

CHITTENDEN COUNTY REGIONAL PLANNING COMMISSION  
**MS4 SUBCOMMITTEE**  
 OF CLEAN WATER ADVISORY COMMITTEE – **DRAFT** MINUTES

DATE: **Tuesday, February 1, 2022**  
 SCHEDULED TIME: 12:15 p.m. to 1:30 p.m.  
 PLACE: Hybrid: In-person at CCRPC office and ONLINE via Zoom  
 DOCUMENTS: Minutes, documents discussed, ad presentations accessible at:  
<http://www.ccrpcvt.org/meetings/clean-water-advisory-committee/>

<b>Committee Members in Attendance (all attending online unless otherwise noted)</b>		
Burlington: James Sherrard	Burlington Airport: Catie Calabrese	Williston: Christine Dougherty
Colchester:	Milton: Kirsten Jensen	Winooski: Ryan Lambert
Essex: Annie Costandi, co-chair (in-person)	Shelburne: Chris Robinson	VAOT: Jennifer Callahan
Essex Junction:	South Burlington: Dave Wheeler	Univ. of VT: Lani Ravin
DEC:		
<b>Other Attendees:</b> Pluck: Dave Barron; WNRCD: Kristen Balschunat; Stone Environmental: Dave Braun, Meghan Arpino DEC: Jim Pease; LC Sea Grant & DEC: Jillian Sarazen; Fitzgerald Environmental: Joe Bartlett		
<b>CCRPC Staff:</b> Dan Albrecht (at CCRPC office), Sai Sarepalli		

**1. Call to Order, Changes to the Agenda and Public Comments on Items not on the agenda:**

The meeting was called to order at 12:08 p.m. Co-chair Costandi authorized Albrecht to facilitate the meeting. No changes to the agenda nor public comments were made.

**2. Review and action on draft minutes of January 4, 2022**

After a brief recap by Albrecht, *Sherrard made a motion to approve the minutes for the January 4<sup>th</sup> meeting, the motion was seconded by Wheeler. The motion was approved unanimously.*

**3. Review and action on approval of Calendar Year 2021 Minimum Control Measures #1 and #2 reports**

After a brief recap by Barron of the MCM#1 report, *Robinson made a motion to approve the 2021 MCM#1 Report, the motion was seconded by Ravin, and the motion was approved unanimously. Ravin then made a motion to approve the 2021 MCM#2 Report, the motion was seconded by Sherrard, and the motion was approved unanimously.*

**4. Dave Braun & Meghan Arpino of Stone Environmental: Recap of 2020 Stream Gauge Results and plans for 2022 season; draft 2020 Annual Report**

Braun & Arpino summarized the last five years of stream gauge operations from 2016 thru 2020. They applauded the work of their partner, Fitzgerald Environmental, for their field services. Key points in the 2020 report were as follows:

- Gauging stations were constructed on all 11 streams classified as stormwater impaired in Chittenden and Franklin Counties, Vermont.
- In all 11 study watersheds, the location selected for the gauging station is quite close to the downstream end of the stormwater impaired reach.
- The primary recording gauge installed at each station is a vented (gauge) pressure transducer.
- Discharge measurement locations and methods are determined at each site according to the flow conditions present at the time of the measurement. Low flow measurements obtained using a pygmy current meter are best suited for cross-sections with a narrow channel and relatively smooth bottom. High flow measurements using an AA Price current meter are best made at cross-sections with laminar flow and minimal flow disturbance from large rocks or other channel features.
- The 5-minute stage record, 5-minute precipitation record, and annual reports and deliverables are posted on the public website (<http://vt-ms4-flow.stone-env.com/FlowDev/index.html#>); data files contain raw data-, corrected data, and flags and comments describing any corrections made to the data.
- Outside of the winter period, gaps in the stage data record are generally infrequent and short, on the order of five minutes to a few hours in length.

- 1 • The development of the stage–discharge rating is one of the fundamental tasks in computing a flow  
 2 record.  
 3 • A network of precipitation monitoring stations was installed to provide representative and unique  
 4 precipitation data for each of the eleven stormwater-impaired watersheds in Chittenden and Franklin  
 5 Counties.  
 6 • Flow duration curves for each gauged stream were generated from combined 2017, 2018, 2019, and 2020  
 7 daily mean flows using the hydroTSM package in R (Zambrano-Bigiarini 2017) (Figures 20-30). The  
 8 0.3% and 95% daily mean flow exceedance values are shown in Table 10. The precipitation monitoring  
 9 network includes ten gauges installed and operated by Stone and FEA.  
 10 • The 0.3% and 95% daily mean flow exceedance values were compared to the corresponding TMDL  
 11 modeled and attainment values. However, **this is not an apples-to-apples comparison because the**  
 12 **stream gauge flow exceedances are calculated using daily data and the attainment and modeled**  
 13 **values are calculated using hourly data.** The option of re-running the stream gauging site analysis using  
 14 hourly data to obtain more accurate comparisons was discussed.

	From Daily Data	From Hourly Data	From Hourly Data	From Daily Data	From Hourly Data	From Hourly Data
Stream	2017-2020 Q 0.3% (cfs/mi <sup>2</sup> )	Modeled Q 0.3% (cfs/mi <sup>2</sup> )	Attainment Q 0.3% (cfs/mi <sup>2</sup> )	2017-2020 Q 95% (cfs/mi <sup>2</sup> )	Modeled Q 95% (cfs/mi <sup>2</sup> )	Attainment Q 95% (cfs/mi <sup>2</sup> )
Allen	14.53	11.74	11.27	0.02	0.20	0.22
Bartlett	8.93	11.35	10.27	0.05	0.20	0.22
Centennial	8.70	16.04	7.96	0.24	0.19	0.23
Englesby	8.42	15.46	11.53	0.00	0.19	0.21
Indian	11.54	11.64	11.53	0.10	0.21	0.21
Morehouse <sup>1</sup>	5.41	16.88	8.14	0.09	0.19	0.22
Munroe	15.73	12.01	11.27	0.00	0.20	0.22
Potash	10.34	12.24	10.27	0.08	0.20	0.22
Rugg <sup>2</sup>	28.29	11.32	8.87	0.01	0.20	0.25
Stevens <sup>2</sup>	14.29	11.91	8.87	0.00	0.20	0.25
Sunderland	7.59	8.25	7.96	0.27	0.22	0.23

1. Morehouse Brook watershed is DEC's boundary—does not exclude stormwater diversion to Winooski River

2. High flow diversion from Stevens to Rugg Brook above the gauges not considered in watershed areas

Table 10. 0.3% and 95% exceedance values for 2017-2020 daily mean flows

Stream	2017/2018/2019/2020 Q 0.3% (cfs/mi <sup>2</sup> )	2017/2018/2019/2020 Q 95% (cfs/mi <sup>2</sup> )
Allen	14.53	0.02
Bartlett	8.93	0.05
Centennial	8.7	0.24
Englesby	8.42	0.00
Indian	11.54	0.10
Morehouse	5.4	0.09
Munroe	15.7	0.00
Potash	10.34	0.08
Rugg	28.29	0.01
Stevens	14.29	0.00
Sunderland	7.59	0.27

- By definition, stream flows exceed the 0.3% high flow targets for 0.3% of the year, so approximately one day (actually 26 hours).
- Low flow targets need to be reassessed as they seem unrealistic depending upon underlying geology. All streams except Centennial Brook and Sunderland Brook have much lower 95th percentile flow exceedance values than the modeled or attainment values (i.e., low flows are lower than modeled). Braun speculated this result primarily arises because the representation of groundwater flow in the TMDL modeling exercise was poor; while impervious surfaces reduce groundwater recharge, the degree of departure seen likely has more to do with the hydrogeologic setting of these small streams than stormwater management practices.

Members thanked Mr. Braun and Ms. Arpino for their presentation. Braun indicated he would be sending a proposal to the towns for funding in the neighborhood of \$20,000 to develop more accurate calculations by re-running the flow exceedance analysis using hourly mean flow data and excluding the winter data.

##### **5. Staff and member updates as needed**

Albrecht noted he debriefed leadership and equity staff here at CCRPC regarding the WVMT advertising discussion at the January meeting. CCRPC does not have any official policy regarding advertising. In the case of WVMT, they agreed with the solution of running the ads during the locally-oriented morning programming. In general, CCRPC is in favor of advertising so as to engage with the target audience of the given project/program.

Balschunat noted that she is taking a job with the Vermont Youth Conservation Corps as a Water Quality Project Manager effective later this month. Her last day with WNRCD will be February 18<sup>th</sup>. She thanked the Committee for the opportunity to work with them these past few years. Members thanked her for her service to the communities.

##### **7. Items for March 2<sup>nd</sup> meeting agenda**

Update on Adopt-a-Drain program; Discussion of new state regulation within the 3-9050 permit going to effect on 7/1/22 that will regulate a discharge from new development or redevelopment equal to or greater than ½ acre;

##### **8. Adjournment**

The meeting was adjourned at approximately 1:25 p.m.

*Respectfully submitted, Dan Albrecht*