

WINNIPESAUKEE RIVER BASIN PROGRAM

ADVISORY BOARD MEETING AGENDA

June 17, 2021

10:00 am

Belmont Mill 4th Floor -14 Mill Street

Due to the expiration of the Governor's Emergency Order, the WRBP Advisory Board must have a physical quorum that is open to the public.

The public has access to listen to and participate in this meeting by using the following link:

<https://us02web.zoom.us/j/86352138449?pwd=SIF6RXIHSIZHZG9MVks4U3pNODhZZz09>

Meeting ID: 863 5213 8449

Passcode: 773041

1. June 2, 2021 Meeting Minutes for review and approval – if available
2. WRBP Monthly Summary Report – June 2021
3. Citizen Comments for items on the agenda
4. Timeline for the CIP update
Solids handling project
5. Governance Guidelines, MOA and possible By-Laws
6. Rate Assessment Update:
Board decision on adopting the new Rate Allocation Model for O & M costs
7. Review of the escrow account; No change from last month
8. Replacement Fund
9. Other Business:
 - a. Next Advisory Board Meeting Thursday, July 15, 2021
 - b. Decision on where to meet.
10. Adjournment

Item # 1
Minutes

Not Available as of
Publication of the
Agenda

Item #2

WRBP Monthly Summary
NOT Available as of
Publication of The Agenda

Item # 6

Topic: Discussion on the draft rate allocation model based on Belmont and Franklin’s consultant’s comments

Background:

Items that are highlighted are updates to the May 20, 2021 report.

Attached is a spreadsheet summarizing the answers to the questions sent out by the Board President by e-mail on June 2, 2021.

The objective of the March 4, 2021, meeting with the 4 downstream communities was to determine how to reach consensus with the 4 communities on how to handle the “unknown flow” that was identified in the WRBP model and that was assigned to two of the 4 southern communities.

The basic concept was to first identify the possible sources of the unknown flow.

The unknown flow consists of:

- I and I in the WRBP interceptor from the Winnisquam pump station to the last meter before the treatment plant.
- Water consumption from the unmetered areas in the 4 communities
- I & I in the unmetered areas of the four communities.

The 4 communities, for water consumption in the unmetered areas of the communities, are considering using an average consumption factor based on historical water use that Underwood has found in the many rate studies they have performed.

Also they are planning on:

- Applying the I and I planning factors from Belmont’s recent study to Northfield as their systems are similar in age and material.
- Applying the I and I planning factors from Belmont’s recent study to Tilton as their systems are similar in age and material. An analysis of the sewer pipe materials in the area of Tilton that is not sewer metered has determined that the pipe is PVC. Thus this area of Tilton more closely resembles Belmont, not Franklin.
- The only Member community that provided comments by April 26th was the Bay District. Their position is that the District should receive a credit for the lagoon pretreatment.
- Underwood looked at the three options for distributing flow in the WRBP interceptor among the 10 members. The three options they looked at were:
 - Population
 - Community flow rate (Underwood recommendation)
 - # direct connections to the interceptor
- Overview of flow
 - Sewer metered flow is 90% of the total flow
 - Calculated sewer flow in the 4 southern communities is 7% of the total flow
 - Unknown flow due to I/I in the unmetered areas of the 4 southern communities and I/I in the interceptor is 3% of the total flow.
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- Using an updated version of Underwood’s suggested modifications to the WRBP model (attached) to share the unknown I and I from the 4 communities among the 4 communities.
-

The current timeline for finalizing the rate allocation formula follows:

March meeting

- Obtain agreement on the sources of the unknown flow
- Obtain agreement on the concept of how to divide the unknown flow among the four communities

April Meeting

- Review the planning factors proposed for I & I flow in Northfield and Tilton
- Review an update to Underwood’s suggested changes to the WRBP model that was provided at the Feb 18th meeting
- Discuss the steps and timeline to obtain a decision from the member communities on the proposed changes to the WRBP model.

May Meeting

- Discuss any issues raised by the member community governing bodies. If the governing body of any member community has an issue with the model please provide comments as soon as you have them. Do not wait for this meeting to raise them.
- Obtain concurrence on the WRBP model with proposed changes so that members can take the recommended model back to the communities to obtain a decision their governing bodies by then. (A majority must vote yes to approve the model.)

Bay District has a lagoon that pretreats the sewage from the Bay District. Bay District is considering requesting an adjustment due to the reduction in strength of the Bay District’s outflow. Ray Korber is researching history of inflow versus outflow strength to determine if the difference is significant enough to request a reduction. WRBP initial comments on the request follow:

- Initial agreement with Bay District was for continual low flow from the lagoons. Bay District presently sends slugs of sewage depending on capacity at the time.
- The lagoon also sends algae to the plant which causes issues with the plants treatment process.

June Meeting

Vote to approve the WRBP model with proposed changes if all communities have obtained a decision from their governing bodies by then. (A majority must vote yes to approve the model.)

Attachment 1 is the spreadsheet with the replies to the June 2, 2021 questions (as of June 13, 2021) system.

Attachment 2 is a copy of the Proposed modifications to the WRBP model.

SUGGESTED EDITS TO WRBP HYBRID FLOW MODEL
SUGGESTED EDITS PROVIDED IN RED TEXT

DRAFT

Sewer Flow Volumes

	Sewer Metered Areas		Un-sewer-metered Areas				Total Sewer Flows = Metered + Water Use + Demographic + I/I Estimate	Total flow % = metered + un-metered + I/I
	Baseline metered sewer flows includes sanitary and I/I (Note 1) (2015-2018)		Water Metered Areas Water Use Flow sanitary (no I/I)	Property Data Flow sanitary (no I/I) (Note 2)	Un-assigned Flows distributed as Local Sewer I/I to areas estimated using Water Use or Property Data. Estimated by weighted IDM (Note 4)	Un-assigned Flows distributed as Sewer Interceptor I/I (Shared by all based on % of flow) (Note 4)		
Belmont	Belmont PS - Soda Brook - Eptam - Quality Control (4 yr MG Total)	150.51	4 yrs water use - Sunlake (MG) 8.14 4 yrs water use - Cates (MG) 7.95 4 yrs water use - Westview (MG) 5.10 4 yrs w/ avg as yr 4 water use - Solar (MG) 7.11 4 yr water use - Court St. (MG) 15.38	residential (4 yr MG Total) 114.70 commercial (4 yr MG Total) 15.88	Subbasin BT1 local sewers plus WRBP Belmont PS gravity sewer to WRBP main trunk line interceptor @ 974ft (note 5)			
	Totals (4 yr MG total): <i>Annual Average (MGD)*</i>	150.51 <i>0.103</i>	43.68 <i>0.030</i>	130.58 <i>0.089</i>	22.25 <i>0.015</i>	7.05 <i>0.005</i>	354.07 <i>0.243</i>	4.51%
Franklin	River St PS (4 yr MG Total)	955.63	Water Use 2016-2019 (4 yr MG Total)		Subbasin STP1 local sewers plus WRBP River PS gravity sewer to WRBP main trunk line interceptor @ 30ft			
	Totals (4 yr MG total): <i>Annual Average (MGD)*</i>	955.63 <i>0.655</i>	134.23 <i>0.092</i>		13.22 <i>0.009</i>	22.42 <i>0.015</i>	1125.51 <i>0.771</i>	14.35%
Northfield			T-N Aqueduct Northfield only Water Use + Soda Brook (4 yr MG Total)		Subbasin NF1 local sewers			
	Totals (4 yr MG total): <i>Annual Average (MGD)*</i>		145.50 <i>0.100</i>		5.90 <i>0.004</i>	3.08 <i>0.002</i>	154.48 <i>0.106</i>	1.97%
Tilton	Tilton Main + TF1 + TS1 (4 yr MG Total)	392.84	water use 4 yrs. - Pennichuck 3.07 water use Lochmere - flat rate 34.16 water use T/N Aqueduct 95.13	64 Connections (4 yr MG Total) (Note 3) 11.68	Subbasin TN1 (local sewers)			
	Totals (4 yr MG total): <i>Annual Average (MGD)*</i>	392.84 <i>0.269</i>	132.46 <i>0.091</i>	11.68 <i>0.008</i>	17.66 <i>0.012</i>	11.28 <i>0.008</i>	565.91 <i>0.388</i>	7.21%
Bay District	Bay District PS	142.42						
	Totals (4 yr MG total): <i>Annual Average (MGD)*</i>	142.42 <i>0.098</i>				2.90 <i>0.002</i>	145.32 <i>0.100</i>	1.85%
Gilford	Oxbow + McIntire + GL1	1128.82						
	Totals (4 yr MG total): <i>Annual Average (MGD)*</i>	1128.82 <i>0.773</i>				22.95 <i>0.016</i>	1151.77 <i>0.789</i>	14.68%
Laconia	Belmont Beach - Oxbow - ML1 - GL1 - Opechee	3329.93						
	Totals (4 yr MG total): <i>Annual Average (MGD)*</i>	3329.93 <i>2.281</i>				67.69 <i>0.046</i>	3397.62 <i>2.327</i>	43.31%
Meredith	ML1 - Bay District PS	696.72						
	Totals (4 yr MG total): <i>Annual Average (MGD)*</i>	696.72 <i>0.477</i>				14.16 <i>0.010</i>	710.88 <i>0.487</i>	9.06%
Sanbornnton	Lower Bay PS + TS1	117.93						
	Totals (4 yr MG total): <i>Annual Average (MGD)*</i>	117.93 <i>0.081</i>				2.40 <i>0.002</i>	120.33 <i>0.082</i>	1.53%
NHDAS	State School PS + Opechee	117.45						
	Totals (4 yr MG total): <i>Annual Average (MGD)*</i>	117.45 <i>0.080</i>				2.39 <i>0.002</i>	119.84 <i>0.082</i>	1.53%

*values in italic text are in MGD

Totals: 7032.25 455.87 142.26 59.03 156.32 7845.73

% flows accounted for by these methods compared to WWTF Influent: 89.63% 5.81% 1.81% 0.75% 1.99% 100.00% 100.00%

Assumptions/Data Sources:

1. Temporary meters (3 months of data) used in analysis include GL1, Opechee and Soda Brook.
2. Sewer estimates from demographic units for Belmont and Tilton assumes 125 GPD per connection per Equivalent Dwelling Unit (Single Family Dwelling). Seasonal properties are assumed at 50%. Commercial properties are estimated using the Town of Belmont EDU based billing system and 125 GPD per EDU.
3. Assumes each connection equal to 1 EDU per Town of Belmont billing system.
4. Un-assigned flows allocated as I/I to gravity wastewater collection system located in un-metered areas (areas estimated using water use or property data) based on idm.
5. Gravity sewer is located in Tilton and conveys flow from Belmont PS and industrial park located on Rt. 140 in Northfield.

SUGGESTED EDITS TO WRBP HYBRID FLOW MODEL SUGGESTED EDITS PROVIDED IN RED TEXT

DRAFT

Total Unassigned Flow for Un-Metered Service Areas

WWTF Influent Flow (4 yr MG total)	7845.73
less sewer metered flow (4 yr MG total)	-7032.25
less water use flow (4 yr MG total)	-455.87
less property data flow (4 yr MG total)	-142.26
Un-assigned flows (4 yr MG total)	215.35

Un-assigned flows distributed as I/I using idm and material per table below.

Sewer Data for Un-Sewer-Metered WRBP Service Areas

Primary Community Served	Material	Material Multiplier (1)	Gravity Sewer inch-diameter-miles, idm	Weighted idm	Percent of Weighted idm	Flow Assigned as I/I (4 yr MG total)	Flow Assigned as I/I (MGD)
Belmont	PVC	1	111.06 (2, 2a)	111.06	10.3%	22.25	0.015
Franklin	PVC, DI, AC	1	32.35	32.35			
	VC, unknown	1	33.63	33.63			
	Total		65.98 (3)	65.98	6.1%	13.22	0.009
Tilton	PVC	1	88.12 (4)	88.12	8.2%	17.66	0.012
Northfield	PVC	1	29.46 (5)	29.46	2.7%	5.90	0.004
WRBP Interceptor Trunk Line (WWTF to Belmont Beach Flow Meter, Serves Multiple)	RC	1	780.15 (6)	780.15	72.6%	156.32	0.107
Total				1074.78	100%	215.35	0.148

For reference only. Not included in model as shown.

GPD/idm	No. Connections	Connections per IDM
137	1080	9.7
137	438	6.6
137	290	3.3
137	371	12.6
137		

idm = inch diameter-mile

- (1) Factor applied to collection system IDM to account for different levels of I/I believed to be present in the system.
- (2) Subbasin BT1 (aka subbasins F, G, H, I, J, K, L, M, N, O, and P) equal to approximately 108.29 idm. Idms include municipal gravity sewer mainlines and private gravity sewer mainlines.
- (2a) WRBP gravity interceptor between WRBP Belmont PS and WRBP main shared interceptor. 975 LF of 15" PVC (assumed) equals 2.77 idm
- (3) Subbasin STP1 (aka subbasins 6, 7, and 8) and WRBP interceptor between WRBP River Street PS and WRBP main shared interceptor (30 ft of 24" RC) 0.14 idm
- (4) WRBP Subbasin TN1 based on sewer data provided by WRBP. Force main segments were filtered from the dataset (**ACTUAL IDMS TO BE CONFIRMED**). Pipe diameter information was missing for 93 segments (14260 LF) and was assumed to be 8" for those segments.
- (5) Per email dated 7/2/2020 from Glen Brown (Northfield) to Sharon McMillin (WRBP), includes 4.91 miles of 6" PVC pipe. Includes local sewers (**TBD if includes private sewers**)
- (6) WRBP Interceptor trunk line from Belmont Beach FM to WRBP WWTF. See example takeoff below.

WRBP Interceptor Trunk Line (WWTF to Belmont Beach Flow Meter) TAKEOFF (TO BE CONFIRMED)

Municipality	Section	Diameter (inch)	Length (LF)	idm	Comment
Franklin	Segment 1	60	9,276	105.41	Based on City of Franklin GIS
Franklin	Segment 2	48	8,940	81.27	Based on City of Franklin GIS
Franklin	Segment 3	60	465	5.28	Based on City of Franklin GIS
Northfield	Segment 4	60	12,625	143.47	Diameter assumed, length scaled off map
Tilton	Segment 5a	48	6,445	58.59	From Tilton sewer data
Tilton	Segment 5b	60	13,084	148.68	From Tilton sewer data
Belmont	Segment 6	60	5,581	63.42	Plan Set Named Winnisquam Interceptor Sewer Contract 6 (1975), 60" Gravity STA 100+21 to 156+02
Belmont	Segment 7	60	4,067	46.22	Plan Set Named Winnisquam Interceptor Sewer Contract 5 (1975), 60" Gravity STA 156+02 to 196+69
Belmont	Segment 8	60	5,096	57.91	Plan Set Named Winnisquam Interceptor Sewer Contract 4 (1975), 60" Gravity STA 196+69 to 247+65
Belmont	Segment 9	60	3,606	40.98	Plan Set Named Winnisquam Interceptor Sewer Contract 3 (1975), 60" Gravity STA 247+65 to 283+71
Belmont	Segment 10	48	3,182	28.93	Plan Set Named Winnisquam Interceptor Sewer Contract 3 (1975), 48" Gravity STA 283+71 to 315+53
Belmont	Segment 11	30	N/A (Force Main)		Plan Set Named Winnisquam Interceptor Sewer Contract 2 (1975), 30" FM STA 315+53 to 372+00
Total				780.15	

Values provided for discussion purposes, to be confirmed.

Item # 7

As of Jan 2, 2021

Rath, Young & Pignatelli Road Map Study

Budget Tracking sheets

Funds Available

\$ 51,900.00

Invoice #	Date of Invoice		Invoice Amount	Funds remaining
Road Map Development				
Invoice # 1	5/22/2018		\$ 2,858.00	\$ 49,042.00
Invoice # 2	6/20/2018		\$ 6,890.18	\$ 42,151.82
Invoice #3	6/30//2018		\$ 6,958.00	\$ 35,193.82
Invoice #4	8/20/2018		\$ 2,656.00	\$ 32,537.82
Road Map Phase 1				
<i>Carry Over from Previous Phase</i>				\$ 32,537.82
<i>Escrow for this phase</i>				\$ 65,000.00
<i>Total Available</i>				\$ 97,537.82
Invoice #1-1	20-Sep-18	79111	\$ 800.00	\$ 96,737.82
Invoice# 1-2	18-Oct-18	79407	\$ 896.00	\$ 95,841.82
Invoice #1-3	15-Feb-19	80548	\$ 924.00	\$ 94,917.82
Invoice #1-4	15-Mar-19	80800	\$ 759.00	\$ 94,158.82
Invoice #1-5	6/10/2019	81583	\$ 396.00	\$ 93,762.82
Invoice #1-6	7/18/2019	82002	\$ 330.00	\$ 93,432.82
Invoice #1-7	8/15/2019	82241	\$ 66.00	\$ 93,366.82
Invoice #1-8	9/17/2019	82524	\$ 1,584.00	\$ 91,782.82
Invoice 1-9	10/28/2019	82912	\$ 396.00	\$ 91,386.82

Invoice #	Date of Invoice		Invoice Amount	Funds remaining
Invoice 1-10	5/11/2020	84667	\$ 1,224.00	\$ 90,162.82
Invoice 1-11	6/19/2020	85172	\$ 782.00	\$ 89,380.82
Invoice 1-12	9/23/2020	85982	\$ 2,550.00	\$ 86,830.82
Invoice 1-13	10/23/2020	86266	\$ 1,394.00	\$ 85,436.82
Invoice 1-14	11/13/2020	86449	\$ 525.00	\$ 84,911.82
Invoice 1-15	12/15/2020	86722	\$ 1,480.00	\$ 83,431.82