
	Combined Flow	Minimum Flow	Potentially Allowable Flow Reduction
12/1/20	1048.3	633.18	415
12/2/20	992.7	629.98	400
12/3/20	935.7	595.42	297.28
12/4/20	898.8	561.42	374.38
12/5/20	861.1	530.06	357.36
12/6/20	841.4	516.5	343.1
12/8/20	1065	576.86	384.86
12/9/20	1068.9	630	415
12/10/20	998.7	626.94	400
12/11/20	925.9	580.02	392.68
12/12/20	895.7	535.04	379.36
12/13/20	838.6	529.02	352.68
12/14/20	853.1	515.88	349.92
12/15/20	831.8	512.86	341.38
12/16/20	816.0	498.78	332.12
12/17/20	812.4	489.96	326.64
12/18/20	805.6	487.48	324.96
12/19/20	777.2	482.98	321.96
12/20/20	760	479	298.2
12/21/20	778.8	479	364
12/22/20	790.6	479	298.8
12/23/20	776.5	479	311.5
12/24/20	774.2	479	297.5
12/25/20	827.1	479	295.2
12/26/20	890.5	496.5	321
12/27/20	933.4	534.18	354.12
12/28/20	939.8	540.64	373.36
12/29/20	937.6	563.04	375.84
12/30/20	915.2	554.46	370.96
12/31/20	891.4	549.72	364.88

*Orange highlighted cells represent Flow-based Block 3

ANALYSES CONT.

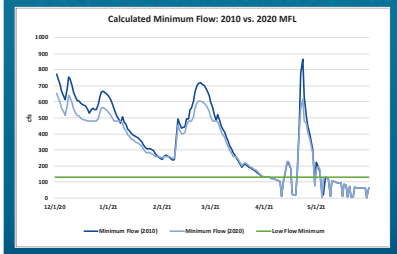
- Combined flow < Low Flow Threshold (130 cfs) on a total of 26 days from Dec 2020 – May 2021
- 2010 MFL & 2020 MFL calculated Minimum Flows < Low Flow Threshold (130 cfs) on 26 days

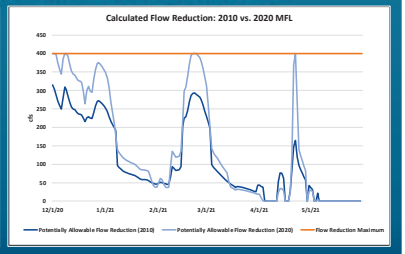
Note:
- Yellow highlighted cells represent flow <130 cfs
- ID = Insufficient Data



ANALYSES

Overall, the updated MFL (2020) allows for less flow and greater potential flow reductions (surface water withdrawals) than the Current MFL (2010), but results in same number of instances when the MFL is not met.





SWFWMD 2010
SWFWMD 2020
USGS Surface-Water Daily Data for the Nation. https://waterdata.usgs.gov/nwis

RECOVERY STRATEGY

- If actual flows or levels are, or during the next twenty years are expected to be below established minimum flows or levels, the District develops and implements a recovery or prevention strategy (Chapter 40D-80, F.A.C.), in accordance with state law.
- "Minimum flows status assessments for the Lower Peace River were conducted using flow and water withdrawal records, block-specific and five-year and ten-year moving mean and median flow statistics, and review of water use permit conditions aligned with adopted minimum flows. The assessment results indicated that the recommended minimum flows for the Lower Peace River are being met and are also expected to be met over the next 20 years. Development of a recovery strategy or specific prevention strategy associated with adoption of the minimum flows for the Lower Peace River is, therefore, not necessary."

(SWFWMD 2020)

NO ACTION ITEM

For information and discussion only.

TAC member discussion as guided by TAC Co-Chair- topics could include:

- Would it be beneficial for the MFL updating next cycle to include assessment of flow rates needed to maintain salinity conditions in river and upper harbor to discourage red tide?
- Would it be beneficial for a recovery strategy to be considered in the future to reduce or eliminate days when MFL not met?



Uniting Central and Southwest Florida to Protect Water and Wildlife

Southwest Florida Water Management District
2379 Broad Street, Brooksville, Florida 34604-6899
(352) 796-7211 or 1-800-423-1476 (FL only)
WaterMatters.org

An Equal Opportunity Employer

Bartow Office
170 Century Boulevard
Bartow, Florida 33830-7700
(863) 534-1448 or
1-800-492-7862 (FL only)

Sarasota Office
78 Sarasota Center Boulevard
Sarasota, Florida 34240-9770
(941) 377-3722 or
1-800-320-3503 (FL only)

Tampa Office
7601 U.S. 301 North (Fort King Highway)
Tampa, Florida 33637-6759
(813) 985-7481 or
1-800-836-0797 (FL only)

July 19, 2021

Peace River/Manasota Regional Water Supply Authority
9415 Town Center Parkway
Lakewood Ranch, FL 34202

Subject: **Notice of Intended Agency Action Letter - Approval**
Letter Modification
Water Use Permit No.: 20010420.011
Project Name: Peace River Water Treatment Plant Facility
County: DeSoto

Dear Permittee:

The Southwest Florida Water Management District (District) has completed its review of the application for Water Use Permit No. 20010420.011. Based upon a review of the information you have submitted, the District hereby gives notice of its intended approval of the application.

The File of Record associated with this application can be viewed at http://www18.swfwmd.state.fl.us/search/search/searchwupsimple.aspx and is also available for inspection Monday through Friday, except for District holidays, from 8:00 a.m. through 5:00 p.m. at the District's Tampa Service Office, 7601 U.S. Highway 301 North, Tampa, Florida 33637.

If you have any questions or concerns regarding your permit or any other information, please contact the Water Use Permit Bureau in the Tampa Service Office.

Sincerely,

Darrin Herbst
Bureau Chief
Water Use Permit Bureau
Regulation Division

cc: James Guida
Charlotte County B.O.C.C.
DeSoto County B.O.C.C.
Sarasota County B.O.C.C.
Manatee County B.O.C.C.
City of North Port City Commission
Mike Coates, P.G.
Patrick J. Lehman, P.E.
Douglas P. Manson. Esq.

Southwest Florida Water Management District
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July 19, 2021

Peace River/Manasota Regional Water Supply Authority
9415 Town Center Parkway
Lakewood Ranch, FL 34202

Subject: **Notice of Agency Action - Approval**
Letter Modification
Water Use Permit No.: 20010420.011
Project Name: Peace River Water Treatment Plant Facility
County: DeSoto

Dear Permittee:

The Southwest Florida Water Management District (District) is in receipt of your application for Water Use Permit No. 20010420.011. Based upon a review of the information you submitted, the permit is approved. Please refer to the attached Notice of Rights to determine any legal rights you may have concerning the District's agency action on the petition described in this letter. The specific modifications are listed in Attachment A and are considered a part of your Water Use Permit.

The District's action in this matter only becomes closed to future legal challenges from members of the public if such persons have been properly notified of the District's action and no person objects to the District's action within the prescribed period of time following the notification. The District does not publish notices of agency action. If you wish to limit the time within which a person who does not receive actual written notice from the District may request an administrative hearing regarding this action, you are strongly encouraged to publish, at your own expense, a notice of agency action in the legal advertisement section of a newspaper of general circulation in the county or counties where the activity will occur. Publishing notice of agency action will close the window for filing a petition for hearing. Legal requirements and instructions for publishing notices of agency action, as well as a noticing form that can be used, are available from the District's website at www.WaterMatters.org/permits/noticing. If you publish notice of agency action, a copy of the affidavit of publication provided by the newspaper should be sent to the District's Tampa Service Office for retention in this permit's File of Record.

Please be advised that the Governing Board has formulated a water shortage plan referenced in a Standard Water Use Permit Condition (Exhibit A) of your permit, and will implement such a plan during periods of water shortage. You will be notified during a declared water shortage of any change in the conditions of your Permit or any suspension of your Permit, or of any restrictions on your use of water for the duration of the declared water shortage. Please further note that water conservation is a condition of your Permit and should be practiced at all times.

If you have any questions or concerns regarding your permit or any other information, please contact the Water Use Permit Bureau in the Tampa Service Office.

Sincerely,

Darrin Herbst
Bureau Chief
Water Use Permit Bureau
Regulation Division

Enclosures: Attachment A
Notice of Rights
Previous Permit

cc: James Guida
Charlotte County B.O.C.C.
DeSoto County B.O.C.C.
Sarasota County B.O.C.C.
Manatee County B.O.C.C.
City of North Port City Commission
Mike Coates, P.G.
Patrick J. Lehman, P.E.
Douglas P. Manson. Esq.

LETTER MODIFICATION
Water Use Permit No: 20010420.011
Attachment A

MODIFICATIONS

The following constitutes modifications to the terms and conditions of Water Use Permit No. 20010420.011, effective July 19, 2021. This modification replaces special condition no. 4 with language consistent with recent changes to the Minimum Flow Level (MFL) for the lower Peace River

1. There is no change in the authorized allocation which continues to be limited by the MFL and diversion schedule with maximum daily withdrawal of 258 MGD.

2. Special condition No. 4 is changed as follows:

4. The quantities withdrawn from the lower Peace River are limited by the adopted Minimum Flow, delineated in Rule 40D-8.041(8), Florida Administrative Code, and the diversion schedule described below.

Surface water withdrawals at DID No. 14 will be based on the previous day's combined adjusted average flow as measured in cfs for the lower Peace River at the Arcadia, Joshua Creek at Nocatee, and Horse Creek near Arcadia U.S. Geological Survey Gages. Actual withdrawals are limited by seven flow-dependent Minimum Flows in three blocks:

Flow-Based Block	If Combined Adjusted Flow in cubic feet per second(cfs) on the Previous Day is:	Minimum Flow is:	PRMRWSA Diversion Schedule Q=combined adjusted average flow in cubic feet per second (cfs) on the previous day
1	≤130 cfs	Combined adjusted flow on the previous day	0 cfs
	> 130 cfs and ≤149 cfs	130 cfs	Q - 130 cfs
	> 149 cfs and ≤ 297 cfs	87% of combined adjusted flow on the previous day	Q x 13%
2	> 297 cfs and ≤ 335 cfs	258 cfs	Q - 258 cfs
	> 335 cfs and ≤ 622 cfs	77% of combined adjusted flow on the previous day	Q x 23%
3	> 622 cfs and ≤ 798 cfs	479 cfs	Minimum of either (Q – 479 cfs, or Q x 28%)
	> 798 cfs	60% of combined adjusted flow on the previous day	Minimum of either (MFL max day quantity of 400 cfs, or Q x 28%)

All other terms and conditions of this permit shall remain unchanged unless specifically modified by this Letter Modification, and this permit will expire on February 26, 2069.

Notice of Rights

Administrative Hearing

1. You or any person whose substantial interests are or may be affected by the District's intended or proposed action may request an administrative hearing on that action by filing a written petition in accordance with Sections 120.569 and 120.57, Florida Statutes (F.S.), Uniform Rules of Procedure Chapter 28-106, Florida Administrative Code (F.A.C.) and District Rule 40D-1.1010, F.A.C. Unless otherwise provided by law, a petition for administrative hearing must be filed with (received by) the District within 21 days of receipt of written notice of agency action. "Written notice" means either actual written notice, or newspaper publication of notice, that the District has taken or intends to take agency action. "Receipt of written notice" is deemed to be the fifth day after the date on which actual notice is deposited in the United States mail, if notice is mailed to you, or the date that actual notice is issued, if sent to you by electronic mail or delivered to you, or the date that notice is published in a newspaper, for those persons to whom the District does not provide actual notice.

2. Pursuant to Subsection 373.427(2)(c), F.S., for notices of intended or proposed agency action on a consolidated application for an environmental resource permit and use of sovereignty submerged lands concurrently reviewed by the District, a petition for administrative hearing must be filed with (received by) the District within 14 days of receipt of written notice.

3. Pursuant to Rule 62-532.430, F.A.C., for notices of intent to deny a well construction permit, a petition for administrative hearing must be filed with (received by) the District within 30 days of receipt of written notice of intent to deny.

4. Any person who receives written notice of an agency decision and who fails to file a written request for a hearing within 21 days of receipt or other period as required by law waives the right to request a hearing on such matters.

5. Mediation pursuant to Section 120.573, F.S., to settle an administrative dispute regarding District intended action is not available prior to the filing of a petition for hearing.

6. A request or petition for administrative hearing must comply with the requirements set forth in Chapter 28-106, F.A.C. A petition for a hearing must: (1) explain how the substantial interests of each person requesting the hearing will be affected by the District's intended action or proposed action, (2) state all material facts disputed by the person requesting the hearing or state that there are no material facts in dispute, and (3) otherwise comply with Rules 28-106.201 and 28-106.301, F.A.C. Chapter 28-106, F.A.C., can be viewed at www.flrules.org or at the District's website at www.WaterMatters.org/permits/rules.

7. A petition for administrative hearing is deemed filed upon receipt of the complete petition by the District Agency Clerk at the District's Tampa Service Office during normal business hours, which are 8:00 a.m. to 5:00 p.m., Monday through Friday, excluding District holidays. Filings with the District Agency Clerk may be made by mail, hand-delivery or facsimile transfer (fax). The District does not accept petitions for administrative hearing by electronic mail. Mailed filings must be addressed to, and hand-delivered filings must be delivered to, the Agency Clerk, Southwest Florida Water Management District, 7601 US Hwy 301, Tampa, FL 33637-6759. Faxed filings must be transmitted to the District Agency Clerk at (813) 367-9776. Any petition not received during normal business hours shall be filed as of 8:00 a.m. on the next business day. The District's acceptance of faxed petitions for filing is subject to certain conditions set forth in the District's Statement of Agency Organization and Operation, available for viewing at www.WaterMatters.org/about.

Judicial Review

1. Pursuant to Sections 120.60(3) and 120.68, F.S., a party who is adversely affected by District action may seek judicial review of the District's action. Judicial review shall be sought in the Fifth District Court of Appeal or in the appellate district where a party resides or as otherwise provided by law.

2. All proceedings shall be instituted by filing an original notice of appeal with the District Agency Clerk within 30 days after the rendition of the order being appealed, and a copy of the notice of appeal, accompanied by any filing fees prescribed by law, with the clerk of the court, in accordance with Rules 9.110 and 9.190 of the Florida Rules of Appellate Procedure (Fla. R. App. P.). Pursuant to Fla. R. App. P. 9.020(h), an order is rendered when a signed written order is filed with the clerk of the lower tribunal.

From: Doug Leeper
To: Jennifer Hecker
Cc: Yonas Ghile; Chris Zajac; Randy Smith
Subject: RE: [EXTERNAL] SWFWMD MFLs and Reservations
Date: Friday, August 20, 2021 8:51:00 AM

Ms. Hecker:

- Please accept my apologies for this delayed response to your email. I was unexpectedly pulled away from the office recently to deal with a personal issue.
- Below, I have reproduced your questions and provided what I hope are useful responses.

- **You asked:** *Regarding the minimum flow status assessment and recovery strategy, are any exceedances of the MFL allowed due to the basis on averages and median flow statistics?*

  Response: Minimum flow exceedances due to water withdrawals are not allowed. Water use permits issued by the District, including the permit authorizing withdrawals from the Peace River by the Peace River Manasota Regional Water Supply Authority, include special conditions that stipulate withdrawals must be maintained in compliance with established minimum flows or levels. Note, however, that drought conditions can lead to flows lower than those calculated based on historical flow records that have been adjusted to reflect maximum flow reductions associated with established minimum flows. For example, the previously developed 5- and 10-year moving average and median flow statistics calculated for the Lower Peace River can be used as guidance for implementation of minimum flows but may be exceeded based on hydrologic conditions reflecting factors other than water withdrawals.

- **You asked:** *If so, how many exceedances are allowed before it is determined that a recovery strategy is necessary?*

  Response: No exceedances of minimum flows or levels due to water withdrawals are allowed. However, based on the more than 200 minimum flows and levels the District has established for differing types of water bodies (i.e., for lakes, wetlands, freshwater river segments, springs, estuarine river segments and aquifers) and the extended time period over which these minimum flows and levels were developed, there is some variation in how minimum flow and level compliance or exceedances are determined.

  The current rule for the minimum flows established for the Lower Peace River specifies how annual and five-year status assessments are and will be completed. An excerpt from the rule that addresses these assessments is provided below. As part of these assessments, if it is determined that a recovery or prevention strategy is needed or projected to be needed for an established minimum flow or level as a result of existing or anticipated water withdrawals, the District, in accordance with the Florida Statutes, would expeditiously adopt a recovery or prevention strategy. According to the statutes, a recovery or prevention strategy shall include the development of additional water supplies and other actions, to: (a) achieve recovery to the established minimum flow or minimum water level as soon as

practicable; or (b) prevent the existing flow or water level from falling below the established minimum flow or minimum water level.

_____

Excerpt from District Water Levels and Rates of Flow Rules (Chapter 40D-8, Florida Administrative Code)

Chapter 40D-8, Water Levels and Rates of Flow

(8) Minimum Flows for the lower Peace River.

(a) NOT SHOWN.

(b) NOT SHOWN.

(c) Status assessments of the Minimum Flows for the lower Peace River will be completed to determine whether the flow is below or projected to fall below the Minimum Flows. Each status assessment is independent from and not a determination of water use permit compliance or environmental resource permit compliance. Permit compliance is a regulatory function that is not within the scope of this subsection. As part of each status assessment, the District will use the following approach:

1. The District will evaluate the Minimum Flow annually to determine the extent to which the flow of the lower Peace River has been reduced due to withdrawals as of the date of each status assessment at Gage No. 02296750, Gage No. 02297100 and Gage No. 02297310. The annual evaluation will be completed through a review of:

(a) Flow data;

(b) Water withdrawals;

(c) Aquifer water levels;

(d) Rainfall data; and

(e) Hydrologic modeling.

2. The District will also evaluate the Minimum Flows every five years as part of the regional water supply planning process. This evaluation will include the use of hydrologic modeling.

3. If the Minimum Flows are being met based on the annual evaluation or the evaluation performed as a part of the regional water supply planning process, then no further actions are required beyond continued monitoring.

_____

Doug Leeper
MFLs Program Lead
Southwest Florida Water Management District
2379 Broad Street
Brooksville, FL 34604
1-800-423-1476 or 352-796-7211, ext. 4272
doug.leeper@watermatters.org or doug.leeper@swfwmd.state.fl.us

---

From: Jennifer Hecker <JHecker@chnep.org>
Sent: Tuesday, August 10, 2021 8:49 AM
To: Doug Leeper <Doug.Leeper@swfwmd.state.fl.us>
Subject: RE: [EXTERNAL] SWFWMD MFLs and Reservations

[EXTERNAL SENDER] Use caution before opening.

Good morning, just following up to confirm if you received below and whether you had any additional information to share regarding the questions below? Thank you, Jennifer

---

From: Jennifer Hecker
Sent: Thursday, July 29, 2021 1:32 PM

To: Doug Leeper <Doug.Leeper@swfwmd.state.fl.us>
Cc: Chris Zajac <Chris.Zajac@swfwmd.state.fl.us>; Randy Smith <Randy.Smith@swfwmd.state.fl.us>; Kristina Deak <Kristina.Deak@swfwmd.state.fl.us>; Xinjian Chen <Xinjian.Chen@swfwmd.state.fl.us>; Yonas Ghile <Yonas.Ghile@swfwmd.state.fl.us>
Subject: Re: [EXTERNAL] SWFWMD MFLs and Reservations

Hi Mr. Leeper, thank you for following up. We do have a couple follow-up questions...

In our staff reading the Recommended Minimum Flows for the Lower Peace River Draft Report where it states "Minimum flows status assessments for the Lower Peace River were conducted using flow and water withdrawal records, block-specific and five-year and ten-year moving mean and median flow statistics, and review of water use permit conditions aligned with adopted minimum flows. The assessment results indicated that the recommended minimum flows for the Lower Peace River are being met and are also expected to be met over the next 20 years. Development of a recovery strategy or specific prevention strategy associated with adoption of the minimum flows for the Lower Peace River is, therefore, not necessary."
Regarding the minimum flow status assessment and recovery strategy, are any exceedances of the MFL allowed due to the basis on averages and median flow statistics?
If so, how many exceedances are allowed before it is determined that a recovery strategy is necessary?
We appreciate you providing additional information and look forward to the SWFWMD's MFL presentation at the upcoming CHNEP TAC meeting.
Thank you again, Jennifer

Jennifer Hecker
Executive Director
Coastal & Heartland National Estuary Partnership
326 West Marion Ave.
Punta Gorda, FL 33950
941-575-3392
Toll-free 866-835-5785
www.CHNEP.org

From: Doug Leeper <Doug.Leeper@swfwmd.state.fl.us>
Sent: Wednesday, July 28, 2021 9:19 AM
To: Jennifer Hecker
Cc: Chris Zajac; Randy Smith; Kristina Deak; Xinjian Chen; Yonas Ghile
Subject: [EXTERNAL] SWFWMD MFLs and Reservations

Ms. Hecker:

- I'm writing to see if there is a need to follow-up on any questions you may still have regarding the Southwest Florida Water Management District's development of minimum flows and levels and water reservations that you inquired about during the recent Environmental

Advisory Committee meeting.

- Also, I want to let you know that I would be happy to schedule a call or Teams meeting to discuss any questions you may have and/or to provide you with additional information on MFLs and reservations.

Thanks,

Doug Leeper
MFLs Program Lead
Southwest Florida Water Management District
2379 Broad Street
Brooksville, FL 34604
Doug.leeper@swfwmd.state.fl.us
1-800-423-1476, ext. 4272 or 352-796-7211, ext. 4272

From: Jennifer Hecker
To: Doug Leeper
Cc: Yonas Ghile; Chris Zajac; Randy Smith
Subject: Re: [EXTERNAL] RE: [EXTERNAL] SWFWMD MFLs and Reservations
Date: Friday, August 20, 2021 9:54:14 AM

[EXTERNAL SENDER] Use caution before opening.

Thank you Mr. Leeper and hope everything is OK. I appreciate your response and Randy did clarify the same to us as well. Thank you for your assistance, Jennifer

Jennifer Hecker
Executive Director
Coastal & Heartland National Estuary Partnership
326 West Marion Ave.
Punta Gorda, FL 33950
941-575-3392
Toll-free 866-835-5785
www.CHNEP.org

From: Doug Leeper <Doug.Leeper@swfwmd.state.fl.us>
Sent: Friday, August 20, 2021 8:51 AM
To: Jennifer Hecker
Cc: Yonas Ghile; Chris Zajac; Randy Smith
Subject: [EXTERNAL] RE: [EXTERNAL] SWFWMD MFLs and Reservations

Ms. Hecker:

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- Below, I have reproduced your questions and provided what I hope are useful responses.

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The current rule for the minimum flows established for the Lower Peace River specifies how annual and five-year status assessments are and will be completed. An excerpt from the rule that addresses these assessments is provided below. As part of these assessments, if it is determined that a recovery or prevention strategy is needed or projected to be needed for an established minimum flow or level as a result of existing or anticipated water withdrawals, the District, in accordance with the Florida Statutes, would expeditiously adopt a recovery or prevention strategy. According to the statutes, a recovery or prevention strategy shall include the development of additional water supplies and other actions, to: (a) achieve recovery to the established minimum flow or minimum water level as soon as practicable; or (b) prevent the existing flow or water level from falling below the established minimum flow or minimum water level.

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(a) Flow data;

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(c) Aquifer water levels;

(d) Rainfall data; and

(e) Hydrologic modeling.

2. The District will also evaluate the Minimum Flows every five years as part of the regional water supply planning process. This evaluation will include the use of hydrologic modeling.

3. If the Minimum Flows are being met based on the annual evaluation or the evaluation performed as a part of the regional water supply planning process, then no further actions are required beyond continued monitoring.

_____

Doug Leeper

MFLs Program Lead
Southwest Florida Water Management District
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Sent: Tuesday, August 10, 2021 8:49 AM
To: Doug Leeper <Doug.Leeper@swfwmd.state.fl.us>
Subject: RE: [EXTERNAL] SWFWMD MFLs and Reservations

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Sent: Thursday, July 29, 2021 1:32 PM
To: Doug Leeper <Doug.Leeper@swfwmd.state.fl.us>
Cc: Chris Zajac <Chris.Zajac@swfwmd.state.fl.us>; Randy Smith <Randy.Smith@swfwmd.state.fl.us>; Kristina Deak <Kristina.Deak@swfwmd.state.fl.us>; Xinjian Chen <Xinjian.Chen@swfwmd.state.fl.us>; Yonas Ghile <Yonas.Ghile@swfwmd.state.fl.us>
Subject: Re: [EXTERNAL] SWFWMD MFLs and Reservations

Hi Mr. Leeper, thank you for following up. We do have a couple follow-up questions...

In our staff reading the Recommended Minimum Flows for the Lower Peace River Draft Report where it states “Minimum flows status assessments for the Lower Peace River were conducted using flow and water withdrawal records, block-specific and five-year and ten-year moving mean and median flow statistics, and review of water use permit conditions aligned with adopted minimum flows. The assessment results indicated that the recommended minimum flows for the Lower Peace River are being met and are also expected to be met over the next 20 years. Development of a recovery strategy or specific prevention strategy associated with adoption of the minimum flows for the Lower Peace River is, therefore, not necessary.”
Regarding the minimum flow status assessment and recovery strategy, are any exceedances of the MFL allowed due to the basis on averages and median flow statistics?
If so, how many exceedances are allowed before it is determined that a recovery strategy is necessary?
We appreciate you providing additional information and look forward to the SWFWMD's MFL presentation at the upcoming CHNEP TAC meeting.
Thank you again, Jennifer

Jennifer Hecker

Executive Director
Coastal & Heartland National Estuary Partnership
326 West Marion Ave.
Punta Gorda, FL 33950
941-575-3392
Toll-free 866-835-5785
www.CHNEP.org

From: Doug Leeper <Doug.Leeper@swfwmd.state.fl.us>
Sent: Wednesday, July 28, 2021 9:19 AM
To: Jennifer Hecker
Cc: Chris Zajac; Randy Smith; Kristina Deak; Xinjian Chen; Yonas Ghile
Subject: [EXTERNAL] SWFWMD MFLs and Reservations

Ms. Hecker:

- I'm writing to see if there is a need to follow-up on any questions you may still have regarding the Southwest Florida Water Management District's development of minimum flows and levels and water reservations that you inquired about during the recent Environmental Advisory Committee meeting.
- Also, I want to let you know that I would be happy to schedule a call or Teams meeting to discuss any questions you may have and/or to provide you with additional information on MFLs and reservations.

Thanks,
Doug Leeper
MFLs Program Lead
Southwest Florida Water Management District
2379 Broad Street
Brooksville, FL 34604
Doug.leeper@swfwmd.state.fl.us
1-800-423-1476, ext. 4272 or 352-796-7211, ext. 4272

From:	Chris Zajac
To:	Gregory B. Murray
Cc:	Chuck Pavlos; Steve Adams; Steven Leonard; mreichert@cityofpuntagordafl.com; Jennette Seachrist; Eric DeHaven; Randy Smith; Adrienne E. Vining; Yonas Ghile; Doug Leeper; Owen Thornberry; Darrin Herbst; April D. Breton
Subject:	Lower Shell Creek MFL
Date:	Tuesday, September 21, 2021 4:18:35 PM

Mr. Murray,

I'd like to set up a meeting with you and your team to discuss the proposed Water Use Permit conditions we've drafted for your review. I've checked calendars on my end and offer the dates and times below. Please advise if one of these dates/times works for you and your staff. If so, I'll send a meeting invitation and the draft permit condition.

October 4th at 4:00 p.m.

October 5th at 4:00 p.m.

Chris Zajac
Environmental Flows and Levels Manager
Natural Systems and Restoration Bureau
2379 Broad Street
Brooksville, FL 34604
(352) 796-7211, Ext. 4413
(352) 586-3776
Chris.Zajac@WaterMatters.org

From:	Chris Zajac
To:	Steve Adams
Cc:	Brian Fuller; Steven Leonard; Chuck Pavlos; Gregory B. Murray; Jennette Seachrist; Eric DeHaven; Randy Smith; Owen Thornberry; Darrin Herbst; April D. Breton; Doug Leeper; Yonas Ghile; Adrienne E. Vining
Subject:	RE: Lower Shell Creek Minimum Level Discussion
Date:	Tuesday, September 21, 2021 5:03:14 PM

Steve,

We'll plan to discuss this as well during our meeting to go over the draft Water Use Permit conditions for the City's water use permit. We certainly need to avoid the transfer of water that would cause the MFL to be missed. Look forward to meeting with you and your team.

Chris Zajac
Environmental Flows and Levels Manager
Natural Systems and Restoration Bureau
2379 Broad Street
Brooksville, FL 34604
(352) 796-7211, Ext. 4413
(352) 586-3776
Chris.Zajac@WaterMatters.org

From: Steve Adams <SAdams@cityofpuntagordafl.com>
Sent: Tuesday, September 21, 2021 4:19 PM
To: Chris Zajac <Chris.Zajac@swfwmd.state.fl.us>
Cc: Brian Fuller <BFuller@cityofpuntagordafl.com>; Steven Leonard <SLeonard@cityofpuntagordafl.com>; Chuck Pavlos <CPavlos@cityofpuntagordafl.com>
Subject: FW: Lower Shell Creek Minimum Level Discussion

[EXTERNAL SENDER] Use caution before opening.

Chris:

When we meet up to discuss the WUP mod, we are seeking guidance about water delivery issues related to the Operational Flexibility permit.

After the permit mod, Brian Fuller WTP Supervisor, will need to understand how to plan for water use from Shell Creek. He is seeking a better understanding regarding the OF permit.

We will not be able to deliver any water via OF during a Block 1 period. What does the OF permit authorize? To me it allows the City to provide up to 2 MGD to the Authority, when requested, however, the Authority is not entitled to this water delivery since it will need to receive treatment with the SCF prior to delivery.

Brian is seeking guidance which says a OF water delivery request by the Authority is subject to the

City's ability to provide the requested water delivery. The water is not guaranteed and will not be available during a Block 1 period.

Our understanding of the permit is that it was created prior to completion of reservoir 2, when reservoir 1 had about a 72% reliability of water supply. Once reservoir 2 was completed, the reliability went up to about 99%, so the likely hood of the Authority seeking additional water supply these days is remote.

Steve Adams
Utilities Engineering Manager
Utilities

City of Punta Gorda
326 West Marion Avenue
Punta Gorda, Florida 33950
941-575-3325
www.CityofPuntaGordaFL.com

From: Jennette Seachrist [mailto:Jennette.Seachrist@swfwmd.state.fl.us]
Sent: Wednesday, September 15, 2021 12:26 PM
To: Gregory B. Murray <GMurray@cityofpuntagordafl.com>
Cc: Eric DeHaven <Eric.Dehaven@swfwmd.state.fl.us>; Randy Smith <Randy.Smith@swfwmd.state.fl.us>; Chuck Pavlos <CPavlos@cityofpuntagordafl.com>; Steve Adams <SAdams@cityofpuntagordafl.com>; Steven Leonard <SLeonard@cityofpuntagordafl.com>; Melissa Reichert <MReichert@cityofpuntagordafl.com>; Chris Zajac <Chris.Zajac@swfwmd.state.fl.us>; Yonas Ghile <Yonas.Ghile@swfwmd.state.fl.us>; Dennis Ragosta <Dennis.Ragosta@swfwmd.state.fl.us>
Subject: RE: [EXTERNAL] Lower Shell Creek Minimum Level Discussion

Greg,
We were unable to find the emergency transfer clause, would you be able to provide that to us? Also, we would like to meet with you and your staff to go over the proposed permit condition to meet the recommended MFL. Chris Zajac will be reaching out to your staff to schedule that meeting. In the meantime, please let us know if you have any questions or need any assistance.

Thank you again for working with us on the Lower Shell Creek minimum level.

Jennette M. Seachrist, PE
Director, Resource Management
Southwest Florida Water Management District
(813) 985-7481 ext. 2210
Jennette.seachrist@swfwmd.state.fl.us

From: Gregory B. Murray <GMurray@cityofpuntagordafl.com>
Sent: Friday, September 3, 2021 3:13 PM
To: Jennette Seachrist <Jennette.Seachrist@swfwmd.state.fl.us>
Cc: Eric DeHaven <Eric.Dehaven@swfwmd.state.fl.us>; Randy Smith <Randy.Smith@swfwmd.state.fl.us>; Chuck Pavlos <CPavlos@cityofpuntagordafl.com>; Steve Adams <SAdams@cityofpuntagordafl.com>; Steven Leonard <SLeonard@cityofpuntagordafl.com>; Melissa Reichert <MReichert@cityofpuntagordafl.com>
Subject: RE: [EXTERNAL] Lower Shell Creek Minimum Level Discussion

[EXTERNAL SENDER] Use caution before opening.

Thank you for the time that you and your staff spent providing the history and details driving the MFL requirement in Lower Shell Creek. We certainly appreciate the work you have already completed refining and optimizing the development of the proposed Lower Shell Creek minimum flow levels.

As such, City Staff accepts the updated MFLs proposed in the District's letter dated July 28, 2021. City staff will present the District's MFL proposal to City Council and recommend approval at an October 2021 Council meeting.

It is understood that given the current assumptions, the recommended Lower Shell Creek minimum flows are currently met, are projected to be met during the next 20-year planning period, and that no additional recovery/prevention projects are required. The City of Punta Gorda will coordinate with the District on water use permit conditions to meet the recommended MFLs. We would also appreciate any support that can be provided if the need arises to negotiate additional contracts with the Authority, and with looking at removing the emergency transfer clause currently in our permit.

Thank you again for the time and effort you have spent on this endeavor. Adequate water supply focused through the lens of water quality enhancements is certainly a priority of the City.

Please let me know if you need anything further.

Gregory B. Murray
City Manager
Office of the City Manager

City of Punta Gorda
326 West Marion Avenue
Punta Gorda, Florida 33950
941-575-3301
www.CityofPuntaGordaFL.com

Florida has a very broad public records law. Most written communications to City officials regarding City

business are public records available to the public and media upon request. Your e-mail communications may be subject to public disclosure.
In accordance with the requirements of Title II of the Americans with Disabilities Act of 1990 ("ADA"), the City of Punta Gorda will not discriminate against qualified individuals with disabilities on the basis of disability in its services, programs, or activities. Reasonable accommodations will be made to ensure that qualified individuals with disabilities have an equal opportunity to enjoy all of the City's services, programs, and activities. Anyone who requires an auxiliary aid or service for effective accommodation, or a modification of policies or procedures to participate in a service, program, or activity of the City of Punta Gorda should contact the applicable agency at least 4 days prior to the meeting or event.

From: Jennette Seachrist [mailto:Jennette.Seachrist@swfwmd.state.fl.us]
Sent: Monday, August 30, 2021 3:38 PM
To: Gregory B. Murray <GMurray@cityofpuntagordafl.com>
Cc: Eric DeHaven <Eric.Dehaven@swfwmd.state.fl.us>; Randy Smith <Randy.Smith@swfwmd.state.fl.us>
Subject: [EXTERNAL] Lower Shell Creek Minimum Level Discussion

MESSAGE FROM AN EXTERNAL SENDER: Please use caution when opening attachments, clicking links, or replying to this message.

Greg,

Thank you very much for last Thursday's discussion on the recommended Lower Shell Creek minimum flow determination. I appreciate your staff and your consultant's efforts to make sure the best available science and data were used to develop the minimum flow and the status. I believe we are on the right path to finalize the minimum flow rule and ensure it is met into the future.

The great news is a recovery strategy isn't needed because the RO system and the interconnect with the Authority are already constructed. As we discussed, the recommended Lower Shell Creek minimum flow is not projected be met over the next 20 years and a prevention strategy is required. The next step needed for prevention is modifying your water use permit to reflect the Lower Shell Creek minimum flow. This modification might have a slight impact on how Punta Gorda obtains water in the future, predominantly in the years approaching 2040. In that time frame the City might occasionally have to rely on water transfers from the Authority. The interconnect pipeline with the Authority was co-funded by the District as a regional water supply project with the understanding that the pipeline, along with the RO system, would be used by Punta Gorda to assist in meeting the Lower Shell Creek minimum flow.

District staff will continue to work with the City on several items that were discussed last Thursday, including an operational strategy that would allow the City to most easily ensure the Lower Shell Creek minimum flow is met, discussions with the Authority on negotiating a water transfer agreement, and assisting with City Council meetings. We will also continue to move forward on the rule development in order to bring a proposed rule to our Governing Board by November. We will provide that draft rule to the City for review and assist on any questions you might have on the draft rule. We are very hopeful to have the City's support as we move forward through this process.

Again, thank you for a very productive meeting and please let me know of any questions you might have. We would be happy to meet with the City again to address additional questions or provide more detail on the minimum flow rule development.

Jennette M. Seachrist, PE
Director, Resource Management
Southwest Florida Water Management District
(813) 985-7481 ext. 2210
Jennette.seachrist@swfwmd.state.fl.us

From:	Chris Zajac
To:	Steve Adams
Cc:	Steven Leonard; Chuck Pavlos; Owen Thornberry; Darrin Herbst; April D. Breton; Doug Leeper; Yonas Ghile; Randy Smith; Eric DeHaven; Jennette Seachrist; Adrienne E. Vining; Gregory B. Murray
Subject:	Draft Permit Conditions
Date:	Friday, October 1, 2021 1:03:28 PM
Attachments:	DRAFT LETTER MODIFICATION City of Punta Gorda.docx

Steve,

Please find attached one file containing the draft water use permit conditions for our discussion next Tuesday, October 5th at 4:00 p.m. District staff look forward to discussing these draft conditions with City staff.

Chris Zajac
Environmental Flows and Levels Manager
Natural Systems and Restoration Bureau
2379 Broad Street
Brooksville, FL 34604
(352) 796-7211, Ext. 4413
(352) 586-3776
Chris.Zajac@WaterMatters.org

Draft LETTER MODIFICATION
Water Use Permit No: 871.013
Attachment A

MODIFICATIONS

The following constitutes modifications to the terms and conditions of Water Use Permit No. 871.013, effective TodaysDate. This modification adds a surface water diversion schedule and specific monthly reporting requirements.

1. There is no change in authorized quantities, which remain 8.088 MGD on an annual average basis, and 11.728 MGD on a peak month basis.

2. Special Condition Nos. 21 and 22 are added to the permit as follows:

21. Authorized surface water withdrawals at DID No. 1 are based on the adjusted previous day's flow as measured in cubic feet per second (cfs) at the United States Geological Survey (USGS) Shell Creek near Punta Gorda, FL Gage No. 02298202. The previous day's adjusted flow will then be converted to million gallons per day (mgd) and adjusted by adding the City of Punta Gorda's previous day's withdrawal (mgd) and subtracting the monthly estimated excess agricultural runoff (mgd) found in Table 2. There are three blocks based on flow. Table 1 provides the maximum surface water withdrawals authorized:

Table 1: Flow-based Withdrawals at DID No. 1

Flow-based block	If adjusted flow on previous day is:		Maximum withdrawals
1	≤36.2 mgd	January - April	4.22 mgd
		May - September	4.05 mgd
		October	3.40 mgd
		November - December	4.42 mgd
2	>36.2 mgd and ≤51 mgd		23% of flow
	>51 mgd and ≤88.5 mgd		11.73 mgd
3	>88.5 mgd		11.73 mgd

Table 2: Estimated Excess Agricultural Runoff (mgd) for Previous Day Flow Adjustment

January	February	March	April	May	June	July	August	September	October	November	December
8.5	11.0	14.7	8.7	6.8	27.0	10.1	0.0	0.0	0.7	5.3	6.0

22. Flow in the lower Shell Creek shall be read at the USGS Shell Creek near Punta Gorda FL Gage No. 02298202 (District ID No. 70). Flow shall be read on a daily basis, adjusted, and reported to the Water Use Permit Bureau (using District-approved forms) on or before the tenth (10th) day of the following month. The recordings (raw and adjusted) shall include daily average water flow in million gallons per day (mgd) and cubic feet per second (cfs). Surface water withdrawals at DID No. 1, now based on the above flow calculation, shall also be recorded on a daily basis, and reported to the Water Use Permit Bureau on or before the tenth (10th) day of the following month.

DRAFT

All other terms and conditions of this permit shall remain unchanged unless specifically modified by this Letter Modification, and this permit will expire on July 31, 2027.

DRAFT

From: Chris Zajac
To: Doug Leeper; Yonas Ghile
Subject: FW: Phone call Oct 5, 2021
Date: Wednesday, October 6, 2021 1:21:57 PM

FYI

Chris Zajac
Environmental Flows and Levels Manager
Natural Systems and Restoration Bureau
2379 Broad Street
Brooksville, FL 34604
(352) 796-7211, Ext. 4413
(352) 586-3776
Chris.Zajac@WaterMatters.org

From: Steve Adams <SAdams@cityofpuntagordafl.com>
Sent: Wednesday, October 6, 2021 9:01 AM
To: Chris Zajac <Chris.Zajac@swfwmd.state.fl.us>
Cc: 'Randy.Smith@WaterMaters.org' <Randy.Smith@WaterMaters.org>; Jennette Seachrist <Jennette.Seachrist@swfwmd.state.fl.us>; Laura Baumberger (LBaumberger@carollo.com) <LBaumberger@carollo.com>; Chuck Pavlos <CPavlos@cityofpuntagordafl.com>; Steven Leonard <SLeonard@cityofpuntagordafl.com>; Brian Fuller <BFuller@cityofpuntagordafl.com>
Subject: Phone call Oct 5, 2021

[EXTERNAL SENDER] Use caution before opening.

Thanks for meeting and discussing the Draft letter modification. I was alarmed when you advised that District staff has no plans to present the MFL program at the City Council meeting, and to represent that the letter mod is District staff's regulatory approach to adopting MFL for Shell Creek. District staff has previously represented that they WOULD present their findings to City Council, at the same meeting Carollo is presenting the Carollo Report. Laura Baumberger with Carollo will present the Report prepared by Carollo titled "Review of the Proposed Lower Shell Creek MFL". This Report is clearly in response to the MFL proposed by SWFWMD. It is puzzling to hear District staff say they are not prepared to make remarks and that the letter mod is being requested by the City. I believe it is more correct to present, the letter mod was proposed by District staff, and the City and has reviewed and approved this approach.

It will be odd for the District to neglect to present the background approach and recommendations, and the letter mod as the implementation, which you have named Recovery Strategy.

Also you may elect to inform City Council of the remarks provided at the meeting in Punta Gorda August 26, when Randy Smith advised Greg Murphy that the proposed letter mod was take or leave it, and if the City did not agree with the letter mod, then next step would be enforcement action.

We have scheduled the MFL presentation for the Oct 20 City Council meeting, at City Council chambers. I think it will be useful for District staff to present the MFL program for Shell Creek, and District staff's regulatory approach. Based on Randy Smith's remarks to Greg Murphy, City staff and District staff are in agreement to approve the letter mod. City staff is not opposed to the District MFL approach, and will be recommending approval of the letter mod. I think it will be helpful for District staff to present remarks to the City Council about the background and purpose of MFL, and why this letter mod is necessary and recommended.

Please let me know if you will have a presentation, and if yes, please forward this via email prior to Oct 13, 1 week prior to the meeting so we can include your presentation with the agenda item.

Steve Adams
Utilities Engineering Manager
Utilities

City of Punta Gorda
326 West Marion Avenue
Punta Gorda, Florida 33950
941-575-3325
www.CityofPuntaGordaFL.com

From: Chris Zajac
To: Brian Fuller
Cc: Randy Smith; Owen Thornberry; Yonas Ghile; Doug Leeper
Subject: RE: Punta Gorda
Date: Friday, October 8, 2021 9:46:50 AM

Brian,

Thank you for being so proactive is preparing for the adoption of minimum flows for Lower Shell Creek. We are currently working on the development of a form that will meet the specific needs of the City as well as the District. We should have something for your review shortly.

Chris Zajac
Environmental Flows and Levels Manager
Natural Systems and Restoration Bureau
2379 Broad Street
Brooksville, FL 34604
(352) 796-7211, Ext. 4413
(352) 586-3776
Chris.Zajac@WaterMatters.org

From: Brian Fuller <BFuller@cityofpuntagordafl.com>
Sent: Thursday, October 7, 2021 12:07 PM
To: Chris Zajac <Chris.Zajac@swfwmd.state.fl.us>
Subject: Punta Gorda

[EXTERNAL SENDER] Use caution before opening.
Chris,

Can you send a copy of the District approved forms for the monthly MFL report?

Thanks,

Brian Fuller
Utilities Supervisor
Water Treatment Plant

City of Punta Gorda
38100 Washington Loop Road
Punta Gorda, Florida 33982
941-575-5018
www.CityofPuntaGordaFL.com



Florida has a very broad public records law. Most written communications to City officials regarding City business are public records available to the public and media upon request. Your e-mail communications may be subject to public disclosure.

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From: Chris Zajac
To: Doug Leeper
Subject: FW: Draft Permit Conditions
Date: Friday, October 8, 2021 9:48:40 AM
Attachments: City of Punta Gorda City Council Agenda Item_CMZ_edits.doc
DRAFT LETTER MODIFICATION City of Punta GordaV2.docx

Doug,

Sorry I missed you on the cc list this morning.

Chris Zajac
Environmental Flows and Levels Manager
Natural Systems and Restoration Bureau
2379 Broad Street
Brooksville, FL 34604
(352) 796-7211, Ext. 4413
(352) 586-3776
Chris.Zajac@WaterMatters.org

From: Chris Zajac
Sent: Friday, October 8, 2021 9:41 AM
To: Steve Adams <SAdams@cityofpuntagordafl.com>
Cc: Owen Thornberry <Owen.Thornberry@swfwmd.state.fl.us>; Randy Smith <Randy.Smith@swfwmd.state.fl.us>; Adrienne E. Vining <Adrienne.Vining@swfwmd.state.fl.us>; Jennette Seachrist <Jennette.Seachrist@swfwmd.state.fl.us>; Yonas Ghile <Yonas.Ghile@swfwmd.state.fl.us>; Laura Baumberger <LBaumberger@carollo.com>; Chuck Pavlos <CPavlos@cityofpuntagordafl.com>; Eric DeHaven <Eric.Dehaven@swfwmd.state.fl.us>; Gregory B. Murray <GMurray@cityofpuntagordafl.com>
Subject: RE: Draft Permit Conditions

Steve,

Thank you and your team for meeting with us to discuss the draft water use permit conditions on October 5th.

Let me first apologize for any misunderstanding regarding District staff providing a presentation to your City Council.

We are prepared to present why and how the MFL was developed and introduce why the voluntary permit modification was proposed. We agree the order should be for District staff to present the why and how the MFL was developed and introduce why the voluntary permit modification was proposed, followed by Laura's review and the City's recommendation to approve. Again, I apologize for the misunderstanding and will forward the District presentation on the development of Lower Shell Creek MFLs at least one week prior to the meeting scheduled for the 20th of October.

We would also appreciate a chance to review Laura's presentation in advance of the October 20th meeting so that my team can review the information being presented to ensure consistent information is presented to your City Council.

Also, I've attached some suggested edits, as requested, for the agenda item summary form. I've also included the draft WUP conditions with the edits we discussed on the 5th (presuming this will be an exhibit).

I look forward to our continued collaboration and the City's support in protecting our water resources while balancing the need for current and future water use.

Chris Zajac
Environmental Flows and Levels Manager
Natural Systems and Restoration Bureau
2379 Broad Street
Brooksville, FL 34604
(352) 796-7211, Ext. 4413
(352) 586-3776
Chris.Zajac@WaterMatters.org

From: Steve Adams <SAdams@cityofpuntagordafl.com>
Sent: Thursday, October 7, 2021 8:56 AM
To: Chris Zajac <Chris.Zajac@swfwmd.state.fl.us>
Cc: 'Laura Baumberger' <LBaumberger@carollo.com>; Chuck Pavlos <CPavlos@cityofpuntagordafl.com>
Subject: FW: Draft Permit Conditions

[EXTERNAL SENDER] Use caution before opening.
Hi Chris:

I checked our calendar for agenda items today. The schedule for October 20 agenda items is as follows:

1. Send all agenda items, with presentation materials to City Manager by Oct 8
2. Agenda is completed Oct 13, and is uploaded to web page Oct 15

It looks like Oct 8 is preferred, but we could still make get last minute additions up to Oct 13. We are requesting District staff present MFL background and regulatory approach to City Council. Please send your power point materials before Oct 13.

Please review the draft Agenda Item, above, and give me your comments and recommendations for changes - additions.

If you need us to move MFL to a future meeting let me know.

Steve Adams
Utilities Engineering Manager
Utilities

City of Punta Gorda
326 West Marion Avenue
Punta Gorda, Florida 33950
941-575-3325
www.CityofPuntaGordaFL.com

From: Steve Adams
Sent: Monday, October 04, 2021 3:50 PM
To: 'Chris Zajac' <Chris.Zajac@swfwmd.state.fl.us>
Cc: Laura Baumberger (LBaumberger@carollo.com) <LBaumberger@carollo.com>
Subject: RE: Draft Permit Conditions

I am preparing an agenda item cover sheet for October 20 City Council meeting. Please review and advise if you have any comments and recommendations of this sheet. Please advise if you are planning to attend the Oct 20 meeting and if you will be presenting materials. The slides attached above will be updated by Laura prior to Oct 20.

Steve Adams
Utilities Engineering Manager
Utilities

City of Punta Gorda
326 West Marion Avenue
Punta Gorda, Florida 33950
941-575-3325
www.CityofPuntaGordaFL.com

From: Chris Zajac [mailto:Chris.Zajac@swfwmd.state.fl.us]
Sent: Friday, October 01, 2021 1:03 PM
To: Steve Adams <SAdams@cityofpuntagordafl.com>
Cc: Steven Leonard <SLeonard@cityofpuntagordafl.com>; Chuck Pavlos <CPavlos@cityofpuntagordafl.com>; Owen Thornberry <Owen.Thornberry@swfwmd.state.fl.us>;

Darrin Herbst <Darrin.Herbst@swfwmd.state.fl.us>; April D. Breton <April.Breton@swfwmd.state.fl.us>; Doug Leeper <Doug.Leeper@swfwmd.state.fl.us>; Yonas Ghile <Yonas.Ghile@swfwmd.state.fl.us>; Randy Smith <Randy.Smith@swfwmd.state.fl.us>; Eric DeHaven <Eric.Dehaven@swfwmd.state.fl.us>; Jennette Seachrist <Jennette.Seachrist@swfwmd.state.fl.us>; Adrienne E. Vining <Adrienne.Vining@swfwmd.state.fl.us>; Gregory B. Murray <GMurray@cityofpuntagordafl.com>
Subject: [EXTERNAL] Draft Permit Conditions

MESSAGE FROM AN EXTERNAL SENDER: Please use caution when opening attachments, clicking links, or replying to this message.

Steve,

Please find attached one file containing the draft water use permit conditions for our discussion next Tuesday, October 5th at 4:00 p.m. District staff look forward to discussing these draft conditions with City staff.

Chris Zajac
Environmental Flows and Levels Manager
Natural Systems and Restoration Bureau
2379 Broad Street
Brooksville, FL 34604
(352) 796-7211, Ext. 4413
(352) 586-3776
Chris.Zajac@WaterMatters.org

AGENDA ITEM _____

CITY COUNCIL
CITY OF PUNTA GORDA

OCTOBER 20, 2021

_____ Public Hearing	_____ New Business
_____ Quasi-Judicial Public Hearing	_____ Unfinished Business
_____ Ordinance/Resolution	_____ Other
_____ Consent	_____ City Attorney

TITLE:
Consideration to modify the City of Punta Gorda Shell Creek Water Treatment Plant Water Use Permit (#20000871.013) to comply with proposed Minimum Flows for Lower Shell Creek

FUNDS:

SUMMARY EXPLANATION/BACKGROUND INFORMATION:
The Southwest Florida Water Management District (SWFWMD) will present the proposed Minimum Flows and Levels (MFLs) for Lower Shell Creek (LSC). District staff, and City staff with assistance by Carollo Engineering, have reviewed the proposed MFLs for LSC and a related water use permit modification. SWFWMD staff in collaboration with City Utility staff have developed a schedule of water withdrawals based on flow regimes named Block 1, Block 2, and Block 3 that would meet the proposed MFLs while maintaining the City's water supply needs through the year 2040. The Block 1 withdrawal schedule will restrict surface water withdrawals to the Shell Creek Water Treatment facility. The reduction of water supply during Block1 will be be replaced with water supplied by the 4 million gallon per day (MGD) Reverse Osmosis (RO) facility and in rare cases water transfers may be needed from the Peace River Manasota Regional Water Supply Authority (Authority) through the Peace pipeline which interconnects the City with the Authority. The City will be able to transfer water back to the Authority when flows are sufficient to maintain a net $0 cost to the City. Carollo Engineering will present their findings regarding how the proposed MFLs would affect the City's water supply needs.

EXHIBITS:
Presentation by Yonas Ghile, Lead Hydrologist, SWFWMD
Presentation by Laura Baumberger P.E. Carollo Engineers
Draft Letter Modification Water Use Permit No: 817.013
Review of the Proposed Lower Shell Creek MFL, Carollo, June 2021report

RECOMMENDED ACTION: Approve recommendation to modify the City's Water Use Permit to incorporate the schedule of water withdrawals from Lower Shell Creek.

DEPARTMENT DIRECTOR'S SIGNATURE: **DATE:**

Utilities Director

Draft LETTER MODIFICATION
Water Use Permit No: 871.013
Attachment A

MODIFICATIONS

The following constitutes modifications to the terms and conditions of Water Use Permit No. 871.013, effective TodaysDate. This modification adds a surface water diversion schedule and specific monthly reporting requirements.

1. There is no change in authorized quantities, which remain 8.088 MGD on an annual average basis, and 11.728 MGD on a peak month basis.

2. Special Condition Nos. 21 and 22 are added to the permit as follows:

21. Authorized surface water withdrawals at DID No. 1 are based on the adjusted previous day's flow as measured in cubic feet per second (cfs) at the United States Geological Survey (USGS) Shell Creek near Punta Gorda, FL Gage No. 02298202. The previous day's flow will be converted to million gallons per day (mgd) and adjusted by adding the City of Punta Gorda's previous day's withdrawal (mgd) and subtracting the monthly estimated excess agricultural runoff (mgd) found in Table 2. There are three blocks based on flow. Table 1 provides the maximum surface water withdrawals authorized:

Table 1: Flow-based Withdrawals at DID No. 1

Flow-based block	If adjusted flow on previous day is:		Maximum withdrawals
1	≤36.2 mgd	January - April	4.22 mgd
		May - September	4.05 mgd
		October	3.40 mgd
		November - December	4.42 mgd
2	>36.2 mgd and ≤51 mgd		23% of flow
	>51 mgd and ≤88.5 mgd		11.73 mgd
3	>88.5 mgd		11.73 mgd

Table 2: Estimated Excess Agricultural Runoff (mgd) for Previous Day Flow Adjustment

January	February	March	April	May	June	July	August	September	October	November	December
8.5	11.0	14.7	8.7	6.8	27.0	10.1	0.0	0.0	0.7	5.3	6.0

22. Flow in the lower Shell Creek shall be read at the USGS Shell Creek near Punta Gorda FL Gage No. 02298202 (District ID No. 70). Flow shall be read on a daily basis, adjusted, and reported to the Water Use Permit Bureau (using District-approved forms) on or before the tenth (10th) day of the following month. The recordings (raw and adjusted) shall include daily average water flow in million gallons per day (mgd) and cubic feet per second (cfs). Surface water withdrawals at DID No. 1, now based on the above flow calculation, shall also be recorded on a daily basis, and reported to the Water Use Permit Bureau on or before the tenth (10th) day of the following month.

All other terms and conditions of this permit shall remain unchanged unless specifically modified by this Letter Modification, and this permit will expire on July 31, 2027.

DRAFT

From: Chris Zajac
To: Steve Adams
Cc: "Laura Baumberger"; Yonas Ghile; Randy Smith; Doug Leeper
Subject: RE: Draft Permit Conditions
Date: Friday, October 8, 2021 10:02:15 AM

Steve,

Understood. We are previewing the presentation with our management team Tuesday (October 12th) and will send the final presentation to you immediately after. I look forward to seeing you on the 20th.

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Environmental Flows and Levels Manager
Natural Systems and Restoration Bureau
2379 Broad Street
Brooksville, FL 34604
(352) 796-7211, Ext. 4413
(352) 586-3776
Chris.Zajac@WaterMatters.org

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Cc: 'Laura Baumberger' <LBaumberger@carollo.com>; Yonas Ghile <Yonas.Ghile@swfwmd.state.fl.us>
Subject: RE: Draft Permit Conditions

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Utilities

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From: Laura Baumberger
To: Chris Zajac; Steve Adams
Cc: Yonas Ghile; Randy Smith; Chuck Pavlos; Doug Leeper
Subject: RE: Draft Permit Conditions
Date: Friday, October 8, 2021 10:27:19 AM
Attachments: 20211020_council meeting_city of punta gorda MFL.pptx

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Good morning,

Attached are the slides that I developed in conjunction with City staff. Since Yonas will now be presenting ahead of Carollo, I would suggest that I remove Slides 2-9 from my presentation and Yonas can incorporate these into his presentation.

Please let me know if any thoughts or comments.

Thanks
Laura

Laura Baumberger, PE
Senior Project Manager | Vice President
301 North Cattlemen Road, Suite 302 | Sarasota, FL 34232
O 941.371.9832 | **C** 941.400.2320
lbaumberger@carollo.com | carollo.com

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Lower Shell Creek Minimum Flow and Level (MFL)

Laura Baumberger, PE

carollo

City of Punta Gorda / City Council / October 20, 2021

1

Overview and Background of MFL Legislation

2

// Background and Definitions

What are minimum flows and minimum water levels (MFLs)?

In short, an MFL sets a limit on how much water can be withdrawn from various water resources to prevent significant harm occurring to those resources or the ecology of the area.

What does "significant harm" mean?

The Florida legislature did not define the term 'significant harm.' However, the District has developed criteria for significant harm to various types of water resources. The criteria are based on environmental changes resulting from variances in water flows or levels. Their use for setting MFLs has been reviewed and accepted by numerous panels of independent scientists.

Why does the Southwest Florida Water Management District establish MFLs?

Florida law (Chapter 373.042, Florida Statutes) requires the state water management districts or the Florida Department of Environmental Protection to establish MFLs. Rivers, streams, estuaries and springs require minimum flows, while minimum levels are developed for lakes, wetlands and aquifers.

Source: SWFWMD

3

3

// Overview of the Lower Shell Creek MFL

- The District developed a proposed MFL for the Lower Shell Creek based on flow-related changes in salinity-based habitats.
- Suitable habitat areas were characterized for eight fish and invertebrate species.
- MFL developed to maintain 85% of the 2 parts per thousand or less salinity-based habitat.
- The Lower Shell Creek MFL was developed in conjunction with the Lower Peace River MFL to consider the strong hydrologic relationship between the creek, the river, and Charlotte Harbor.

4

4

// History/Timeline of the Lower Shell Creek MFL

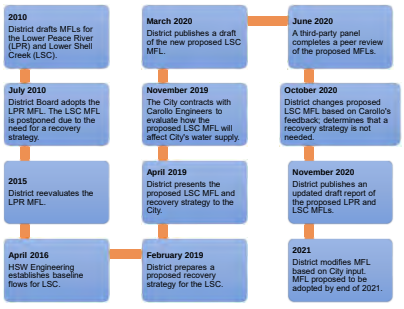
2010	2010-2020	2020-2021
The District drafts the first Lower Shell Creek/Peace River MFLs. The Peace River MFL is adopted. The Shell Creek MFL is postponed.	The District collects additional information used to develop a hydrologic model.	The District proposes a new Shell Creek MFL using the additional data. The District, City, and Carollo collaborate to review and determine impacts of the proposed Shell Creek MFL.

- Improvements to the MFL development model included:
  - Adding the City's new reverse osmosis facility and Authority interconnection as water supply sources.
  - Updating monthly peaking factors and potable water demand projections.
  - Editing the District's MFL water supply reliability model to better represent the City's water supply operations.

5

5

// History/Timeline of the Lower Shell Creek (LSC) MFL



6

6

// Recovery and Prevention Strategies

What happens if MFLs are not being met?

A recovery strategy is implemented if an MFL is not currently met. A prevention strategy is implemented if an MFL is projected to not be met in the next 20 years. Prevention and recovery strategies allow for providing sufficient water supplies for all existing and projected water uses through development of additional water supplies, implementation of conservation and efficiency measures, and regulatory measures. The District funds the initiatives associated with prevention and recovery strategies with help from local governments and regional water supply authorities. The intent of these strategies is to achieve recovery to the established MFL as soon as possible or prevent the existing flow or water level from falling below the established MFL.

Source: SWFWMD

7

Proposed Lower Shell Creek MFL

8

// Proposed Lower Shell Creek MFL

Proposed Withdrawals		
Block: Shell Creek Inflow	**Month**	**Allowable Withdrawal**
Block 1: 0 - 56 cfs (0 - 36.2 mgd)	Jan. - Apr.	4.22 mgd
	May - Sept.	4.05 mgd
	October	3.40 mgd
	Nov. - Dec.	4.42 mgd
Block 2: >56 - 137 cfs (>36.2 - 88.5 mgd)	All Months	23% of inflow (8.4 – 11.73 mgd)
Block 3: >137 cfs (>88.5 mgd)	All Months	40% of inflow (permit limit of 11.73 mgd)

9

City Water Supply and Projected Demands

10

// Summary of the City's Water Supply

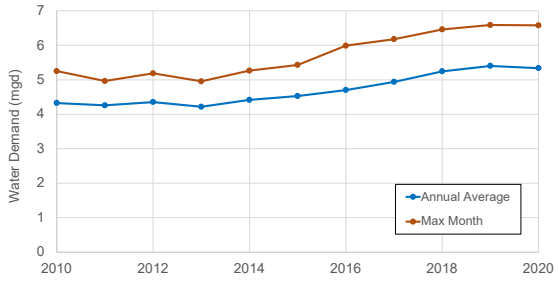
1. City's water use permit (WUP) allows annual average withdrawal of 8.088 mgd and peak month withdrawal of 11.728 mgd.
   - In 2020, the average water withdrawal was 5.34 mgd.
2. Shell Creek WTP treatment capacity is 10 mgd.
3. Reverse Osmosis (RO) Facility brought online in 2020 and can treat up to 4.0 mgd of brackish groundwater.
4. Peace River Manasota Regional Water Supply Authority (PRMRWSA) pipeline can be used to transfer water as needed.

11



12

Historical Water Demands



13

13

// City's Projected Water Demands

Year	Estimated Population	Annual Average Water Demand (mgd)
2020	39,875	5.69
2025	42,717	5.99
2030	44,632	6.24
2035	46,035	6.42
2040	47,293	6.59

14

14

// Monthly Peaking Factors and Water Demands

Month	Peaking Factor	2020 Demand	2040 Demand
	Annual Average	*5.34*	*6.59*
January	1.04	5.62	6.86
February	1.05	5.67	6.93
March	1.13	6.10	7.46
April	1.17	6.32	7.72
May	1.08	5.83	7.13
June	0.88	4.75	5.81
July	0.78	4.21	5.15
August	0.67	3.62	4.42
September	0.84	4.54	5.54
October	1.03	5.56	6.80
November	1.20	6.48	7.92
December	1.11	5.99	7.33

15

15

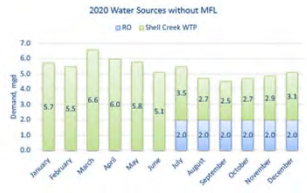
City's Water Supply without MFL

16

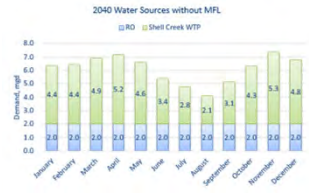
16

// Reliability of City's Water Supply (Current and 2040)

2020 AADF = 5.34 mgd



2040 AADF = 6.59 mgd



17

17

City's Water Supply with MFL (2020)

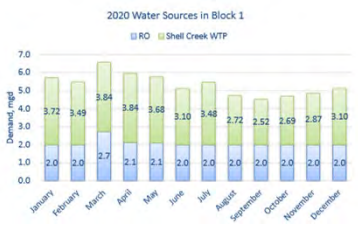
18

18

// 2020 Monthly Average Water Supply

2020 Monthly Average
Demands in Block 1

- RO runs at 2.0 mgd unless limited by MFL, then RO is increased (March, April, and May)
- Allowable reservoir withdrawals:
  - 4.22 mgd in Jan – Apr
  - 4.05 mgd in May – Sept
  - 3.40 mgd in Oct
  - 4.42 mgd in Nov – Dec
- Water supplied by Shell Creek WTP accounts for treatment losses



* Demand is 2020 monthly averages.

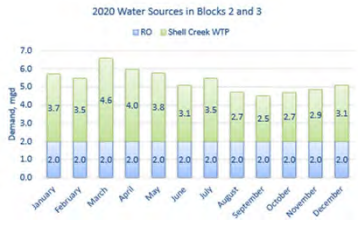
19

19

// 2020 Monthly Average Water Supply

2020 Monthly Average
Demands in Blocks 2/3

- RO runs at 2.0 mgd
- Allowable reservoir withdrawals:
  - 8.4 mgd – 11.73 mgd
- Water supplied by Shell Creek WTP accounts for treatment losses



* Demand is 2020 monthly averages.

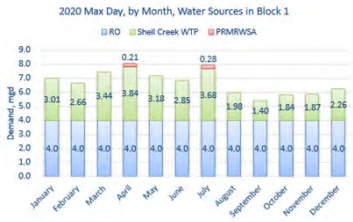
20

20

// Water Supply for 2020 Maximum Day Demand

2020 Max Day Demand if in Block 1

- RO runs at 4.0 mgd
- Allowable reservoir withdrawal:
  - 4.22 mgd in Jan – Apr
  - 4.05 mgd in May – Sept
  - 3.40 mgd in Oct
  - 4.42 mgd in Nov – Dec
- Water supplied by Shell Creek WTP accounts for treatment losses
- May need a small water transfer from PRMRWSA in April and July



* Demand is 2020 maximum day in each month.

21

21

City's Water Supply with MFL (2040)

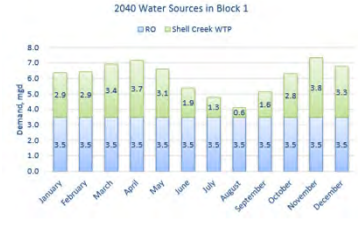
22

22

// 2040 Monthly Average Water Supply

2040 Monthly Average
Demands in Block 1

- RO runs at 3.5 mgd
- Block 1 of proposed MFL allowable reservoir withdrawals:
  - 4.22 mgd in Jan – Apr
  - 4.05 mgd in May – Sept
  - 3.40 mgd in Oct
  - 4.42 mgd in Nov – Dec
- Water supplied by Shell Creek WTP accounts for treatment losses



* Demand is projected annual average times monthly peaking factors

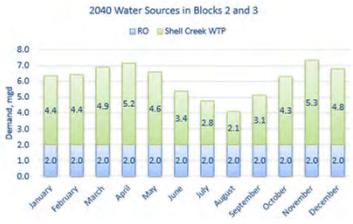
23

23

// 2040 Monthly Average Water Supply

2040 Monthly Average
Demands in Blocks 2/3

- RO runs at 2.0 mgd
- Allowable reservoir withdrawals:
  - 8.4 mgd – 11.73 mgd
- Water supplied by Shell Creek WTP accounts for treatment losses



* Demand is projected annual average times monthly peaking factors

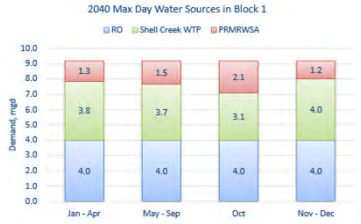
24

24

// Water Supply at 2040 Maximum Day Demand

2040 Max Day Demand in Block 1

- RO runs at 4.0 mgd
- Allowable reservoir withdrawals:
  - 4.22 mgd in Jan – Apr
  - 4.05 mgd in May – Sept
  - 3.40 mgd in Oct
  - 4.42 mgd in Nov – Dec
- Water supplied by Shell Creek WTP accounts for treatment losses
- Would need water transfer from PRMRWSA



* Demand is 2040 projected demand times 1.5 max day peaking factor

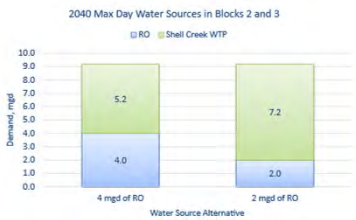
25

25

// Water Supply at 2040 Maximum Day Demand

2040 Max Day Demand in Blocks 2/3

- RO runs at 4.0 mgd or 2.0 mgd
- Allowable reservoir withdrawal:
  - 8.4 mgd – 11.73 mgd
- Water supplied by Shell Creek WTP accounts for treatment losses



* Demand is 2040 projected demand times 1.5 max day peaking factor

26

26

Daily Implementation of MFL

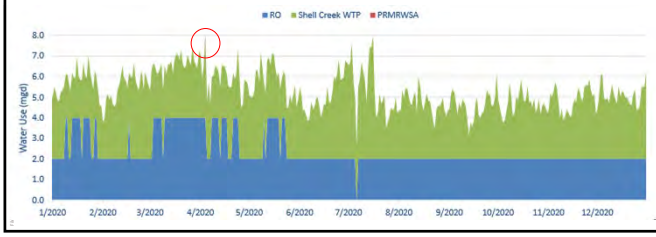
27

27

// 2020 Daily Implementation Analysis of MFL

Daily water supply sources in 2020 if the MFL were in place.

- Operate RO Facility at 2 mgd as a baseline and increase to 4 mgd when needed.
- The City would have needed a 0.21 MG transfer from PRMRWSA on April 4, 2020.



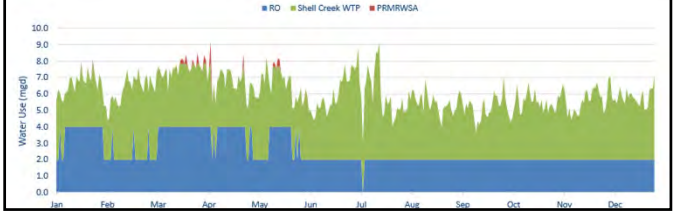
28

28

// 2040 Daily Implementation Analysis of MFL

Predicted daily water supply sources in 2040 with MFL.

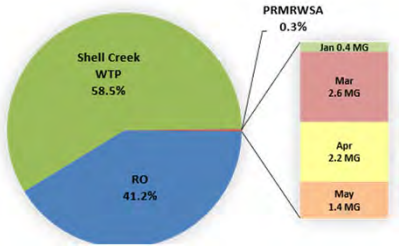
- Based on 2020 Shell Creek flows.
- Operate RO Facility at 2 mgd as a baseline and increase to 4 mgd when needed.
- The City would need a water transfer from PRMRWSA in January, March, April, and May.



29

29

// 2040 Daily Implementation Analysis of MFL



30

30



31

// Conclusions

- The District worked with the City to develop an MFL for Shell Creek that meets the environmental restoration and protection intent, but also allows the City to meet their water supply needs.
  - The MFL is projected to be met 99.5% percent of the time for the next 20 years.
  - The projected water supply reliability using only RO and the reservoir is 99.7% for 2040 (based on a daily implementation analysis using 2020 hydrologic conditions).
  - The remaining 0.3% could be met through transfer from the PRMRWSA, which could be returned when the City is not limited by the MFL (Blocks 2 and 3) to have a net zero transfer at the end of a year.
- The District plans to present the proposed Lower Shell Creek MFL to their Governing Board by the end of 2021.
- The City should work with PRMRWSA to amend the Water Systems Interconnect and Water Transfer Contract to document that PRMRWSA will assist the City in meeting their water demands as needed under the MFL conditions.
- A modification of the City's water use permit to incorporate the proposed withdrawal limits will allow the MFL to be met.

32

32

From:	Yonas Ghile
To:	Laura Baumberger; Chris Zajac; Steve Adams
Cc:	Randy Smith; Chuck Pavlos; Doug Leeper
Subject:	RE: Draft Permit Conditions
Date:	Friday, October 8, 2021 12:22:31 PM

Thank you Laura for sharing your presentation. I have a question on Slide 21. Why does the city needs to purchase water from the Authority in April and July when they can meet it using the reservoir and the RO?

Thanks

From: Laura Baumberger <LBaumberger@carollo.com>
Sent: Friday, October 8, 2021 10:25 AM
To: Chris Zajac <Chris.Zajac@swfwmd.state.fl.us>; Steve Adams <SAdams@cityofpuntagordafl.com>
Cc: Yonas Ghile <Yonas.Ghile@swfwmd.state.fl.us>; Randy Smith <Randy.Smith@swfwmd.state.fl.us>; Chuck Pavlos <CPavlos@cityofpuntagordafl.com>; Doug Leeper <Doug.Leeper@swfwmd.state.fl.us>
Subject: RE: Draft Permit Conditions

[EXTERNAL SENDER] Use caution before opening.
Good morning,

Attached are the slides that I developed in conjunction with City staff. Since Yonas will now be presenting ahead of Carollo, I would suggest that I remove Slides 2-9 from my presentation and Yonas can incorporate these into his presentation.

Please let me know if any thoughts or comments.

Thanks
Laura

Laura Baumberger, PE
Senior Project Manager | Vice President
301 North Cattlemen Road, Suite 302 | Sarasota, FL 34232
O 941.371.9832 | **C** 941.400.2320
lbaumberger@carollo.com | carollo.com

From: Chris Zajac <Chris.Zajac@swfwmd.state.fl.us>
Sent: Friday, October 8, 2021 10:02 AM
To: Steve Adams <SAdams@cityofpuntagordafl.com>
Cc: Laura Baumberger <LBaumberger@carollo.com>; Yonas Ghile

<Yonas.Ghile@swfwmd.state.fl.us>; Randy Smith <Randy.Smith@swfwmd.state.fl.us>; Doug Leeper <Doug.Leeper@swfwmd.state.fl.us>
Subject: RE: Draft Permit Conditions

Steve,

Understood. We are previewing the presentation with our management team Tuesday (October 12th) and will send the final presentation to you immediately after. I look forward to seeing you on the 20th.

Chris Zajac
Environmental Flows and Levels Manager
Natural Systems and Restoration Bureau
2379 Broad Street
Brooksville, FL 34604
(352) 796-7211, Ext. 4413
(352) 586-3776
Chris.Zajac@WaterMatters.org

From: Steve Adams <SAdams@cityofpuntagordafl.com>
Sent: Friday, October 8, 2021 9:57 AM
To: Chris Zajac <Chris.Zajac@swfwmd.state.fl.us>
Cc: 'Laura Baumberger' <LBaumberger@carollo.com>; Yonas Ghile <Yonas.Ghile@swfwmd.state.fl.us>
Subject: RE: Draft Permit Conditions

[EXTERNAL SENDER] Use caution before opening.
Many Thanks for your assistance with the Agenda Item cover sheet. We will make these changes as shown in your attachment. Laura will be sending you slides she has prepared . If Yonas has a power point file of presentation slides, we prefer to have this file before Oct 13, so we can include this with the agenda item which is published to the City web side with the agenda.

Steve Adams
Utilities Engineering Manager
Utilities

City of Punta Gorda
326 West Marion Avenue
Punta Gorda, Florida 33950
941-575-3325
www.CityofPuntaGordaFL.com

From: Chris Zajac [mailto:Chris.Zajac@swfwmd.state.fl.us]
Sent: Friday, October 08, 2021 9:41 AM
To: Steve Adams <SAdams@cityofpuntagordafl.com>
Cc: Owen Thornberry <Owen.Thornberry@swfwmd.state.fl.us>; Randy Smith <Randy.Smith@swfwmd.state.fl.us>; Adrienne E. Vining <Adrienne.Vining@swfwmd.state.fl.us>; Jennette Seachrist <Jennette.Seachrist@swfwmd.state.fl.us>; Yonas Ghile <Yonas.Ghile@swfwmd.state.fl.us>; Laura Baumberger <LBaumberger@carollo.com>; Chuck Pavlos <CPavlos@cityofpuntagordafl.com>; Eric DeHaven <Eric.Dehaven@swfwmd.state.fl.us>; Gregory B. Murray <GMurray@cityofpuntagordafl.com>
Subject: [EXTERNAL] RE: Draft Permit Conditions

MESSAGE FROM AN EXTERNAL SENDER: Please use caution when opening attachments, clicking links, or replying to this message.

Steve,

Thank you and your team for meeting with us to discuss the draft water use permit conditions on October 5th.

Let me first apologize for any misunderstanding regarding District staff providing a presentation to your City Council.

We are prepared to present why and how the MFL was developed and introduce why the voluntary permit modification was proposed. We agree the order should be for District staff to present the why and how the MFL was developed and introduce why the voluntary permit modification was proposed, followed by Laura's review and the City's recommendation to approve. Again, I apologize for the misunderstanding and will forward the District presentation on the development of Lower Shell Creek MFLs at least one week prior to the meeting scheduled for the 20th of October.

We would also appreciate a chance to review Laura's presentation in advance of the October 20th meeting so that my team can review the information being presented to ensure consistent information is presented to your City Council.

Also, I've attached some suggested edits, as requested, for the agenda item summary form. I've also included the draft WUP conditions with the edits we discussed on the 5th (presuming this will be an exhibit).

I look forward to our continued collaboration and the City's support in protecting our water resources while balancing the need for current and future water use.

Chris Zajac
Environmental Flows and Levels Manager
Natural Systems and Restoration Bureau

2379 Broad Street
Brooksville, FL 34604
(352) 796-7211, Ext. 4413
(352) 586-3776
Chris.Zajac@WaterMatters.org

From: Steve Adams <SAdams@cityofpuntagordafl.com>
Sent: Thursday, October 7, 2021 8:56 AM
To: Chris Zajac <Chris.Zajac@swfwmd.state.fl.us>
Cc: 'Laura Baumberger' <LBaumberger@carollo.com>; Chuck Pavlos <CPavlos@cityofpuntagordafl.com>
Subject: FW: Draft Permit Conditions

[EXTERNAL SENDER] Use caution before opening.
Hi Chris:

I checked our calendar for agenda items today. The schedule for October 20 agenda items is as follows:

1. Send all agenda items, with presentation materials to City Manager by Oct 8
2. Agenda is completed Oct 13, and is uploaded to web page Oct 15

It looks like Oct 8 is preferred, but we could still make get last minute additions up to Oct 13. We are requesting District staff present MFL background and regulatory approach to City Council. Please send your power point materials before Oct 13.

Please review the draft Agenda Item, above, and give me your comments and recommendations for changes - additions.

If you need us to move MFL to a future meeting let me know.

Steve Adams
Utilities Engineering Manager
Utilities

City of Punta Gorda
326 West Marion Avenue
Punta Gorda, Florida 33950
941-575-3325
www.CityofPuntaGordaFL.com

From: Steve Adams
Sent: Monday, October 04, 2021 3:50 PM
To: 'Chris Zajac' <Chris.Zajac@swfwmd.state.fl.us>
Cc: Laura Baumberger (LBaumberger@carollo.com) <LBaumberger@carollo.com>
Subject: RE: Draft Permit Conditions

I am preparing an agenda item cover sheet for October 20 City Council meeting. Please review and advise if you have any comments and recommendations of this sheet. Please advise if you are planning to attend the Oct 20 meeting and if you will be presenting materials. The slides attached above will be updated by Laura prior to Oct 20.

Steve Adams
Utilities Engineering Manager
Utilities

City of Punta Gorda
326 West Marion Avenue
Punta Gorda, Florida 33950
941-575-3325
www.CityofPuntaGordaFL.com

From: Chris Zajac [mailto:Chris.Zajac@swfwmd.state.fl.us]
Sent: Friday, October 01, 2021 1:03 PM
To: Steve Adams <SAdams@cityofpuntagordafl.com>
Cc: Steven Leonard <SLeonard@cityofpuntagordafl.com>; Chuck Pavlos <CPavlos@cityofpuntagordafl.com>; Owen Thornberry <Owen.Thornberry@swfwmd.state.fl.us>; Darrin Herbst <Darrin.Herbst@swfwmd.state.fl.us>; April D. Breton <April.Breton@swfwmd.state.fl.us>; Doug Leeper <Doug.Leeper@swfwmd.state.fl.us>; Yonas Ghile <Yonas.Ghile@swfwmd.state.fl.us>; Randy Smith <Randy.Smith@swfwmd.state.fl.us>; Eric DeHaven <Eric.Dehaven@swfwmd.state.fl.us>; Jennette Seachrist <Jennette.Seachrist@swfwmd.state.fl.us>; Adrienne E. Vining <Adrienne.Vining@swfwmd.state.fl.us>; Gregory B. Murray <GMurray@cityofpuntagordafl.com>
Subject: [EXTERNAL] Draft Permit Conditions

MESSAGE FROM AN EXTERNAL SENDER: Please use caution when opening attachments, clicking links, or replying to this message.
Steve,

Please find attached one file containing the draft water use permit conditions for our discussion next Tuesday, October 5th at 4:00 p.m. District staff look forward to discussing these draft conditions with City staff.

Chris Zajac
Environmental Flows and Levels Manager
Natural Systems and Restoration Bureau
2379 Broad Street
Brooksville, FL 34604
(352) 796-7211, Ext. 4413
(352) 586-3776
Chris.Zajac@WaterMatters.org

Southwest Florida Water Management District

2379 Broad Street, Brooksville, Florida 34604-6899
(352) 796-7211 or 1-800-423-1476 (FL only)
WaterMatters.org

MEETING NOTICE

PUBLIC WORKSHOP
RECOMMENDED MINIMUM FLOWS FOR LOWER SHELL CREEK

WEDNESDAY, NOVEMBER 3, 2021

5:30 PM

WEBINAR (TEAMS MEETING)
TEAMS MEETING LINK: Click here to join the meeting
ALTERNATE TEAMS MEETING LINK: https://bit.ly/3arKI1S
TELEPHONE ONLY PARTICIPATION: 1-786-749-6127; CONFERENCE ID: 976 694 684#

All meetings are open to the public.

1. Meeting initiation by Doug Leeper, District MFLs Program Lead
2. Recommended minimum flows for Lower Shell Creek by Yonas Ghile, District Lead Hydrologist
3. Public comment facilitated by Doug Leeper

Participants will be asked to save their comments until the public comment portion of the meeting. If you wish to speak during the public comment period, please identify yourself to the moderator (Doug Leeper), who will then facilitate your input. Comments will be limited to three minutes per speaker. In appropriate circumstances, the moderator may grant exceptions to the three-minute limit.

If you have any questions concerning this meeting or would like to submit additional public comment on the recommended minimum flows for Lower Shell Creek, please contact Doug Leeper by telephone at 1-800-423-1476 or 352-796-7211, extension 4272, by email at doug.leeper@watermatters.org,or by mail at the address listed at the top of this agenda. Written comments should be submitted no later than November 24, 2021.

Bartow Office
170 Century Boulevard
Bartow, FL 33830-7700
863-534-1448 or 1-800-492-7862

Sarasota Office
78 Sarasota Center Blvd.
Sarasota, FL 34240-9711
941-377-3722 or 1-800-320-3503

Tampa Office
7601 US Highway 301 North
Tampa, FL 33637-6759
813-985-7481 or 1-800-836-0797

The Southwest Florida Water Management District (District) does not discriminate on the basis of disability. This nondiscrimination policy involves every aspect of the District's functions, including access to and participation in the District's programs, services and activities. Anyone requiring reasonable accommodation, or who would like information as to the existence and location of accessible services, activities, and facilities, as provided for in the Americans with Disabilities Act, should contact the Human Resources Office Chief, at 2379 Broad St., Brooksville, FL 34604-6899; telephone (352) 796-7211 or 1-800-423-1476 (FL only), ext. 4747; or email ADACoordinator@WaterMatters.org. If you are hearing or speech impaired, please contact the agency using the Florida Relay Service, 1-800-955-8771 (TDD) or 1-800-955-8770 (Voice). If requested, appropriate auxiliary aids and services will be provided at any public meeting, forum, or event of the District. In the event of a complaint, please follow the grievance procedure located at WaterMatters.org/ADA.

From:	Jeanette Lopez
To:	Doug Leeper; Yonas Ghile; Chris Zajac; Virginia Singer; Cara S. Martin; Dennis Ragosta; Cindy C. Rodriguez; Mike R. Bray; Chris A. Tumminia; Melissa Gulvin; Carrieann Adkins; Don Weaver; Susanna Martinez Tarokh; Randy Emberg; Barbara L. Garrett
Cc:	Chris Anastasiou; Xinjian Chen; Kristina Deak; Adrienne E. Vining; Ryan J. Pearson; Randy Smith
Subject:	RE: Request for Assistance-Nov 3 Lower Shell Crk MFLs Pub Mtg
Date:	Monday, October 11, 2021 12:59:22 PM

Doug,

The meeting has been posted and the agenda attached.

Jeanette

From: Doug Leeper <Doug.Leeper@swfwmd.state.fl.us>
Sent: Monday, October 11, 2021 11:19 AM
To: Jeanette Lopez <Jeanette.Lopez@swfwmd.state.fl.us>; Yonas Ghile <Yonas.Ghile@swfwmd.state.fl.us>; Chris Zajac <Chris.Zajac@swfwmd.state.fl.us>; Virginia Singer <Virginia.Singer@swfwmd.state.fl.us>; Cara S. Martin <Cara.Martin@swfwmd.state.fl.us>; Dennis Ragosta <Dennis.Ragosta@swfwmd.state.fl.us>; Cindy C. Rodriguez <Cindy.Rodriguez@swfwmd.state.fl.us>; Mike R. Bray <Mike.Bray@swfwmd.state.fl.us>; Chris A. Tumminia <Chris.Tumminia@swfwmd.state.fl.us>; Melissa Gulvin <Melissa.Gulvin@swfwmd.state.fl.us>; Carrieann Adkins <Carrieann.Adkins@swfwmd.state.fl.us>; Don Weaver <Don.Weaver@swfwmd.state.fl.us>; Susanna Martinez Tarokh <Susanna.MartinezTarokh@swfwmd.state.fl.us>; Randy Emberg <Randy.Emberg@swfwmd.state.fl.us>; Barbara L. Garrett <Barbara.Garrett@swfwmd.state.fl.us>
Cc: Chris Anastasiou <Chris.Anastasiou@swfwmd.state.fl.us>; Xinjian Chen <Xinjian.Chen@swfwmd.state.fl.us>; Kristina Deak <Kristina.Deak@swfwmd.state.fl.us>; Adrienne E. Vining <Adrienne.Vining@swfwmd.state.fl.us>; Ryan J. Pearson <Ryan.Pearson@swfwmd.state.fl.us>; Randy Smith <Randy.Smith@swfwmd.state.fl.us>
Subject: Request for Assistance-Nov 3 Lower Shell Crk MFLs Pub Mtg

Greetings:
As described below, I am requesting your assistance for a public meeting (webinar) scheduled for **11/03/2021** to solicit stakeholder input on recommended minimum flows for Lower Shell Creek.

Requests for Assistance

- **Jeanette:** Assist with finalization of the meeting agenda (done—thanks). Also, post workshop information on the District's Meeting and Events Calendar on our web page and ensure the event also gets posted to the District's MFLs Public Meeting page at: https://www.swfwmd.state.fl.us/projects/mfls/mfls-public-meetings.
- **Yonas and Chris (and me):** Serve as back-up for meeting facilitation and presentations on 11/03/2021 if either Yonas or I experience internet connectivity issues. Also, assist with monitoring meeting participation (e.g., participant's use of "hand-raising" and "chat" features in Teams, and note-taking on stakeholder comments for preparation of meeting minutes).
- **Virginia:** Provide notification of the meeting to District Governing Board members and District

advisory committee members, as necessary.

- **Randy/Barbara**: Provide a short URL for the Teams meeting (done—thanks). Assist with facilitation of the Teams meeting on 11/03/2021, as necessary.
- **Don:** Post updated draft document(s) (to be supplied by Yonas Ghile) associated with the minimum flows prior to the meeting.
- **Susanna:** Develop a media announcement/news release for the meeting, as necessary.
- **Melissa/Carrieann:** As appropriate, update information on the Lower Peace/Lower Shell Creek web page at: https://www.swfwmd.state.fl.us/projects/mfls/lower-peace-river/lower-shell-creek.
- **Cara/Dennis/Cindy:** Provide notification of the meeting to appropriate government officials and utilities staff, as necessary.
    - Note that I will be sending an email to selected staff at the other water management districts that work on MFLs, DEP Office of Water Policy staff, and FDACS and the FFWCC staff that we have previously worked with and have been identified as contacts for MFLs-related issues.
- **Mike/Chris:** Provide notification of the meeting in the FAR and, as necessary, in local newspapers. File a meeting summary (that Yonas or I will prepare) wherever it needs to be filed after the public meeting, if necessary.

Meeting Details (What/When/Where)

- A public meeting to discuss and solicit comment on recommended minimum flows for Lower Shell Creek will be held electronically via Microsoft Teams on **Wednesday, November 3, 2021, at 5:30 pm**.
- To join the meeting (Conference ID 976 694 684#) via Teams, please click-on or copy and paste the following link into your browser and follow the instructions provided at the website: Click here to join the meeting
    - Full URL: https://teams.microsoft.com/l/meetup-join/19%3ameeting_ZjUwNTFhN2ItMzZhOC00M2ZmLTk4YzEtMDE1NDFlYTliMDc3%40thread.v2/0?context=%7b%22Tid%22%3a%227d508ec0-09f9-4402-8304-3a93bd40a972%22%2c%22Oid%22%3a%224df5e295-84da-43eb-a6f9-f053183d9029%22%7d
    - Alternate, shortened URL: https://bit.ly/3arKI1S
    - Use of the Chrome browser is recommended for best compatibility with Teams.
    - For telephone-only participation, dial 1-786-749-6127 and when prompted enter the conference ID: 976694684#.

Additional Information

- The **Southwest Florida Water Management District** has scheduled a public meeting (webinar) to solicit stakeholder input on recommended minimum flows for Lower Shell Creek.
- **Minimum flows** are limits beyond which further water withdrawals would be significantly harmful to the water resources or ecology of the area.
- Minimum flows are established as rules by the District Governing Board and used in regulatory and planning programs.
- Recommended minimum flows for Lower Shell Creek were summarized in a draft report that

also addressed reevaluated minimum flows for the Lower Peace River and was presented to the District Governing Board and made available on the District web site in March 2020.

- Independent, scientific peer review of the report was conducted from March through June 2020.
- An updated version of the draft minimum flows report was posted on the District web site in November 2021 and the District Governing Board approved the minimum flows recommended for the Lower Peace River in December 2020. The approved minimum flows for the Lower Peace River were adopted into District rules in March 2021 and became effective in April 2021.
- A newer, updated version of the report will be posted to the District web site prior to the November 3, 2021, public workshop on recommended minimum flows for Lower Shell Creek.
- **A Lower Peace River/Lower Shell Creek web page that** includes links to the draft minimum flows report, a web forum used for the independent, scientific peer review of the minimum flows, and other relevant information **is available on the District web site at** https://www.swfwmd.state.fl.us/projects/mfls/lower-peace-river/lower-shell-creek.
- All public comment on the minimum flows received prior to, during and after the workshop will be summarized for consideration by the Governing Board.
    - **Written comments** on the recommended minimum flows for Lower Shell Creek are welcome and should be submitted no later than November 24, 2021 to: Doug Leeper, MFLs Program Lead with the District's Natural Systems and Restoration Bureau, via email (doug.leeper@watermaters.org) or by U.S. Mail (2379 Broad Street, Brooksville, Florida, 34604-6899). Doug can also be reached by phone at 1-800-423-1476 or 352-796,7211, extension 4272.
- District staff anticipate seeking Governing Board approval for initiation of rulemaking for the recommended minimum flows for Lower Shell Creek at the Board meeting scheduled for 12/15/2021.

Doug Leeper
MFLs Program Lead
Southwest Florida Water Management District
2379 Broad Street
Brooksville, FL 34604
1-800-423-1476 or 352-796-7211, ext. 4272
doug.leeper@watermatters.org or doug.leeper@swfwmd.state.fl.us

From:	Cindy C. Rodriguez
To:	Doug Leeper
Cc:	Cara S. Martin
Subject:	FW: SWFWMD Public Meeting for recommended MFLs on Lower Shell Creek
Date:	Tuesday, October 12, 2021 7:47:37 AM
Attachments:	Agenda LSC MFLs Pub Mtg 2021-11-03.pdf

Hi Doug,

Notice has been sent to all local government managers (City/County as well as utilities, public works and natural resources directors in the Heartland. See below.

Best,

Cindy C, Rodriguez, CPM
Sr. Government Affairs Regional Manager
Southwest Florida Water Management District
170 Century Blvd.
Bartow, FL
Office: (800) 492-7862 or (863) 534-1448 ext. 6000
Cell: (863) 698-8019

From: Cindy C. Rodriguez
Sent: Tuesday, October 12, 2021 7:45 AM
To: HARDEE~Lawrence McNaul <lawrence.mcnaul@hardeecounty.net>; HIGHLANDS - Gloria Rybinski <grybinski@highlandsfl.gov>; HIGHLANDS~Laurie Hurner <lhurner@highlandsfl.gov>; HIGHLANDS~Randy Vosburg <rvosburg@highlandsfl.gov>; POLK~Bill Beasley <billbeasley@polk-county.net>; POLK~Joe Halman <joehalman@polk-county.net>; POLK~Ryan Taylor <ryantaylor@polk-county.net>; POLK~Todd Bond <toddbond@polk-county.net>; BOWLING GREEN~Adam Thompson <athompson@bowlinggreenfl.org>; WAUCHULA~Terry Atchley <tatchley@cityofwauchula.com>; ZOLFO SPRINGS~Linda Roberson <townmanager@townofzolfo.com>; AUBURNDALE~Jeff Tillman <jtillman@auburndalefl.com>; BARTOW~George Long <glong@cityofbartow.net>; DAVENPORT~Kelly Callihan <kcallihan@mydavenport.org>; DUNDEE~Tandra Davis <tdavis@townofdundee.com>; EAGLE LAKE~Thomas Ernharth <ternharth@eaglelake-fla.com>; FORT MEADE~Jan Bagnall <jbagnall@cityoffortmeade.com>; FROSTPROOF~Nicole McDowell <nmcdowell@cityoffrostproof.com>; HAINES CITY~Deric Feacher <dfeacher@hainescity.com>; HIGHLAND PARK~Village Clerk Maggie Taylor <clerk@highlandpark-fl.org>; HILLCREST HEIGHTS~Town Clerk Larry Blackwelder <townofhillcrestheights@netzero.com>; LAKE ALFRED~Ryan Leavengood <rleavengood@mylakealfred.com>; LAKE HAMILTON~Sara Irvine <sara@townoflakehamilton.com>; LAKE WALES~James Slaton (Interim) <jslaton@lakewalesfl.gov>; LAKELAND~Shawn Sherrouse <shawn.sherrouse@lakelandgov.net>; POLK CITY~Patricia Jackson <patricia.jackson@mypolkcity.org>; WINTER HAVEN~Mike Herr <mherr@mywinterhaven.com>; WINTER HAVEN~T.Michael Stavres <mstavres@mywinterhaven.com>; AVON PARK~Mark Schrader <mschrader@avonpark.cc>; LAKE PLACID~Phil Williams <pwilliams.townoflakeplacid@gmail.com>; SEBRING~Scott Noethlich <scottnoethlich@mysebring.com>; Adriana Trujillo <atrujillo@hainescity.com>; Anderson, Bill <bill.anderson@lakelandgov.net>; Bartow~Tony

McKenley <tmckenley@cityofbartow.net>; Bob Boggus <bobboggus@mysebring.com>; Brian Fletcher~Eagle Lake Utilities <bfletcher@eaglelake-fla.com>; Britt, Mike (mbritt@mywinterhaven.com) <mbritt@mywinterhaven.com>; Clark, James (jclark@mylakealfred.com) <jclark@mylakealfred.com>; Freeman, Gary (gary_freeman@mylakeplacid.org) <gary_freeman@mylakeplacid.org>; Gary Hubbard (ghubbard@mywinterhaven.com) <ghubbard@mywinterhaven.com>; James Keene <jkeene@hainescity.com>; Jerry Wilbanks~Frostproof <jwilbanks@cityoffrostproof.com>; John Deaton~Lake Alfred Utilities <jdeaton@mylakealfred.com>; John Dickson~Auburndale Utilities <jdickson@auburndalefl.com>; John Wright~Mulberry Utilities <jwright@cityofmulberryfl.com>; Kirkland, Sarah <skirkland@lakewalesfl.gov>; Linda fisher~Haines City <lfisher@hainescity.com>; Mercer, Tracy <tmercer@hainescity.com>; Mike Martin~Bartow Utilities <mmartin.pw@cityofbartow.net>; Patrick Gill~Davenport Utilities <pgill@mydavenport.org>; Stripling, Mike <mstripling@mydavenport.org>; Tamara Richardson <tamararichardson@polk-county.net>; Tom Mattiacci (tom.mattiacci@lakelandgov.net) <tom.mattiacci@lakelandgov.net>; Vosburg, Randy <rvosburg@hcbcc.org>; Zolfo Springs Utilities <utilitiesclerk@townofzolfo.com>; Bartow~Bill Pickard <bpickard@cityofbartow.net>; Dundee Public Works~Bobby Westall <bwestall@townofdundee.com>; Fort Meade Public Works~Jackie Cannon <jcannon@cityoffortmeade.com>; Frostproof~Jerry Wilbanks <jwillbanks@cityoffrostproof.com>; Lake Hamilton Public Works~Nathan Lewellen <nathan@townoflakehamilton.com>; Lake Placid Utilities~Joe Barber <LPUtilities@mylakeplacid.org>; Polk City Public Works~Kathy Delp <kathy.delp@mypolkcity.org>; Sebring Utilities~Bobby Boggus <bboggus@mysebring.com>; Wauchula Utilities~James Braddock <jbraddock@cityofwauchula.com>; BOWLING GREEN~Bill Lawrence (City Mgr) <wlawrence@bowlinggreenfl.org>; HIGHLANDS~Dawn Ritter <dritter@highlandsfl.gov>; HIGHLANDS~Gator Howerton <chowerton@highlandsfl.gov>; LAKELAND~Laurie Smith <laurie.smith@lakelandgov.net>; POLK COUNTY <gayesharpe@polk-county.net>; POLK COUNTY - Hans Zarbock <hans.zarbock@polk-county.net>; POLK COUNTY~ H Zarbock <hanszarbock@polk-county.net>; POLK COUNTY~Tabith Biehl <tabithabiehl@polk-county.net>; WINTER HAVEN~MJ Carnevale <mcarnevale@mywinterhaven.com>
Subject: SWFWMD Public Meeting for recommended MFLs on Lower Shell Creek

Good morning all:

The **Southwest Florida Water Management District will hold** a public meeting (via webinar) to solicit stakeholder input on recommended minimum flows for Lower Shell Creek. See attached meeting agenda,

Meeting Details (What/When/Where)

- A public meeting to discuss and solicit comment on recommended minimum flows for Lower Shell Creek will be held electronically via Microsoft Teams on **Wednesday, November 3, 2021, at 5:30 pm**.
- To join the meeting (Conference ID 976 694 684#) via Teams, please click-on or copy and paste the following link into your browser and follow the instructions provided at the website: Click here to join the meeting
    - Full URL: https://teams.microsoft.com/l/meetup-

join/19%3ameeting_ZjUwNTFhN2ItMzZhOC00M2ZmLTk4YzEtMDE1NDFlYTliMDc3%40thread.v2/0?context=%7b%22Tid%22%3a%227d508ec0-09f9-4402-8304-3a93bd40a972%22%2c%22Oid%22%3a%224df5e295-84da-43eb-a6f9-f053183d9029%22%7d

- Alternate, shortened URL: https://bit.ly/3arKI1S
- Use of the Chrome browser is recommended for best compatibility with Teams.
- For telephone-only participation, dial 1-786-749-6127 and when prompted enter the conference ID: 976694684#.

Background information: Minimum flows are limits beyond which further water withdrawals would be significantly harmful to the water resources or ecology of the area. Minimum flows are established as rules by the District Governing Board and used in regulatory and planning programs.

This is a process: Recommended minimum flows for Lower Shell Creek were summarized in a draft report that also addressed reevaluated minimum flows for the Lower Peace River and was presented to the District Governing Board/ made available on the District web site in March 2020. Independent, scientific peer review of the report was conducted from March through June 2020 and an updated version of the draft minimum flows report was posted on the District web site in November 2021. The District Governing Board approved the minimum flows recommended for the Lower Peace River in December 2020. The approved minimum flows for the Lower Peace River were adopted into District rules in March 2021 and became effective in April 2021. A newer, updated version of the report will be posted to the District web site prior to the November 3, 2021, public workshop on recommended minimum flows for Lower Shell Creek. **A Lower Peace River/Lower Shell Creek web page that** includes links to the draft minimum flows report, a web forum used for the independent, scientific peer review of the minimum flows, and other relevant information **is available on the District web site at:** https://www.swfwmd.state.fl.us/projects/mfls/lower-peace-river/lower-shell-creek. A

All public comment on the minimum flows received prior to, during and after the workshop will be summarized for consideration by the Governing Board. **Written comments** on the recommended minimum flows for Lower Shell Creek are also welcome and should be submitted no later than November 24, 2021 to: Doug Leeper, MFLs Program Lead with the District's Natural Systems and Restoration Bureau, via email (doug.leeper@watermaters.org) or by U.S. Mail (2379 Broad Street, Brooksville, Florida, 34604-6899). Doug can also be reached by phone at 1-800-423-1476 or 352-796,7211, extension 4272.

- District staff anticipate seeking Governing Board approval for initiation of rulemaking for the recommended minimum flows for Lower Shell Creek at the Board meeting scheduled for 12/15/2021.

Anyone who has an interest in Peace River of Lower Shell Creek flows is encouraged to attend and provide comments.

Best,

Cindy C, Rodriguez, CPM

Sr. Government Affairs Regional Manager
Southwest Florida Water Management District
170 Century Blvd.
Bartow, FL
Office: (800) 492-7862 or (863) 534-1448 ext. 6000
Cell: (863) 698-8019

From:	Chris Zajac
To:	Laura Baumberger; Steve Adams
Cc:	Randy Smith; Doug Leeper; Yonas Ghile
Subject:	RE: Punta Gorda Shll Creek MFL City Council meeting Oct 20
Date:	Tuesday, October 12, 2021 12:23:17 PM

Laura,

Thank you for sharing your presentation with us. We reviewed the presentation and offer the following edits.

Slide #4 seems to have some template type boxes in the background behind the image.
Slides #12, 16 and 18 should show allowable reservoir withdrawals as "8.3" rather than 8.4.
Slides #13 and 17 – Would be important to mention the probability of Block 1 condition in the summer (July-October) is less than 3% chance of occurring.
Slide #24 – first bullet consider changing to " The District worked with the City to develop an MFL for Lower Shell that protects the environmental resources, but also allows the city to meet their water needs."
Slide #24 – Suggest deleting the first sub bullet ""The MFL is projected to met 99.5% of the time for the next 20 years" and add "for the next 20 years" in the last bullet.

The presentation looks great and we look forward to presenting the information to the City Council.

I should have ours ready to share this afternoon.

Chris Zajac
Environmental Flows and Levels Manager
Natural Systems and Restoration Bureau
2379 Broad Street
Brooksville, FL 34604
(352) 796-7211, Ext. 4413
(352) 586-3776
Chris.Zajac@WaterMatters.org

From: Laura Baumberger <LBaumberger@carollo.com>
Sent: Tuesday, October 12, 2021 10:13 AM
To: Chris Zajac <Chris.Zajac@swfwmd.state.fl.us>; Steve Adams <SAdams@cityofpuntagordafl.com>; Yonas Ghile <Yonas.Ghile@swfwmd.state.fl.us>
Cc: Randy Smith <Randy.Smith@swfwmd.state.fl.us>
Subject: RE: Punta Gorda Shll Creek MFL City Council meeting Oct 20

[EXTERNAL SENDER] Use caution before opening.
Chris,

Attached is my latest presentation. Please review and provide comments on this version, which has

a few minor updates as compared to the previous.

Thanks,
Laura

From: Chris Zajac <Chris.Zajac@swfwmd.state.fl.us>
Sent: Tuesday, October 12, 2021 8:39 AM
To: Steve Adams <SAdams@cityofpuntagordafl.com>; Yonas Ghile <Yonas.Ghile@swfwmd.state.fl.us>
Cc: Laura Baumberger <LBaumberger@carollo.com>; Randy Smith <Randy.Smith@swfwmd.state.fl.us>
Subject: RE: Punta Gorda Shll Creek MFL City Council meeting Oct 20

Steve,

I am meeting with my team this morning at 10:30 to review Laura's presentation and will provide comments shortly after directly to Laura and copy you. I have a meeting this afternoon at 2:00 pm to finalize the District presentation with Jennette. I will send you our presentation and copy Laura as soon as we finish our meeting with Jennette. That should put all 4 attachments in your hands by close of business today.

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Natural Systems and Restoration Bureau
2379 Broad Street
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From: Steve Adams <SAdams@cityofpuntagordafl.com>
Sent: Tuesday, October 12, 2021 8:02 AM
To: Chris Zajac <Chris.Zajac@swfwmd.state.fl.us>; Yonas Ghile <Yonas.Ghile@swfwmd.state.fl.us>
Subject: Punta Gorda Shll Creek MFL City Council meeting Oct 20

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The Agenda item cover sheet is complete. We will need to send the agenda item with attachments to the City Manager's office today, possibly any minute, to get this on the agenda for Oct 20. The agenda sheet shows 4 attachments.

EXHIBITS:
Presentation by Yonas Ghile, Lead Hydrologist, SWFWMD
Presentation by Laura Baumberger, P.E., Carollo Engineers

Right now, I have two attachments shown above. I am missing items 1 and 4.

Laura will provide attachment 4.

Please send the Presentation by Yonas, and conform the Letter mod attachment is correct.

I am not sure what will happen if these items are not received when the cut-off for agenda items happens today. It may go without them, or it may get cut. Thanks for helping.

Steve Adams
Utilities Engineering Manager
Utilities

City of Punta Gorda
326 West Marion Avenue
Punta Gorda, Florida 33950
941-575-3325
www.CityofPuntaGordaFL.com

From: Laura Baumberger
To: Chris Zajac; Leslie Silva; Steve Adams
Cc: Randy Smith; Doug Leeper; Victoria Steinnecker
Subject: RE: Punta Gorda Shll Creek MFL City Council meeting Oct 20
Date: Tuesday, October 12, 2021 12:39:30 PM
Attachments: 20211020_council meeting_city of punta gorda MFL_Final.pptx

---

[EXTERNAL SENDER] Use caution before opening.
Chris,

Thank you for the comments. I have updated my slides accordingly.

Steve and Leslie,

Attached is the final Carollo presentation. Our final report will be forthcoming later today.

Thanks,
Laura

From: Chris Zajac <Chris.Zajac@swfwmd.state.fl.us>
Sent: Tuesday, October 12, 2021 12:23 PM
To: Laura Baumberger <LBaumberger@carollo.com>; Steve Adams <SAdams@cityofpuntagordafl.com>
Cc: Randy Smith <Randy.Smith@swfwmd.state.fl.us>; Doug Leeper <Doug.Leeper@swfwmd.state.fl.us>; Yonas Ghile <Yonas.Ghile@swfwmd.state.fl.us>
Subject: RE: Punta Gorda Shll Creek MFL City Council meeting Oct 20

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Cc: Laura Baumberger <LBaumberger@carollo.com>; Randy Smith <Randy.Smith@swfwmd.state.fl.us>
Subject: RE: Punta Gorda Shll Creek MFL City Council meeting Oct 20

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Chris Zajac

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Natural Systems and Restoration Bureau
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EXHIBITS:
Presentation by Yonas Ghile, Lead Hydrologist, SWFWMD
Presentation by Laura Baumberger, P.E., Carollo Engineers
Draft Letter Modification Water Use Permit No: 20000817.013
Review of the Proposed Lower Shell Creek MFL, Carollo Engineers, October 2021Final Report

Right now, I have two attachments shown above. I am missing items 1 and 4.

Laura will provide attachment 4.

Please send the Presentation by Yonas, and conform the Letter mod attachment is correct.

I am not sure what will happen if these items are not received when the cut-off for agenda items happens today. It may go without them, or it may get cut. Thanks for helping.

Steve Adams
Utilities Engineering Manager
Utilities

City of Punta Gorda
326 West Marion Avenue
Punta Gorda, Florida 33950
941-575-3325
www.CityofPuntaGordaFL.com

Lower Shell Creek Minimum Flow and Level (MFL) Impacts on City Water Supply

Laura Baumberger, PE

carollo

City of Punta Gorda / City Council / October 20, 2021

1

City Water Supply and Projected Demands

2

// Summary of the City's Water Supply

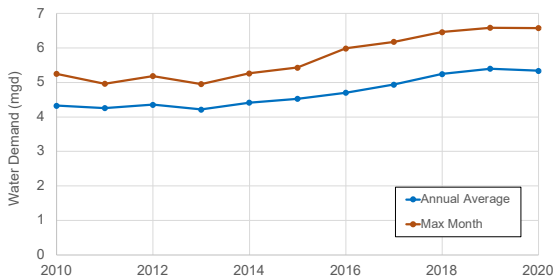
1. City's water use permit (WUP) allows annual average withdrawal of 8.088 million gallons per day (mgd) and peak month withdrawal of 11.728 mgd.
   - In 2020, the average water withdrawal was 5.34 mgd.
2. Shell Creek WTP treatment capacity is 10 mgd.
3. Reverse Osmosis (RO) Facility brought online in 2020 and can produce up to 4.0 mgd using brackish groundwater.
4. Peace River Manasota Regional Water Supply Authority (PRMRWSA) pipeline can be used to transfer water as needed.

3



4

Historical Water Demands to Customers



5

// City's Projected Water Demand to Customers

Year	Estimated Population	Annual Average Water Demand (mgd)
2020	39,875	5.69
2025	42,717	5.53
2030	44,632	5.78
2035	46,035	5.96
2040	47,293	6.12

6

// Monthly Peaking Factors and Water Demands

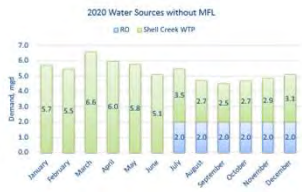
Month	Peaking Factor	2020 Demand	2040 Demand
	Annual Average	*5.34*	*6.12*
January	1.04	5.72	6.36
February	1.05	5.49	6.43
March	1.13	6.58	6.92
April	1.17	5.98	7.16
May	1.08	5.78	6.61
June	0.88	5.10	5.39
July	0.78	5.48	4.77
August	0.67	4.72	4.10
September	0.84	4.52	5.14
October	1.03	4.69	6.30
November	1.20	4.87	7.34
December	1.11	5.10	6.79

7

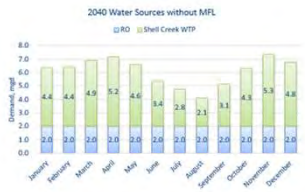
City's Water Supply without MFL

8

// Reliability of City's Water Supply (Current and 2040)



2020 Average Demand = 5.34 mgd



2040 Average Demand = 6.12 mgd

9

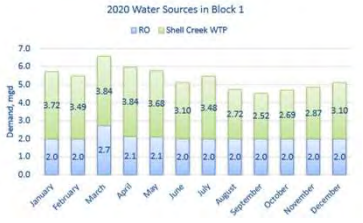
City's Water Supply with MFL (2020)

10

// 2020 Monthly Average Water Supply

2020 Monthly Average
Demands in Block 1

- RO runs at 2.0 mgd unless limited by MFL, then RO is increased (March, April, and May)
- Allowable reservoir withdrawals:
  - 4.22 mgd in Jan – Apr
  - 4.05 mgd in May – Sept
  - 3.40 mgd in Oct
  - 4.42 mgd in Nov – Dec
- Water supplied by Shell Creek WTP accounts for treatment losses



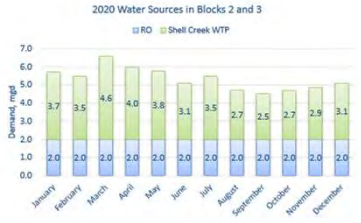
* Demand is 2020 monthly averages.

11

// 2020 Monthly Average Water Supply

2020 Monthly Average
Demands in Blocks 2/3

- RO runs at 2.0 mgd
- Allowable reservoir withdrawals:
  - 8.3 mgd – 11.73 mgd
- Water supplied by Shell Creek WTP accounts for treatment losses



* Demand is 2020 monthly averages.

12

// Water Supply for 2020 Maximum Day Demand

2020 Max Day Demand if in Block 1

- RO runs at 4.0 mgd
- Allowable reservoir withdrawal:
  - 4.22 mgd in Jan – Apr
  - 4.05 mgd in May – Sept
  - 3.40 mgd in Oct
  - 4.42 mgd in Nov – Dec
- Water supplied by Shell Creek WTP accounts for treatment losses
- May need a small water transfer from PRMRWSA in April and July
- Likelihood of Block 1 occurring in summer is very low



* Demand is 2020 maximum day in each month.

13

13

City's Water Supply with MFL (2040)

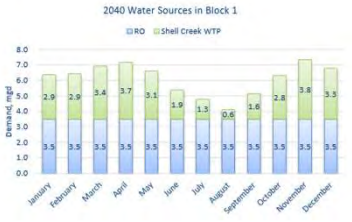
14

14

// 2040 Monthly Average Water Supply

2040 Monthly Average Demands in Block 1

- RO runs at 3.5 mgd
- Block 1 of proposed MFL allowable reservoir withdrawals:
  - 4.22 mgd in Jan – Apr
  - 4.05 mgd in May – Sept
  - 3.40 mgd in Oct
  - 4.42 mgd in Nov – Dec
- Water supplied by Shell Creek WTP accounts for treatment losses



* Demand is projected annual average times monthly peaking factors

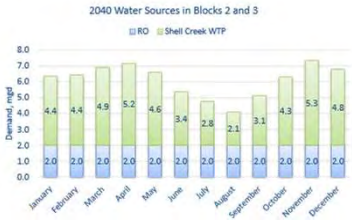
15

15

// 2040 Monthly Average Water Supply

2040 Monthly Average Demands in Blocks 2/3

- RO runs at 2.0 mgd
- Allowable reservoir withdrawals:
  - 8.3 mgd – 11.73 mgd
- Water supplied by Shell Creek WTP accounts for treatment losses



* Demand is projected annual average times monthly peaking factors

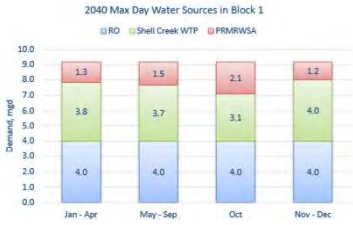
16

16

// Water Supply at 2040 Maximum Day Demand

2040 Max Day Demand in Block 1

- RO runs at 4.0 mgd
- Allowable reservoir withdrawals:
  - 4.22 mgd in Jan – Apr
  - 4.05 mgd in May – Sept
  - 3.40 mgd in Oct
  - 4.42 mgd in Nov – Dec
- Water supplied by Shell Creek WTP accounts for treatment losses
- Would need water transfer from PRMRWSA



* Demand is 2040 projected demand times 1.5 max day peaking factor

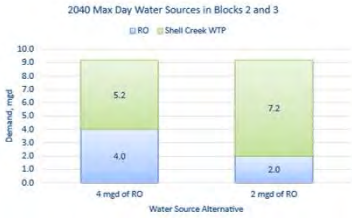
17

17

// Water Supply at 2040 Maximum Day Demand

2040 Max Day Demand in Blocks 2/3

- RO runs at 4.0 mgd or 2.0 mgd
- Allowable reservoir withdrawal:
  - 8.3 mgd – 11.73 mgd
- Water supplied by Shell Creek WTP accounts for treatment losses



* Demand is 2040 projected demand times 1.5 max day peaking factor

18

18

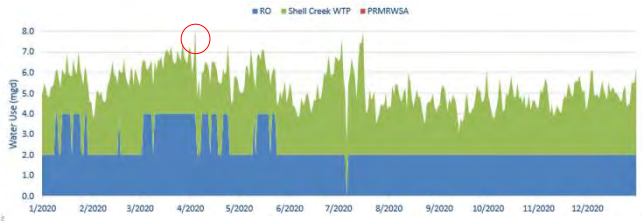
Daily Implementation of MFL

19

// 2020 Daily Implementation Analysis of MFL

Daily water supply sources in 2020 if the MFL were in place.

- Operate RO Facility at 2 mgd as a baseline and increase to 4 mgd when needed.
- The City would have needed a 0.21 MG transfer from PRMRWSA on April 4, 2020.

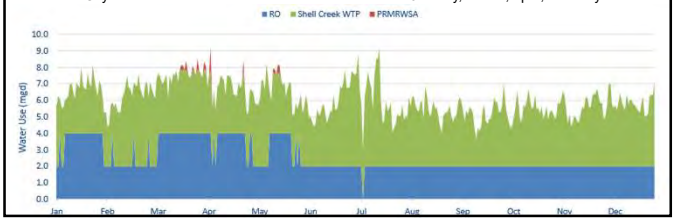


20

// 2040 Daily Implementation Analysis of MFL

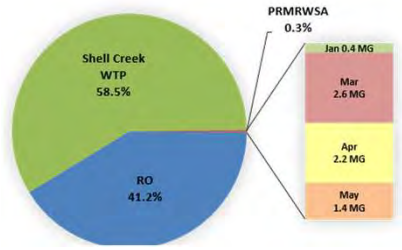
Predicted daily water supply sources in 2040 with MFL.

- Based on 2020 Shell Creek flows.
- Operate RO Facility at 2 mgd as a baseline and increase to 4 mgd when needed.
- The City would need a water transfer from PRMRWSA in January, March, April, and May.



21

// 2040 Daily Implementation Analysis of MFL



22

Conclusions

23

// Conclusions

- The District worked with the City to develop an MFL for Shell Creek that protects the environmental resources, but also allows the City to meet their water supply needs.
  - The projected water supply reliability using only RO and the reservoir is 99.7% for 2040 (based on a daily implementation analysis using 2020 hydrologic conditions).
  - The remaining 0.3% could be met through transfer from the PRMRWSA, which could be returned when the City is not limited by the MFL (Blocks 2 and 3) to have a net zero transfer at the end of a year.
- The District plans to present the proposed Lower Shell Creek MFL to their Governing Board by the end of 2021.
- The City should work with PRMRWSA to amend the Water Systems Interconnect and Water Transfer Contract to document that PRMRWSA will assist the City in meeting their water demands as needed under the MFL conditions.
- A modification of the City's water use permit to incorporate the proposed withdrawal limits will allow the MFL to be met for the next 20 years.

24

From:	Chris Zajac
To:	Steve Adams
Cc:	Jennette Seachrist; Randy Smith; Yonas Ghile; Doug Leeper; Laura Baumberger
Subject:	RE: MFL Slides
Date:	Tuesday, October 12, 2021 4:44:32 PM
Attachments:	LSC_MFL_Oct20_2021.pptx

Steve,

Thank you for being patient while we developed our presentation to the City Council. Please find attached one file containing the PowerPoint that Yonas will present to your Council on the 20th. Please advise if you need anything from me or my team leading up to the Council meeting.

Chris Zajac
Environmental Flows and Levels Manager
Natural Systems and Restoration Bureau
2379 Broad Street
Brooksville, FL 34604
(352) 796-7211, Ext. 4413
(352) 586-3776
Chris.Zajac@WaterMatters.org

From: Steve Adams <SAdams@cityofpuntagordafl.com>
Sent: Tuesday, October 12, 2021 3:51 PM
To: Chris Zajac <Chris.Zajac@swfwmd.state.fl.us>
Subject: MFL Slides

[EXTERNAL SENDER] Use caution before opening.
Did you send us the slides for Yonas's Presentation? We do not have this yet.

This is the last item remaining to complete the Agenda Item.

Steve Adams
Utilities Engineering Manager
Utilities

City of Punta Gorda
326 West Marion Avenue
Punta Gorda, Florida 33950
941-575-3325
www.CityofPuntaGordaFL.com

SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

Recommended Minimum Flows for Lower Shell Creek

City of Punta Gorda Council Meeting
October 20, 2021

Yonas Ghile, PhD, PH
Lead Hydrologist
Natural Systems and Restoration Bureau

1

SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

Minimum Flow

- The **minimum flow** for a given watercourse is the limit at which further withdrawals would be significantly harmful to the water resources or ecology of the area
  Section 373.042, Florida Statutes
- Minimum flow rules are used in District permitting and planning programs



2

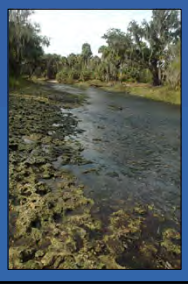
SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

Minimum Flow Considerations

Address natural seasonal fluctuations, non-consumptive uses, and **environmental values**, including:

- Recreation in and on the water
- Fish and wildlife habitats and the passage of fish
- Estuarine resources
- Transfer of detrital material
- Maintenance of freshwater storage and supply
- Aesthetic and scenic attributes
- Filtration/absorption of nutrients and other pollutants
- Sediment loads
- Water quality
- Navigation

Summarized from Rule 62-40.473, Florida Administrative Code



3

SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

Minimum Flows Approach

- **Percent-of-Flow Reduction:** Percentage that flows can be reduced by withdrawals without causing significant harm to the water resource or ecology of the area
- **Significant Harm:** More than a 15% decrease in available habitat or resource; protects 85% of available habitat or resource
- **Recovery Strategy:** required if minimum flows are not currently met
- **Prevention Strategy:** required if minimum flows are projected to not be met in the next 20 years

4

SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

Peer Review and Stakeholder Outreach

- Minimum flows report peer reviewed from March 2020 – June 2020
- Met with City's staff from 2019 to present
- Presentation to Environmental Advisory Committee on April 13, 2021
- Presentation to Public Supply Advisory Committee on May 11, 2021
- Presentation to CHNEP on August 12, 2021
- Public workshop scheduled for November 03, 2021
- Presentation to District Governing Board in December 2021

5

SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

Lower Shell Creek

- River segment downstream of Hendrickson Dam to confluence with Peace River
- Minimum flows
  - Initially developed in 2010 but rescheduled to 2020 for comprehensive analysis
  - District funded a variety of biological and hydrological data collection projects to support the establishment of minimum flows
  - District cooperatively funded City's Reverse Osmosis (RO) and the PRMRWSA Regional Loop Phase 1 Interconnect projects
  - Minimum flows establishment for Lower Shell Creek scheduled for 2021

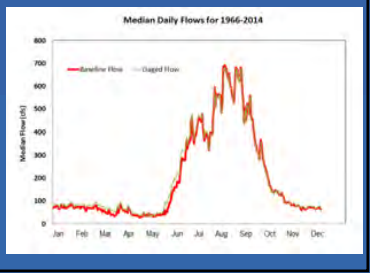


6

SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

Baseline Flows

- Baseline flows (flows with no withdrawal effects) for the period from 1966 through 2018 based on:
  - Gaged flow
  - Surface water withdrawals
  - Excess agricultural runoff



7

SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

Flow-Based Blocks



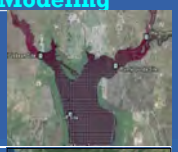
8

SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

Enhanced Hydrodynamic Modeling

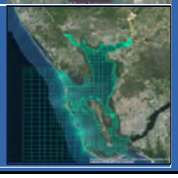
Previously used model (Chen 2010)

- Structured 3D hydrodynamic model
- Limited to Upper Charlotte Harbor
- 13-month calibration/validation period
- 3-year simulation period (2000 - 2002)



Current model (Chen 2020)

- Unstructured 3D hydrodynamic model
- Includes entire Charlotte Harbor
- New LiDAR and bathymetry data
- 21-month calibration/validation period
- 7.7-year simulation period (Jan 2007 - Aug 2014)



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SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

Enhanced Ecological Criteria and Considerations

Previous (2010 Evaluation) Ecological Criteria and Considerations	Current Ecological Criteria and Considerations
▪ Salinity-based habitats (≤2, ≤5, ≤10, ≤15, ≤20 psu)	▪ Salinity-based habitats (≤2, ≤5, ≤10, ≤15, ≤20 psu) ▪ Habitats for 8 estuarine dependent taxa ▪ Water quality (dissolved oxygen, nutrients, chlorophyll, color)

- **≤ 2 practical salinity unit (psu) salinity volume** was the metric most sensitive to flow reductions
- Minimum flows developed based on preserving 85% of **≤2 psu salinity volume**

10

SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

Recommended Minimum Flows for Lower Shell Creek

Block	If Baseline Flow on Previous Day is:	Maximum Withdrawal is:
1	≤56 cfs (36.2 mgd)	13% of flow
2	>56 cfs (36.2 mgd) and ≤137 cfs (88.5 mgd)	23% of flow
3	>137 cfs (88.5 mgd)	40% of flow

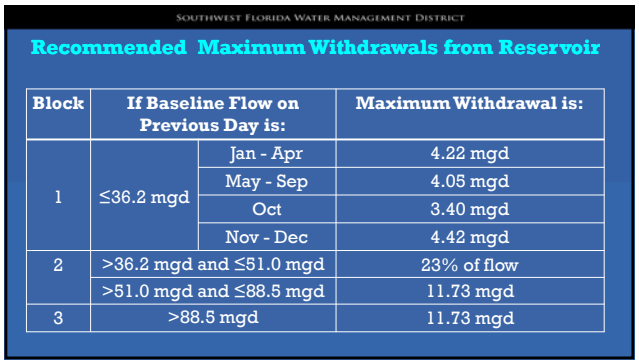
11

SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

Recovery and Prevention Strategies

- With the use of District cooperatively funded RO system, the recommended Lower Shell Creek minimum flows are currently met and no recovery strategy is required
- Recommended Lower Shell Creek minimum flows are not projected to be met in the next 20 years. As a result, Florida law dictates in that scenario that the District concurrently adopt a prevention strategy
- However, a formal prevention strategy is not required with the modification of the City's WUP
- In collaboration with City's utility staff and consultant, District staff drafted a WUP modification letter that allows the City to meet future water demands and ensure the recommended minimum flows are met during the next 20-year planning period

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Southwest Florida Water Management District
Recommended Maximum Withdrawals from Reservoir
Block
If Baseline Flow on Previous Day is:
Maximum Withdrawal is:
1
≤36.2 mgd
Jan - Apr
4.22 mgd
May - Sep
4.05 mgd
Oct
3.40 mgd
Nov - Dec
4.42 mgd
2
>36.2 mgd and ≤51.0 mgd
23% of flow
>51.0 mgd and ≤88.5 mgd
11.73 mgd
3
>88.5 mgd
11.73 mgd

13


Southwest Florida Water Management District
Thank you!

14

CITY COUNCIL AGENDA
326 WEST MARION AVENUE, PUNTA GORDA, FLORIDA 33950
****AMENDED****
OCTOBER 20, 2021, 9:00 AM

MEMBERS

Lynne R. Matthews, Mayor
Debby Carey, Vice-Mayor
Jaha Cummings, Councilmember
John Miller, Councilmember
Nancy Prafke, Councilmember

CITY OFFICIALS

Gregory B. Murray, City Manager
Karen Smith, City Clerk
David Levin, City Attorney

CALL TO ORDER
Roll Call
Invocation
Pledge of Allegiance
Next Meeting - November 3, 2021

AGENDA APPROVAL

1. **PUBLIC INPUT**

   1.a Anyone wishing to address the Council on any matter must state their name for the record. Each person will be allowed to speak once on each item up to a maximum of three minutes.

   1.b Those wishing to introduce themselves as nominees for a board or committee may do so at this time. Those who choose to speak must state their name for the record.

2. PROCLAMATIONS / PRESENTATIONS

   2.a Wyvern Hotel Community Service of the Year Award 2020

   2.b Mayor's Ambassador Award

   2.c National Long-Term Care Residents' Rights Month

   2.d ***Florida City Government Week

3. **PUBLIC HEARING AGENDA**
   (Quasi-Judicial and Legislative)

3.a A Resolution of the City Council of the City of Punta Gorda, Florida approving the final plat to subdivide a parcel of land containing 39,245.58 +/- square feet (0.90 +/- acres) into five (5) single-family residential lots and one (1) commercial lot, in order to create a subdivision to be called "Jamaica Way Subdivision" for the property at 1700 Jamaica Way, Punta Gorda, Florida, more particularly described on Exhibit "A" attached to this Resolution; authorizing the Mayor and City Clerk to execute the Plat; authorizing the City Clerk to forward this Resolution and the original Final Plat to the Circuit Court Clerk for recording at the applicant's expense; and providing an effective date.

4. **ORDINANCES / RESOLUTIONS**
(No Public Hearing Required)

5. **CONSENT AGENDA**

5.a Approval of Minutes: Regular Meeting of October 6, 2021

5.b Monthly Litigation Report

5.c Invoice of Allen, Norton & Blue, P.A. for legal services rendered in September 2021

5.d A Resolution of the City Council of the City of Punta Gorda, Florida, as local host agency for the Coastal & Heartland National Estuary Partnership, authorizing award of a grant from the U.S. Environmental Protection Agency for National Estuary Program Annual Funding; Authorizing the City Manager to Administer the grant on behalf of the City; Accepting Grant award and proving an effective date.

6. REGULAR AGENDA

6.a Northbound Tamiami Trail (US 41) Vision Study

6.b Consideration to modify the City of Punta Gorda Shell Creek Water Treatment Plant Water Use Permit (#20000871.013) to comply with proposed Minimum Flows for Lower Shell Creek.

6.c Agreement award to Evoqua Water Technologies, LLC of Sarasota, Florida for Liquid Hydrogen Peroxide, Products and Equipment.

6.d Expanding PGI Canal Maintenance District Area to include Champagne Estates Condominium

6.e ***Septic to Sewer Area 1,2,3

6.f ***Discussion of Legislative Initiative

6.g Annual Evaluation City Manager

7. **BOARDS / COMMITTEE**

7.a Announcement of Vacancies: Board of Zoning Appeals (2 regular and 2 alternate)

7.b Announcement of Vacancies: Code Enforcement Board (2 alternate)

7.c Announcement of Vacancies: Firefighters' Pension Board

7.d Announcement of Vacancies: Historic Preservation Advisory Board

7.e Announcement of Vacancies: Planning Commission

7.f Announcement of Vacancies: Punta Gorda Isles Canal Advisory Committee

7.g Nominations: Planning Commission

8. **REPORTS FROM CITY OFFICERS**

8.a City Manager
City Attorney
City Clerk

9. **COUNCIL MEMBER COMMENTS**

9.a Mayor
Councilmembers

ADJOURNMENT

If any person decides to appeal any decision made by City Council or an Advisory Board/Committee with respect to any matter considered at the meeting or hearing, he or she may need a record of the proceedings, and for such purpose he or she may need to ensure that a verbatim record of the proceedings is made, which record includes the testimony and evidence upon which the appeal is to be based.

In accordance with the Americans with Disabilities Act and Florida Statute 286.26, the location of this public hearing is accessible to persons with disabilities. If you are a person with disability who needs any accommodation in order to participate in this proceeding, you are entitled, at no cost to you, to the provision of certain assistance. Interpreters for the hearing impaired (TTY 941-575-5013) or non-English speaking citizens, and any other special accommodations can be requested by contacting the Human Resources Manager/Non-Discrimination Coordinator whose address is 326 W. Marion Avenue, Punta Gorda, FL 33950, whose telephone number is (941) 575-3308, and whose email address is humres@pgorda.us at least two (2) calendars days prior to the meeting.

From:	Doug Leeper
To:	Pam Flores (Pamela.Flores@dep.state.fl.us); Jennifer Adams (Jennifer.G.Adams@dep.state.fl.us); Stefani Weeks - DEP (Stefani.Weeks@FloridaDEP.gov); Don Medellin; Toni Edwards (tedwards@sfwmd.gov); nkraft@sfwmd.gov; Sky Notestein - SRWMD (snotestein@sfwmd.gov); Coates, Kathleen (Kathleen.Coates@nwfwmd.state.fl.us); Thurman, Paul (Paul.Thurman@nwfwater.com); Chelsea Dinon (Chelsea.Dinon@srwmd.org); Sutherland, Andrew (asutherl@sjrwmd.com); nmouzon@sjrwmd.com; Fatih Gordu (fgordu@sjrwmd.com); King, Sean; John Good - SRWMD (John.Good@srwmd.org); Mantini, Louis; Eric Nagid (eric.nagid@MyFWC.com); Ryan Hamm (Ryan.Hamm@MyFWC.com); Michelle Sempsrott - FFWCC (Michelle.Sempsrott@MyFWC.com); Stempien, Jessica (JessicaLea.Stempien@freshfromflorida.com); Chelette, Angela
Cc:	Yonas Ghile; Xinjian Chen; Kristina Deak; Chris Anastasiou; Chris Zajac; Susanna Martinez Tarokh; Tom Hyle
Subject:	SWFWMD Public Workshop - Lower Shell Creek Minimum Flows
Date:	Wednesday, October 20, 2021 11:30:00 AM

Greetings:
I'm writing to invite you to a public workshop on recommended minimum flows for Lower Shell Creek in Charlotte County.

- Workshop information.
  - The Southwest Florida Water Management District has scheduled a virtual public workshop on **November 3, 2021, at 5:30 p.m**.
  - You may join the workshop via Microsoft Teams through this link: https://bit.ly/3arKI1S. The Google Chrome browser is recommended for best compatibility with Microsoft Teams. For telephone-only participation, dial 1-786-749-6127 and when prompted enter the conference ID: 976694684#.
  - Additional information on the workshop is available from the District's Boards, Meetings and Events webpage at: https://www.swfwmd.state.fl.us/about/calendar/public-meeting-recommended-minimum-flowsthe-lower-peace-river.

- Background information.
  - As you know, minimum flows are limits beyond which further water withdrawals would be significantly harmful to the water resources or ecology of the area. Minimum flows are established as District rules and used in regulatory and planning programs.
  - Recommended minimum flows for Lower Shell Creek and the Lower Peace River were summarized in a draft report that was presented to the District Governing Board and made available on the District website in March 2020.
  - Independent, scientific peer review of the report was conducted from March through June 2020.
  - A public workshop on recommended minimum flows for the Lower Peace River was held in October 2020, an updated version of the minimum flows report was posted on the District web site in November 2020, and the District Governing Board approved the minimum flows recommended for the river in December 2020. The approved minimum flows for the Lower Peace River were adopted into District rules in March 2021 and became effective in April 2021.
  - A newer, updated version of the report will be posted to the District web site prior to the November 3, 2021, public workshop on recommended minimum flows for Lower Shell Creek.
  - A Lower Peace River/Lower Shell Creek web page that includes links to the draft

minimum flows report, the web forum used for the independent, scientific peer review, and other relevant information is available at the District we site at: https://www.swfwmd.state.fl.us/projects/mfls/lower-peace-river/lower-shell-creek.

- Providing input and rulemaking plans.
    - Written comments on the recommended minimum flows for Lower Shell Creek are welcome and should be submitted no later than November 24, 2021 through use of an electronic comment card available at https://www.swfwmd.state.fl.us/projects/mfls/comments, or directly to me (Doug Leeper) via email (doug.leeper@watermatters.org) or the U.S. Mail (2379 Broad Street, Brooksville, Florida, 34604-6899). I can also be reached by phone at 1-800-423-1476 or 352-796,7211, extension 4272.
    - District staff anticipate seeking Governing Board approval for initiation of rulemaking for the recommended minimum flows for Lower Shell Creek at the Board meeting scheduled for 12/14/2021.

Let me know if you have any questions regarding the upcoming workshop or other issues related to the recommended minimum flows.

Doug Leeper
MFLs Program Lead
Southwest Florida Water Management District
2379 Broad Street
Brooksville, FL 34604
1-800-423-1476 or 352-796-7211, ext. 4272
doug.leeper@watermatters.org or doug.leeper@swfwmd.state.fl.us

Swiftmud to hold virtual workshop on minimum flows for Lower Shell Creek

STAFF REPORT

The Southwest Florida Water Management District, commonly known as Swiftmud, invites the public to a virtual workshop at 5:30 p.m. Wednesday to allow for public comment on recommended minimum flows for Lower Shell Creek in Charlotte County.

Members of the public may join the meeting via Microsoft Teams through this link: https://bit.ly/3arKI1S. The Google Chrome browser is recommended for best compatibility with Microsoft Teams. For telephone-only participation, dial 1-786-749-6127 and when prompted enter the conference ID: 976694684#.

Minimum flows are limits established by Swiftmud's governing board, and required by state law, to protect flowing water bodies from significant harm caused by ground and surface water withdrawals. Swiftmud's scientists use numerous tools to collect, develop and analyze data before recommending a minimum flow. Their work is then evaluated by an independent peer review panel.

During the workshop, staff will review the technical basis for the recommended minimum flows for Lower Shell Creek. Recommended minimum flows for Lower Shell Creek were summarized in a draft report that also addressed reevaluated minimum flows for the Lower Peace River and was presented to the governing board and previously made available on Swiftmud's website.

A revised version of the draft report with updated status information for the recommended minimum flows for Lower Shell Creek is available for review and is posted at WaterMatters.org/documents-and-reports. All public comments are summarized and shared with the governing board for its consideration when reviewing the recommended minimum flows. Public comments can be submitted to Swiftmud by filling out a virtual comment card.

Staff anticipates presenting the recommended minimum flows for Lower Shell Creek at the December governing board meeting, where the board may choose to initiate rulemaking for adoption of the minimum flow into Swiftmud rules. Governing board meetings are open to the public, and brief oral comments are permitted on meeting agenda items.

For more information regarding the recommended minimum flows, contact Doug Leeper, MFLs Program Lead with the District's Environmental Flows and Assessments Section at 1-800-423-1476, ext. 4272.

Written comments regarding the minimum flows are also welcome. They can be submitted via mail or email no later than Nov. 24, 2021, to Doug Leeper, at 2379 Broad Street, Brooksville, FL 34604-6899 or doug.leeper@watermatters.org.

Charlotte Sun
Charlotte County
Daily 37,800
November 1, 2021

From: Chris Zajac
To: Randy Smith
Cc: Doug Leeper; Yonas Ghile
Subject: FW: Water Use Permit Modification
Date: Tuesday, November 2, 2021 8:47:15 AM

FYI

Chris Zajac
Environmental Flows and Levels Manager
Natural Systems and Restoration Bureau
2379 Broad Street
Brooksville, FL 34604
(352) 796-7211, Ext. 4413
(352) 586-3776
Chris.Zajac@WaterMatters.org

From: April D. Breton <April.Breton@swfwmd.state.fl.us>
Sent: Monday, November 1, 2021 4:16 PM
To: cpavlos@cityofpuntagordafl.com
Cc: Chris Zajac <Chris.Zajac@swfwmd.state.fl.us>; Owen Thornberry <Owen.Thornberry@swfwmd.state.fl.us>; Adrienne E. Vining <Adrienne.Vining@swfwmd.state.fl.us>
Subject: Water Use Permit Modification

Good afternoon Chuck,

As you know, a recommended Minimum Flow for the Lower Shell Creek will be considered for approval by the District's Governing Board on December 14, 2021. In anticipation of this change, your City Council recently approved a corresponding modification to your Water Use Permit (WUP). Accordingly, at this time the City should submit an application for Letter Modification of Water Use Permit 20000871.012 to add a specific surface water diversion schedule related to this change. Please feel free to contact me if you have any questions or need assistance with the application process.

Best regards,

April D. Breton
Water Use Permit Manager, Water Use Permit Bureau
7601 US Highway 301 North
Tampa, FL 33637
813-985-7481 ext. 2049
800-836-0797 ext. 2049 (Florida Only)
April.Breton@watermatters.org

From:	Chris Zajac
To:	Steve Adams
Cc:	Owen Thornberry; "April.Brenton@watermatters.org"; Randy Smith; Doug Leeper; Yonas Ghile
Subject:	RE: Water Use Permit Modification
Date:	Tuesday, November 2, 2021 11:14:10 AM

Steve,

I believe there will be no fee for the permit modification as April and/or Owen can confirm. A form must be completed by the permittee (City of Punta Gorda) to initiate the modification is my understanding. I'll ask that Owen and/or April confirm this as well.

Owen,

Can you provide some guidance to Steve regarding the necessary form to complete to initiate the modification? Do they need to include the approved draft permit conditions that the City Council approved?

Chris Zajac
Environmental Flows and Levels Manager
Natural Systems and Restoration Bureau
2379 Broad Street
Brooksville, FL 34604
(352) 796-7211, Ext. 4413
(352) 586-3776
Chris.Zajac@WaterMatters.org

From: Steve Adams <SAdams@cityofpuntagordafl.com>
Sent: Tuesday, November 2, 2021 10:00 AM
To: Chris Zajac <Chris.Zajac@swfwmd.state.fl.us>
Cc: Owen Thornberry <Owen.Thornberry@swfwmd.state.fl.us>; 'April.Brenton@watermatters.org' <April.Brenton@watermatters.org>
Subject: FW: Water Use Permit Modification

[EXTERNAL SENDER] Use caution before opening.

Chris:

We were expecting District staff to take the lead on this permit mod. and issue a document for signature / approval to the City. We also would like to avoid a permit mod fee. Please let me know your thoughts.

Steve Adams
Utilities Engineering Manager

Utilities

City of Punta Gorda
326 West Marion Avenue
Punta Gorda, Florida 33950
941-575-3325
www.CityofPuntaGordaFL.com

From: Chuck Pavlos
Sent: Monday, November 01, 2021 4:27 PM
To: Steve Adams <SAdams@cityofpuntagordafl.com>
Cc: Brian Fuller <BFuller@cityofpuntagordafl.com>; Steven Leonard <SLeonard@cityofpuntagordafl.com>; Laura Baumberger <LBaumberger@carollo.com>
Subject: FW: [EXTERNAL] Water Use Permit Modification

fyi

Chuck Pavlos
Utilities Director
Utilities

City of Punta Gorda

Punta Gorda, Florida 33950
941-575-5055
www.CityofPuntaGordaFL.com

From: April D. Breton <April.Breton@swfwmd.state.fl.us>
Sent: Monday, November 1, 2021 4:16 PM
To: Chuck Pavlos <CPavlos@cityofpuntagordafl.com>
Cc: Chris Zajac <Chris.Zajac@swfwmd.state.fl.us>; Owen Thornberry <Owen.Thornberry@swfwmd.state.fl.us>; Adrienne E. Vining <Adrienne.Vining@swfwmd.state.fl.us>
Subject: [EXTERNAL] Water Use Permit Modification

MESSAGE FROM AN EXTERNAL SENDER: Please use caution when opening attachments, clicking links, or replying to this message.
Good afternoon Chuck,

As you know, a recommended Minimum Flow for the Lower Shell Creek will be considered for approval by the District's Governing Board on December 14, 2021. In anticipation of this change,

your City Council recently approved a corresponding modification to your Water Use Permit (WUP). Accordingly, at this time the City should submit an application for Letter Modification of Water Use Permit 20000871.012 to add a specific surface water diversion schedule related to this change. Please feel free to contact me if you have any questions or need assistance with the application process.

Best regards,

April D. Breton
Water Use Permit Manager, Water Use Permit Bureau
7601 US Highway 301 North
Tampa, FL 33637
813-985-7481 ext. 2049
800-836-0797 ext. 2049 (Florida Only)
April.Breton@watermatters.org

MEETING SUMMARY

Southwest Florida Water Management District
Public Workshop
Recommended Minimum Flows for Lower Shell Creek

November 3, 2021

(Summary prepared November 4, 2021)

The Southwest Florida Water Management District (District) hosted a public workshop from 5:30 p.m. to 7:00 p.m. on November 3, 2021, for discussion of recommended minimum flows for Lower Shell Creek. The meeting was facilitated to disseminate relevant information and provide an opportunity for stakeholders to provide input on the recommended minimum flows. The meeting was held virtually via Microsoft Teams.

The workshop was advertised in the Florida Administrative Register, local newspapers, and on the District's web site. In addition, numerous interested parties and local government staff and officials were notified of the meeting and a press release was made available to the regional media.

Four stakeholders participated in the workshop: Don Ellison, Brandon Moody, Victoria Steinnecker and one person identified as “Pam.” Twelve District staff members participated in the workshop: Chris Anastasiou, Chief Water Quality Scientist; XinJian Chen, Chief Professional Engineer; Kristina Deak, Senior Environmental Scientist; Yonas Ghile, Lead Hydrologist; Doug Leeper, MFLs Program Lead; Jordan Miller, Environmental Scientist; Ryan Pearson, Economist; Cindy Rodriguez, Senior Governmental Affairs Regional Manager; Jennette Seachrist, Resource Management Director; Randy Smith, Natural Systems & Restoration Bureau Chief; Adrienne Vining, Assistant General Counsel; and Chris Zajac, Environmental Flows and Levels Manager.

Doug Leeper initiated the workshop at 5:30 p.m. by discussing use of the Teams software or telephone for meeting participation. Mr. Leeper then identified the primary District staff who worked on development of the recommended minimum flows for the Lower Shell Creek, including Yonas Ghile, XinJian Chen, Kristina Deak and Chris Anastasiou. Mr. Leeper subsequently provided a brief overview of the Southwest Florida Water Management District and was followed by Dr. Ghile, who presented the District’s minimum flows recommendations for Lower Shell Creek.

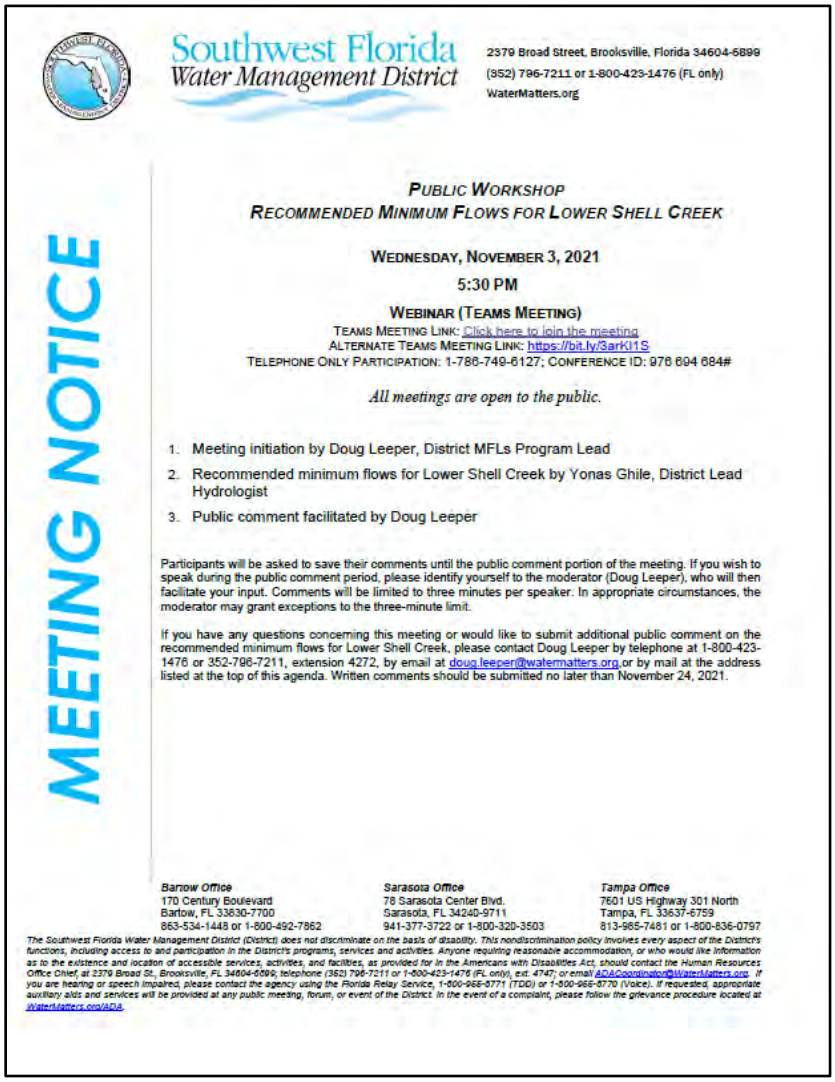
Mr. Leeper then facilitated a public comment period, during which workshop participants were made aware of the various opportunities available for public comment on the proposed minimum flows, including providing oral comment during the workshop or providing oral or written comments following the workshop. Participants were informed that they may also provide comment on the proposed minimum flows at District Governing Board meetings, including the December 14, 2021, meeting at which District staff will recommend initiation of rulemaking for the proposed minimum flows. Mr. Leeper requested that stakeholder comments be provided as soon as practical, preferably by November 24, 2021, to allow time for staff to consider all input.

One workshop participant, Ms. Steinnecker, indicated District staff did a good job presenting information on the proposed minimum flows and commended the District on the quality of the work supporting their development.

The public input period ended at approximately 6:00 pm., and at that time most stakeholders exited from the virtual meeting space. Mr. Leeper continued to facilitate the workshop until 6:15 pm to be available to address any stakeholder concerns. No additional stakeholder joined the meeting or provided input during that period, so the meeting was adjourned at approximately 6:15 pm.

The workshop agenda and a printed version of the slides presented during the meeting are provided below.

Workshop Agenda



Southwest Florida Water Management District

2379 Broad Street, Brooksville, Florida 34604-6899
(352) 796-7211 or 1-800-423-1476 (FL only)
WaterMatters.org

MEETING NOTICE

PUBLIC WORKSHOP
RECOMMENDED MINIMUM FLOWS FOR LOWER SHELL CREEK

WEDNESDAY, NOVEMBER 3, 2021

5:30 PM

WEBINAR (TEAMS MEETING)

TEAMS MEETING LINK: Click here to join the meeting
ALTERNATE TEAMS MEETING LINK: https://bit.ly/3arKJ1S
TELEPHONE ONLY PARTICIPATION: 1-786-749-6127; CONFERENCE ID: 976 694 684#

All meetings are open to the public.

1. Meeting initiation by Doug Leeper, District MFLs Program Lead
2. Recommended minimum flows for Lower Shell Creek by Yonas Ghile, District Lead Hydrologist
3. Public comment facilitated by Doug Leeper

Participants will be asked to save their comments until the public comment portion of the meeting. If you wish to speak during the public comment period, please identify yourself to the moderator (Doug Leeper), who will then facilitate your input. Comments will be limited to three minutes per speaker. In appropriate circumstances, the moderator may grant exceptions to the three-minute limit.

If you have any questions concerning this meeting or would like to submit additional public comment on the recommended minimum flows for Lower Shell Creek, please contact Doug Leeper by telephone at 1-800-423-1476 or 352-796-7211, extension 4272, by email at doug.leeper@watermatters.org or by mail at the address listed at the top of this agenda. Written comments should be submitted no later than November 24, 2021.

Bartow Office
170 Century Boulevard
Bartow, FL 33830-7700
863-534-1448 or 1-800-492-7862

Sarasota Office
78 Sarasota Center Blvd.
Sarasota, FL 34240-9711
941-377-3722 or 1-800-320-3503

Tampa Office
7601 US Highway 301 North
Tampa, FL 33637-6759
813-985-7481 or 1-800-836-0797

The Southwest Florida Water Management District (District) does not discriminate on the basis of disability. This nondiscrimination policy involves every aspect of the District's functions, including access to and participation in the District's programs, services and activities. Anyone requiring reasonable accommodation, or who would like information as to the existence and location of accessible services, activities, and facilities, as provided for in the Americans with Disabilities Act, should contact the Human Resources Office Chief, at 2379 Broad St., Brooksville, FL 34604-6899; telephone (352) 796-7211 or 1-800-423-1476 (FL only), ext. 4747; or email ADACoordinator@WaterMatters.org. If you are hearing or speech impaired, please contact the agency using the Florida Relay Service, 1-800-955-8771 (TDD) or 1-800-955-8770 (Voice). If requested, appropriate auxiliary aids and services will be provided at any public meeting, forum, or event of the District. In the event of a complaint, please follow the grievance procedure located at WaterMatters.org/ADA.

Workshop Presentation Slides

SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

Recommended Minimum Flows for Lower Shell Creek

Public Workshop

November 03, 2021

Yonas Ghile, PhD, PH
Lead Hydrologist

Doug Leeper
MFLs Program Lead

Natural Systems and Restoration Bureau

Southwest Florida Water Management District

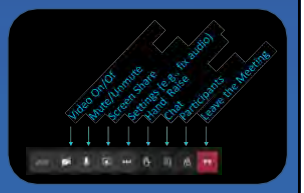
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SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

Teams Meeting Protocol

Please adhere to the following:

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SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

Agenda

1. Meeting initiation
2. Recommended minimum flows for the Lower Shell Creek
3. Public comment

Telephone-only participation: 1-786-749-6127; Conference ID: 976 694 684#

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SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

Florida's Water Management Districts



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SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

Southwest Florida Water Management District

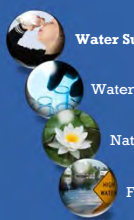
- All or part of 16 counties
- 10,000 square miles



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SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

Areas of Responsibility and Mission Statement



Water Supply

Water Quality

Natural Systems

Flood Protection

Our mission is to protect water resources, minimize flood risks, and ensure the public's water needs are met.

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SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

More Information on the District Website

- Minimum flows page for the Lower Peace River and Lower Shell Creek: https://www.swfwmd.state.fl.us/projects/mfls/lower-peace-river/lower-shell-creek
- Minimum flows and level documents and reports: https://www.swfwmd.state.fl.us/projects/mfl/documents-and-reports
- Meeting/teleconference announcements posted on the Boards, Meetings & Events calendar: https://www.swfwmd.state.fl.us/about/calendar/month

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SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

Minimum Flow

- **The minimum flow for a given watercourse is the limit at which** further withdrawals would be significantly harmful to the water resources or ecology of the area
  Section 373.042, Florida Statutes
- Minimum flow rules are used in District permitting and planning programs



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SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

Minimum Flow Considerations

Address natural seasonal fluctuations, non-consumptive uses, and **environmental values**, including:

- Recreation in and on the water
- Fish and wildlife habitats and the passage of fish
- Estuarine resources
- Transfer of detrital material
- Maintenance of freshwater storage and supply
- Aesthetic and scenic attributes
- Filtration/absorption of nutrients and other pollutants
- Sediment loads
- Water quality
- Navigation

Summarized from Rule 62-40.473, Florida Administrative Code



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SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

Minimum Flows Approach

- **Percent-of-Flow Reduction:** Percentage that flows can be reduced by withdrawals without causing significant harm to the water resource or ecology of the area
- **Significant Harm:** More than a 15% decrease in available habitat or resource; protects 85% of available habitat or resource
- **Recovery Strategy:** required if minimum flows are not currently met
- **Prevention Strategy:** required if minimum flows are projected to not be met in the next 20 years

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SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

Review/Outreach

- Independent scientific peer review (March 2020 – June 2020)
- Stakeholder outreach (2019 to present)
- Presentation to Environmental Advisory Committee (April 13, 2021)
- Presentation to Public Supply Advisory Committee (May 11, 2021)
- Presentation to CHNEP (August 12, 2021)
- Presentation to City of Punta Gorda Council (October 20, 2021)
- Public workshop (November 03, 2021)
- Presentation to District Governing Board (December 14, 2021)

SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

Lower Shell Creek

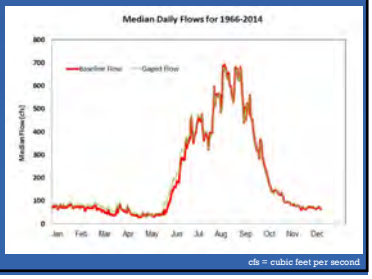
- River segment downstream of Hendrickson Dam to confluence with Peace River
- Minimum flows
  - Initially developed in 2010 but rescheduled to 2020 for comprehensive analysis
  - District funded a variety of biological and hydrological data collection projects to support the establishment of minimum flows
  - District cooperatively funded City's Reverse Osmosis (RO) and the PRMRWSA Regional Loop Phase 1 Interconnect projects
  - Minimum flows establishment for Lower Shell Creek scheduled for 2021



SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

Baseline Flows

- Baseline flows (flows with no withdrawal effects) for the period from 1966 through 2018 based on:
  - Gaged flow
  - Surface water withdrawals
  - Excess agricultural runoff



cfs = cubic feet per second

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SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

Flow-Based Blocks



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SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

Enhanced Hydrodynamic Modeling

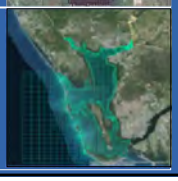
Previously used model (Chen 2010)

- Structured 3D hydrodynamic model
- Limited to Upper Charlotte Harbor
- 13-month calibration/validation period
- 3-year simulation period (2000 - 2002)



Current model (Chen 2020)

- Unstructured 3D hydrodynamic model
- Includes entire Charlotte Harbor
- New LiDAR and bathymetry data
- 21-month calibration/validation period
- 7.7-year simulation period (Jan 2007 - Aug 2014)



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SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

Enhanced Ecological Criteria and Considerations

Previous (2010 Evaluation) Ecological Criteria and Considerations	Current Ecological Criteria and Considerations
▪ Salinity-based habitats (≤2, ≤5, ≤10, ≤15, ≤20 psu)	▪ Salinity-based habitats (≤2, ≤5, ≤10, ≤15, ≤20 psu) ▪ Habitats for 8 estuarine dependent taxa ▪ Water quality (dissolved oxygen, nutrients, chlorophyll, color)

- **≤ 2 practical salinity unit (psu) salinity volume** was the metric most sensitive to flow reductions
- Minimum flows developed based on preserving 85% of **≤2 psu salinity volume**

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SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

Recommended Minimum Flows for Lower Shell Creek

Block	If Baseline Flow on Previous Day is:	Minimum Flow is:	Maximum Withdrawal is:
1	≤56 cfs	87% of flow	13% of flow
2	>56 cfs and ≤137 cfs	77% of flow	23% of flow
3	>137 cfs	60% of flow	40% of flow

mgd = million gallons per day

SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

Minimum Flows Summary

- Recommended minimum flows for Lower Shell Creek (and the Lower Peace River) are based on maintaining 85% of the 2 psu or less salinity volume
- Recommended minimum flows are protective of all environmental values identified for consideration when establishing minimum flows
- With the use of District cooperatively funded RO system, the recommended Lower Shell Creek minimum flows are currently met and no recovery strategy is required. However, modification of the City's water use permit is required to obviate the need for a prevention strategy
- The City of Punta Gorda Council approved a modification to their water use permit and issuance of the permit modification will be completed prior to initiation of rulemaking for establishment of minimum flows for Lower Shell Creek

SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

Public Input

- Comment orally today
- Comment orally by telephone, in person at the District, and/or in writing (preferred) via virtual comment card, email or letter by November 24, 2021
- Virtual comment card: https://www.swfwmd.state.fl.us/projects/mfls/comments
- Contact: **Yonas Ghile**
  2379 Broad Street
  Brooksville, FL 34604
  (352) 796-7211, Ext. 4488
  Yonas.ghile@swfwmd.state.fl.us
- Comment during the Governing Board meeting on December 14, 2021

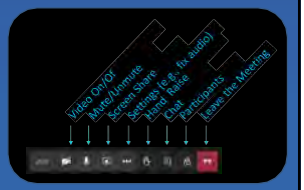
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