Appendix D

DES Dam Bureau Relief Flow Assessment for Sites 19 and 35

Souhegan River Water Management Plan

August 2013

STATE OF NEW HAMPSHIRE
INTER-DEPARTMENT COMMUNICATION

DATE: February 9, 2009

FROM: Daniel Mattaini, P.E. **AT (OFFICE):**
Senior Project Engineer
Maintenance Section
Dam Bureau – Water Division

SUBJECT: Preliminary Assessment of the use of flood control Site 35 and Site 19 for releases of water during droughts by creating and utilizing extra storage

TO: Wayne Ives
Watershed Bureau – Water Division

The feasibility of the use of the sites was checked by determining if enough usable storage was available, what the cost would be to retrofit the dams to operate them in this manner, and the extent of potential legal issues which would be involved in acquiring the rights from the landowners to permanently flood their property.

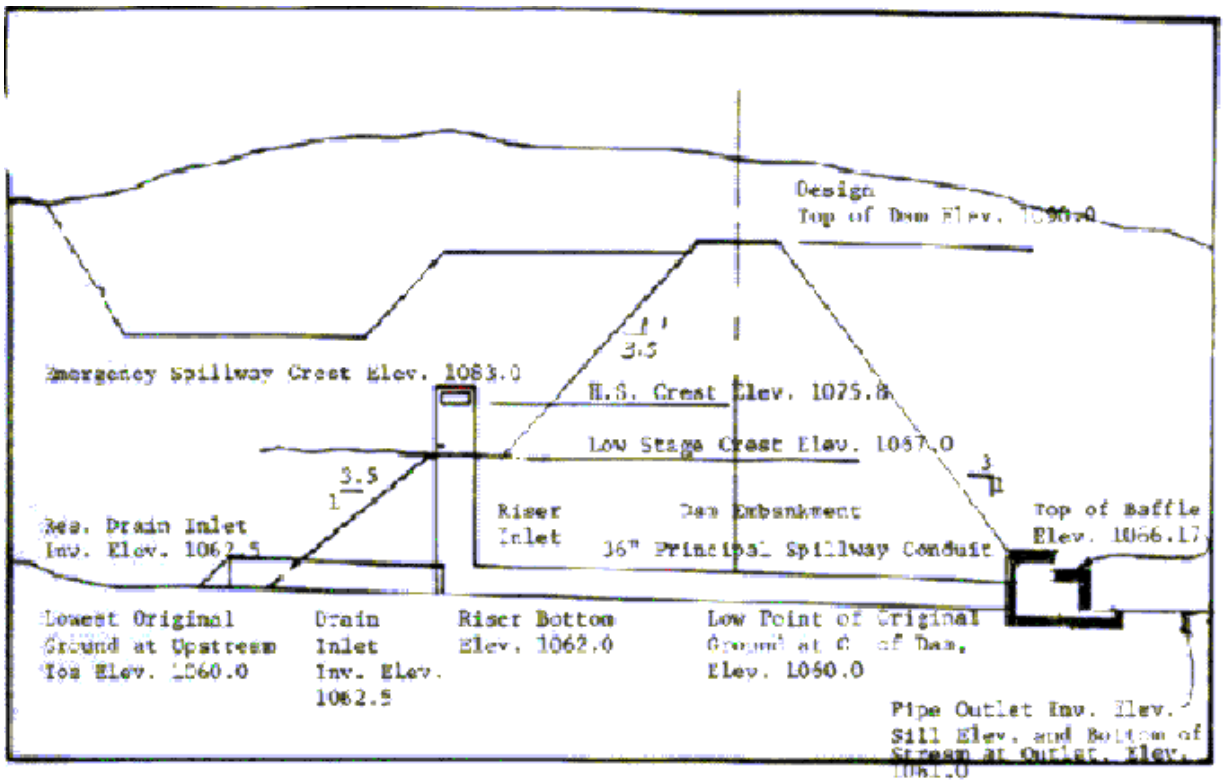
First a check on the availability of the required volume of water from the two sites was conducted and the volume compared to the expected required amount to meet the specified Lower Deficit Flow value (LDF) for this river system. Professor Ballestero had previously determined over a 48-hour period, 177.05 ac-ft are needed at a flow rate of 44.63 cfs for 48 hours to met this requirement. Incorporating with a 9 hour ramp up and 9 hour ramp down period, the total volume required increases 210.25 ac-ft of storage for the entire event.
The storage between the current pool elevation and the starting water surface elevation used in national Resource Conservation Service (NRCS) design storm flood routing calculations was determined. This potential available storage was further limited to pool elevations that provided enough head to drive the required LDF flowrate or greater though the outlet works. It was determined Site 35 has 118.2 ac-ft and Site 19 has 498.61 ac-ft of storage in this range.

A preliminary cost estimate was made to find the cost per tower to retrofit a new gate system at the location of the lower primary inlet. This would include increasing the size of the openings as required, to install a thimble and gate at the opening, and to install a hoist mechanism with a stainless steel stem to extend to the top of the tower. A new inlet would have to be installed at the new new pond level. The projected cost to modify each tower would be $136,000 per tower.

Investigations into the land ownership rights for the two sites indicate that while we have flowage rights on multiple landowners properties up to an elevation far above the elevation to which we are suggesting we raise the operating pool level, these rights are only applicable during high flow/flooding events. The current agreements with the landowners only allow us to permanently flood the areas at an elevation equal to the low level inlet. Site 19 would require negotiations with approximately 20 or more landowners to allow us to permanently inundate more of their land, and Site 35 would require another approximately 20 more landowners have an agreement negotiated.

Discussions with the NRCS would be required and their agreement required before any such use of the flood control sites could be considered.

Site 35 profile:



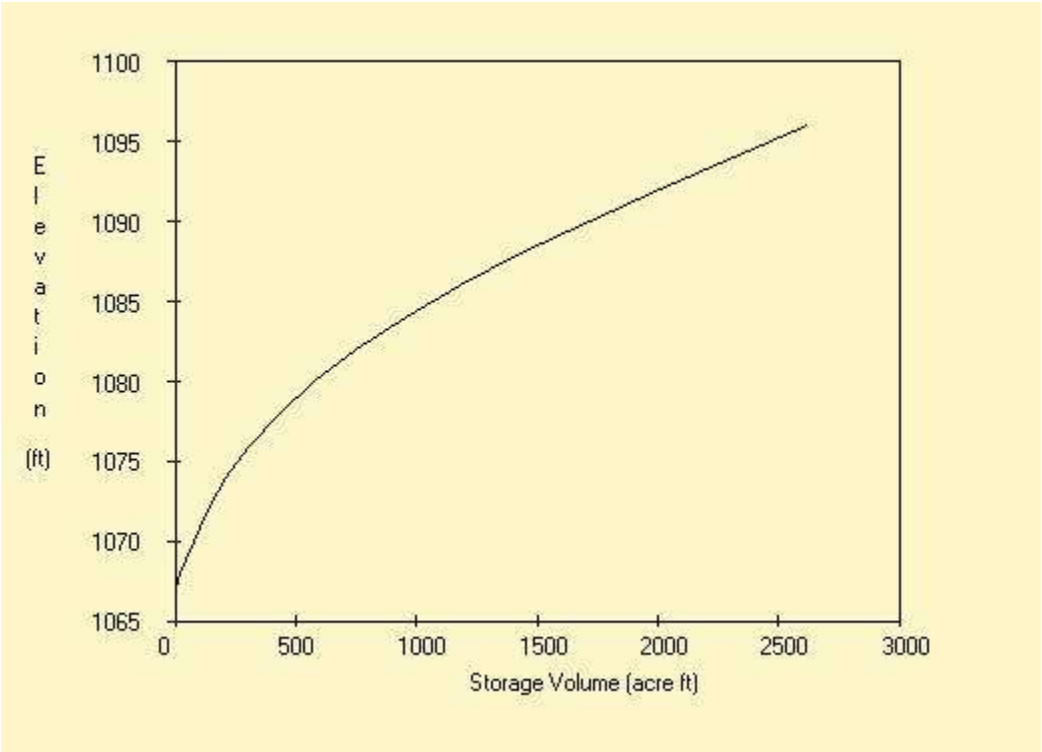
Site 35 rating table:

RATING TABLE NUMBER 1

	ELEV. FEET	Q-TOTAL CFS	Q-PS CFS	Q-AUX. CFS	VOLUME AC-FT	AREA ACRE
1	1067.00	0.00	0.00	0.00	0.00	0.00
2	1067.35	1.96	1.96	0.00	7.64	0.00
3	1067.71	5.54	5.54	0.00	15.29	0.00
			TRANSITION TO ORIFICE FLOW, ELEV = 1068.06 FT			
4	1068.06	10.17	10.17	0.00	23.17	0.00
5	1070.64	43.62	43.62	0.00	92.50	0.00
6	1073.22	60.85	60.85	0.00	181.16	0.00
7	1075.80	74.18	74.18	0.00	300.34	0.00
8	1076.09	84.24	84.24	0.00	315.75	0.00
9	1076.38	101.50	101.50	0.00	333.30	0.00
			FULL CONDUIT FLOW, ELEV = 1076.67 FT			
10	1076.67	123.43	123.43	0.00	350.86	0.00
11	1083.11	148.88	148.88	0.00	862.36	0.00
12	1089.56	170.57	170.57	0.00	1653.93	0.00
13	1096.00	189.80	189.80	0.00	2618.70	0.00

Site 35 storage:

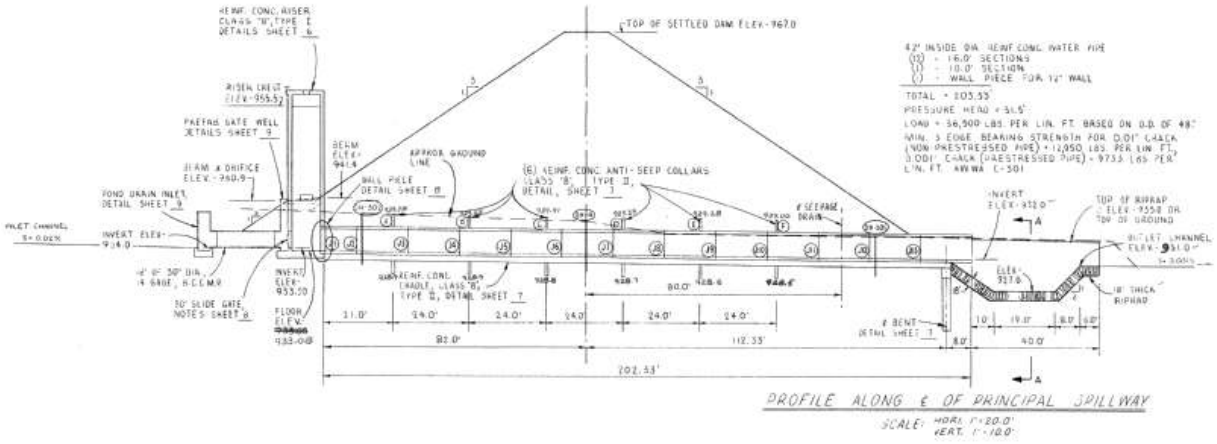
Elevation:	Storage (Ac-ft)
1067	0
1068	21.6
1070	72.5
1072	134.9
1074	210.7
1076	310.3
1078	431.4
1080	577
1082	750.7
1084	951.3
1086	1178.6
1088	1430.2
1092	2005.1
1096	2618.7



Site 35 outlet description:

Size of inlet gate: 3.00’w X 1.83’h.

Site 19 profile:



Site 19 rating table:

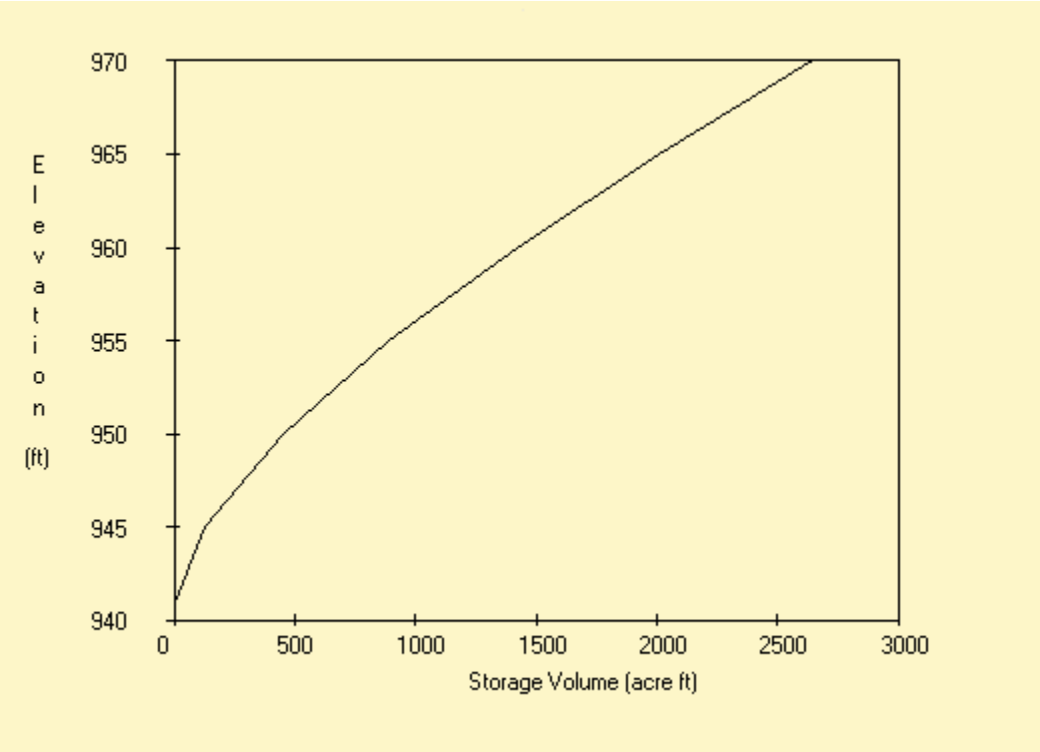
RATING TABLE DEVELOPED, SITE = 19 :
WITH PS DEVELOPED BY PROGRAM AND NO AUX. DATA GIVEN.

RATING TABLE NUMBER 1

	ELEV. FEET	Q-TOTAL CFS	Q-PS CFS	Q-AUX. CFS	VOLUME AC-FT	AREA ACRE
1	940.90	0.00	0.00	0.00	0.00	0.00
2	941.09	0.99	0.99	0.00	5.97	0.00
3	941.29	2.81	2.81	0.00	11.94	0.00
			TRANSITION TO ORIFICE FLOW, ELEV = 941.48 FT			
4	941.48	5.16	5.16	0.00	17.90	0.00
5	946.15	39.35	39.35	0.00	200.12	0.00
6	950.83	55.41	55.41	0.00	520.09	0.00
7	955.50	67.76	67.76	0.00	943.45	0.00
8	956.06	96.67	96.67	0.00	1002.93	0.00
9	956.63	148.40	148.40	0.00	1062.41	0.00
			FULL CONDUIT FLOW, ELEV = 957.19 FT			
10	957.19	214.97	214.97	0.00	1121.90	0.00
11	961.46	233.77	233.77	0.00	1590.79	0.00
12	965.73	251.13	251.13	0.00	2102.33	0.00
13	970.00	267.37	267.37	0.00	2647.69	0.00

Site 19 storage:

Elevation:	Storage (Ac-ft)
940.9	0
945	126.1
950	446.6
955	890.7
960	1418.1
965	2009
970	2647.7



Site 19 outlet description:

Size of inlet: 3.75’w X 1’h.

SITES program output for Site 19:

```
1*************************************************************************
********
 SITES XEQ 11/06/2008   WATER RESOURCE SITE ANALYSIS COMPUTER
PROGRAM
     VER 2005.1.3              (USER MANUAL - DATED OCTOBER 2007)
     TIME 07:28:19

 ************************** 80-80 LIST OF INPUT DATA
***************************

 SITES     01/01/200519       Souhegan Site 19             11.43     A1
 SAVMOV    0    101
 SAVMOV    101  1                                          1
 *         Original area = 7276.8 acres,  new = 7315.2 (1988= )
 *         Original CN = , new in 2007 = 68 woods good (1988 = )
 *         Original Tc =   hr., w/Spatial Analyst =  1.7 hr.
 *         baseflow in DAMS2 was 3.2 x   =  cfs
 *         now 3.2 CSM x 11.43 = 36.6 cfs
 STRUCTURE 19
                940.9                          0
                945                            126.1
                950                            446.6
                955                            890.7
                960                            1418.1
                965                            2009
                970                            2647.7
 ENDTABLE
 WSDATA    5C 19  AC 68       7315.2    3.5
 BASEFLOW           3.2
 PDIRECT   2.15      6.4       12.1
 POOLDATA  ELEV              940.9                          TC
 PSINLET   ELEV      1        21       955.5     1        3.75
 PSDATA    1        203.33    42                .012      933.75
 GRAPHICS  I
 GO,DESIGN LN
 SAVMOV    2    101  1                 19
 ENDJOB


*************************************************************************
*******

1SITES XEQ 11/06/2008 ------------- COMMENT PAGE -------------------------------
      VER 2005.1.3              Souhegan Site 19             WSID = 19
```

Original area = 7276.8 acres, new = 7315.2 (1988=)

Original CN = , new in 2007 = 68 woods good (1988 =)

Original Tc = hr., w/Spatial Analyst = 1.7 hr.

baseflow in DAMS2 was 3.2 x = cfs

now 3.2 CSM x 11.43 = 36.6 cfs

***** MESSAGE - DRAINAGE AREA FROM WSDATA CONTROL BEING CONVERTED FROM
ACRES TO SQUARE MILES FOR COMPUTATION PURPOSES.

1SITES ----------
XEQ 11/06/2008 Souhegan Site 19 WSID= 19
VER 2005.1.3 SUBW= 19
TIME 07:28:19 SITE = 19 PASS= 1 PART= 1

********** BASIC DATA **********

CLIMATE AREA - NOT DEFINED DESIGN CLASS C

STORM DISTRIBUTION PSH..10 DAY NRCS DESIGN STORM (CHAPTER 21, NEH4 & TR-60).

STORM DISTRIBUTION USED FOR AUXILIARY SPILLWAY IS;
NRCS DESIGN STORM RAINFALL DISTRIBUTION (CHAPTER 21, NEH4 & TR-60).

PRECIP. -	P-PS,1-DAY	P-PS,10-DAY	Q-SD	Q-FB
	6.40	12.10	0.00	0.00

WSDATA -	CN	DA-SM	TC/L	-/H	QRF
	68.00	11.43	3.50	0.00	0.00

SITEDATA-	PERM POOL	CREST PS	FP SED	VALLEY FL	378?
	0.00	940.90	0.00	0.00	NO

BASEFLOW	INITIAL EL	EXTRA VOL	SITE TYPE
3.20	0.00	0.00	DESIGN

```
PSDATA -  NO. COND       COND L        DIA/W          -/H
            1.00       203.33        42.00          0.00

            PS N          KE        WEIR L        TW EL
           0.012         1.00        21.00       933.75

          2ND STG        ORF H         ORF L     START AUX.
           955.50         1.00         3.75          0.00

ASCRESTS -   AUX.1        AUX.2        AUX.3        AUX.4        AUX.5
            0.00         0.00         0.00         0.00         0.00

AUX.DATA -  REF.NO.    RETARD. Ci   TIE STATION    INLET LENGTH
              0         0.00         0.00            0

AUX.DATA - INLET N     SIDE SLOPE       EXIT N      EXIT SLOPE     ACTUAL
AUX?
           0.000         0.00        0.000        0.000           NO

BTM WIDTH -    BW1          BW2          BW3          BW4          BW5
            0.00         0.00         0.00         0.00         0.00


1SITES ---------------------------------------------------------------------
 XEQ 11/06/2008              Souhegan Site 19                 WSID= 19
 VER 2005.1.3                                              SUBW= 19
 TIME 07:28:19          SITE = 19              PASS=    1     PART=   2


 CREST PS       940.90 FT       0.0 ACFT      0.00 AC       0.0 CFS

 SED ACCUM      940.90 FT       0.0 ACFT      0.00 AC       0.0 CFS

 BASEFLOW       945.92 FT     185.3 ACFT      0.00 AC      36.6 CFS

 2ND STAGE      955.50 FT     943.4 ACFT      0.00 AC      67.8 CFS

 START ELEV     945.92 FT     185.3 ACFT      0.00 AC      36.6 CFS


 NRCS-PSH  RAINFALL   1-DAY =   6.40 IN    10-DAY =  12.10 IN    DA =  11.43 SM
         RUNOFF     1-DAY =   2.93 IN    10-DAY =   5.08 IN

     CLIMATIC INDEX = 2.15    CN 10-DAY = 50.    CN 1-DAY =  68.
     QRF  =    110.32 CFS      956.21 FEET,  FROM CLIMATIC INDEX
COMPUTATION.
```

PEAK = 4184.8 CFS, AT 121.8 HRS.

ROUTED RESULT - HYD TYPE EMAX VOL-MAX AMAX QMAX
NRCS-PSH 966.85 FT 2245.7 ACFT 0.00 AC 255.4 CFS

PS STORAGE 2245.7 ACFT, BETWEEN AUX. CREST AND SED. ACCUM ELEVATIONS.

DRAWDOWN (DDT) TEST 956.21 FT 1018.6 ACFT 110.32 CFS
CONTROL IS 1.000 BASEFLOW OR QRF

TIME TO DDT TEST DISCHARGE IS 9.44 DAYS - DRAWDOWN CONTINUING.

DRAWDOWN TIME = 9.43 DAYS, TO 110.4 CFS (LIMIT = 10.00 DAYS)

****
****

RATING TABLE DEVELOPED, SITE = 19 :
WITH PS DEVELOPED BY PROGRAM AND NO AUX. DATA GIVEN.

RATING TABLE NUMBER 1

	ELEV. FEET	Q-TOTAL CFS	Q-PS CFS	Q-AUX. CFS	VOLUME AC-FT	AREA ACRE
1	940.90	0.00	0.00	0.00	0.00	0.00
2	941.09	0.99	0.99	0.00	5.97	0.00
3	941.29	2.81	2.81	0.00	11.94	0.00
	TRANSITION TO ORIFICE FLOW, ELEV = 941.48 FT					
4	941.48	5.16	5.16	0.00	17.90	0.00
5	946.15	39.35	39.35	0.00	200.12	0.00
6	950.83	55.41	55.41	0.00	520.09	0.00
7	955.50	67.76	67.76	0.00	943.45	0.00
8	956.06	96.67	96.67	0.00	1002.93	0.00
9	956.63	148.40	148.40	0.00	1062.41	0.00
	FULL CONDUIT FLOW, ELEV = 957.19 FT					
10	957.19	214.97	214.97	0.00	1121.90	0.00
11	961.46	233.77	233.77	0.00	1590.79	0.00
12	965.73	251.13	251.13	0.00	2102.33	0.00
13	970.00	267.37	267.37	0.00	2647.69	0.00

```
1SITES ----------------------------------------------------------------------
 XEQ 11/06/2008              Souhegan Site 19                WSID= 19
 VER 2005.1.3                                          SUBW= 19
 TIME 07:28:19          SITE = 19              PASS=    1     PART=   3


 AUX. CREST      966.85 FT    2245.7 ACFT      0.00 AC     255.4 CFS

     PS STORAGE   2245.7 ACFT,  BETWEEN AUX. CREST AND SED. ACCUM
ELEVATIONS.

 START ELEV      956.21 FT    1018.7 ACFT      0.00 AC     110.4 CFS

 ELEVATION OF LOW POINT IS ZERO.  NO CRITERIA CHECK MADE FOR
 STRUCTURE CLASSIFICATION.

 ***** MESSAGE - NO INPUT DATA GIVEN FOR AUXILIARY SPILLWAY
CREST AND/OR
             BOTTOM WIDTH.   NO AUXILIARY SPILLWAY ROUTINGS
PERFORMED.
 ---------------------------------------------------------------------------

 Inflow Hyd 1 PSH-Peak =        255.40 CFS  at  134.37 hrs.,  Location Point
HYDOUT   1     19

1SITES....JOB NO.  1 COMPLETE.
 ---------------------------------------------------------------------------

 19          Souhegan Site 19

      0 SUBWATERSHED(S) ANALYZED.

      1 STRUCTURE(S) ANALYZED.

      1 HYDROGRAPHS ROUTED AT LOWEST SITE.

      0 TRIALS TO OBTAIN BOTTOM WIDTH FOR SPECIFIED STRESS OR
VELOCITY.


*************************************************************************
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SITES.....COMPUTATIONS COMPLETE

1 SUMMARY TABLE 1 SITES VERSION 2005.1.3
---------- DATED 01/01/2005

WATERSHED ID	RUN DATE	RUN TIME
19	11/06/2008	07:28:19

>>> SITE ID	SUBWS ID	SUBWS DA (SQ MI)	CURVE NO.	TC (HRS)	TOTAL DA (SQ MI)	TYPE DESIGN	STRUC CLASS <<<
19	19	11.43	68.	3.50	11.43	TR60	C

PASS NO.	DIA./ WIDTH (IN/FT)	AUX.CREST ELEV (FT)	BTM. WIDTH (FT)	MAX. HP (FT)	MAX. ELEV (FT)	EMB. VOL. (CY)	INTEGR.* DIST. (FT)	EXIT* VEL. (FT/SEC)	TYPE HYD

SITES.....SUMMARY TABLE 1 COMPLETED.

NRCS SITES VERSION 2005.1.3 ,01/01/2005
19 FILES

INPUT = C:\dan's old laptop files\NRCS new\NRCS BA new\SITES\Souhegan19\princ curvenumber SPATIAL.D2C
OUTPUT = C:\dan's old laptop files\NRCS new\NRCS BA new\SITES\Souhegan19\princ curvenumber SPATIAL.OUT
DATED 11/06/2008 07:28:19

GRAPHICS FILES GENERATED

OPTION "L" = C:\dan's old laptop files\NRCS new\NRCS BA new\SITES\Souhegan19\princ curvenumber SPATIAL.DRG DATED 11/06/2008 07:28:19

OPTION "P" = C:\dan's old laptop files\NRCS new\NRCS BA new\SITES\Souhegan19\princ curvenumber SPATIAL.DHY DATED 11/06/2008 07:28:19

OPTION "E" = C:\dan's old laptop files\NRCS new\NRCS BA new\SITES\Souhegan19\princ curvenumber SPATIAL.DEM DATED 11/06/2008 07:28:19

SITES program output for Site 35:

```
1*************************************************************************
********
 SITES XEQ 04/16/2007   WATER RESOURCE SITE ANALYSIS COMPUTER
PROGRAM
     VER 2005.0.1            (USER MANUAL - DATED MAY 2001)
     TIME 10:13:35

 ************************** 80-80 LIST OF INPUT DATA
***************************

 SITES     01/01/200535       Shgn Site 35                6.3421875 A1
 SAVMOV    0    101
 SAVMOV    101  1                                          1
 *        UPDATED run with Beathann's data - new rainfall used too
 *        Original area = 4026, new =4059, (1988 was 4090)
 *        Original CN = 65, new in 2007 = 64 woods good, (1988 was 68)
 *        2007 woods fair at 68; in the south, more developed, used 68
 *        Original Tc = 2 hr., w/Spatial Analyst = 2.31 hr.
 *        baseflow in DAMS2 was 3.2 x 6.39 = 20.4 cfs
 *        now 3.2 CSM x 6.34 = 20.3 cfs
 STRUCTURE 35       Stage-Storage curve with sediment
                1067                        0
                1068                        21.6
                1070                        72.5
                1072                        134.9
                1074                        210.7
                1076                        310.3
                1078                        431.4
                1080                        577
                1082                        750.7
                1084                        951.3
                1086                        1178.6
                1088                        1430.2
                1092                        2005.1
                1096                        2618.7
 ENDTABLE
 WSDATA    5C 35  AC 64       4059      2.31
 BASEFLOW           3.2
 PDIRECT   2.15      6.4       12.1
 POOLDATA  ELEV              1067                          TC
 PSINLET   ELEV      1        18        1075.8    1.83      3
 PSDATA    1        160.6     36                .012      1062.5
 GRAPHICS  I
 GO,DESIGN LN
```

```
 SAVMOV    2    101  1                35
 ENDJOB


*************************************************************************
*******

1SITES XEQ 04/16/2007 ------------- COMMENT PAGE -------------------------------
      VER 2005.0.1              Shgn Site 35              WSID = 35


 UPDATED run with Beathann's data - new rainfall used too

 Original area = 4026, new =4059, (1988 was 4090)

 Original CN = 65, new in 2007 = 64 woods good, (1988 was 68)

 2007 woods fair at 68; in the south, more developed, used 68

 Original Tc = 2 hr., w/Spatial Analyst = 2.31 hr.

 baseflow in DAMS2 was 3.2 x 6.39 = 20.4 cfs

 now 3.2 CSM x 6.34 = 20.3 cfs

 ***** MESSAGE - DRAINAGE AREA FROM WSDATA CONTROL BEING
CONVERTED FROM
                ACRES TO SQUARE MILES FOR COMPUTATION PURPOSES.


1SITES ---------------------------------------------------------------------
 XEQ 04/16/2007              Shgn Site 35                WSID= 35
 VER 2005.0.1        Stage-Storage curve with sediment          SUBW= 35
 TIME 10:13:35          SITE = 35              PASS=    1     PART=   1


 ****************************    BASIC DATA
*********************************
 CLIMATE AREA - NOT DEFINED                    DESIGN CLASS  C

 STORM DISTRIBUTION PSH..10 DAY NRCS DESIGN STORM (CHAPTER 21,
NEH4 & TR-60).

 STORM DISTRIBUTION USED FOR AUXILIARY SPILLWAY IS;
 NRCS DESIGN STORM RAINFALL DISTRIBUTION  (CHAPTER 21, NEH4 & TR-
60).
```

```
PRECIP. - P-PS,1-DAY    P-PS,10-DAY       Q-SD          Q-FB
          6.40        12.10         0.00          0.00

WSDATA -       CN         DA-SM         TC/L          -/H          QRF
         64.00         6.34         2.31         0.00         0.00

SITEDATA- PERM POOL     CREST PS       FP SED       VALLEY FL         378?
          0.00      1067.00         0.00         0.00          NO

        BASEFLOW      INITIAL EL     EXTRA VOL      SITE TYPE
          3.20         0.00         0.00        DESIGN

PSDATA -  NO. COND       COND L        DIA/W          -/H
          1.00       160.60        36.00         0.00

           PS N          KE        WEIR L        TW EL
         0.012         1.00        18.00      1062.50

         2ND STG        ORF H         ORF L     START AUX.
         1075.80         1.83         3.00         0.00

ASCRESTS -   AUX.1        AUX.2        AUX.3        AUX.4         AUX.5
          0.00         0.00         0.00         0.00         0.00

AUX.DATA -  REF.NO.    RETARD. Ci   TIE STATION    INLET LENGTH
             0         0.00         0.00            0

AUX.DATA - INLET N     SIDE SLOPE      EXIT N      EXIT SLOPE     ACTUAL
AUX?
         0.000         0.00        0.000        0.000          NO

BTM WIDTH -    BW1          BW2          BW3          BW4          BW5
          0.00         0.00         0.00         0.00         0.00


1SITES ----------------------------------------------------------------------
 XEQ 04/16/2007                Shgn Site 35                   WSID= 35
 VER 2005.0.1        Stage-Storage curve with sediment          SUBW= 35
 TIME 10:13:35           SITE = 35              PASS=    1     PART=   2


 CREST PS       1067.00 FT       0.0 ACFT      0.00 AC       0.0 CFS

 SED ACCUM      1067.00 FT       0.0 ACFT      0.00 AC       0.0 CFS
```

BASEFLOW 1068.89 FT 44.2 ACFT 0.00 AC 20.3 CFS

2ND STAGE 1075.80 FT 300.3 ACFT 0.00 AC 74.2 CFS

START ELEV 1068.89 FT 44.2 ACFT 0.00 AC 20.3 CFS

NRCS-PSH RAINFALL 1-DAY = 6.40 IN 10-DAY = 12.10 IN DA = 6.34 SM
RUNOFF 1-DAY = 2.55 IN 10-DAY = 4.26 IN

CLIMATIC INDEX = 2.15 CN 10-DAY = 45. CN 1-DAY = 64.
QRF = 61.21 CFS 1073.31 FEET, FROM CLIMATIC INDEX COMPUTATION.

PEAK = 2800.3 CFS, AT 121.0 HRS.

ROUTED RESULT - HYD TYPE EMAX VOL-MAX AMAX QMAX
NRCS-PSH 1083.06 FT 857.0 ACFT 0.00 AC 148.6 CFS

PS STORAGE 857.0 ACFT, BETWEEN AUX. CREST AND SED. ACCUM ELEVATIONS.

DRAWDOWN (DDT) TEST 1073.31 FT 184.4 ACFT 61.21 CFS
CONTROL IS 1.000 BASEFLOW OR QRF

TIME LIMIT REACHED = 10.00 DAYS; FLOW WAS 65.85 CFS, ELEV = 1074.19
ROUTING CONTINUING.

***** NOTE - EXTENSIVE TIME REQUIRED TO DRAWDOWN SITE; COMPUTATIONS
STOPPED AT 30 DAYS (61.29 CFS).

***** NOTE - CREST OF AUX. RAISED TO HOLD 175.90 ACFT NOT EVACUATED IN
DRAWDOWN TIME LIMIT. TOTAL STORAGE REQUIRED = 1032.93 ACFT,
NEW ELEVATION OF AUXILIARY SPILLWAY CREST = 1084.72 FT.

****
****
RATING TABLE DEVELOPED, SITE = 35 :

WITH PS DEVELOPED BY PROGRAM AND NO AUX. DATA GIVEN.

RATING TABLE NUMBER 1

	ELEV. FEET	Q-TOTAL CFS	Q-PS CFS	Q-AUX. CFS	VOLUME AC-FT	AREA ACRE
1	1067.00	0.00	0.00	0.00	0.00	0.00
2	1067.35	1.96	1.96	0.00	7.64	0.00
3	1067.71	5.54	5.54	0.00	15.29	0.00
	TRANSITION TO ORIFICE FLOW, ELEV = 1068.06 FT					
4	1068.06	10.17	10.17	0.00	23.17	0.00
5	1070.64	43.62	43.62	0.00	92.50	0.00
6	1073.22	60.85	60.85	0.00	181.16	0.00
7	1075.80	74.18	74.18	0.00	300.34	0.00
8	1076.09	84.24	84.24	0.00	315.75	0.00
9	1076.38	101.50	101.50	0.00	333.30	0.00
	FULL CONDUIT FLOW, ELEV = 1076.67 FT					
10	1076.67	123.43	123.43	0.00	350.86	0.00
11	1083.11	148.88	148.88	0.00	862.36	0.00
12	1089.56	170.57	170.57	0.00	1653.93	0.00
13	1096.00	189.80	189.80	0.00	2618.70	0.00

1SITES ----------

XEQ 04/16/2007 Shgn Site 35 WSID= 35

VER 2005.0.1 Stage-Storage curve with sediment SUBW= 35

TIME 10:13:35 SITE = 35 PASS= 1 PART= 3

AUX. CREST 1084.72 FT 1032.9 ACFT 0.00 AC 153.6 CFS

PS STORAGE 1032.9 ACFT, BETWEEN AUX. CREST AND SED. ACCUM ELEVATIONS.

START ELEV 1074.19 FT 220.1 ACFT 0.00 AC 65.8 CFS

ELEVATION OF LOW POINT IS ZERO. NO CRITERIA CHECK MADE FOR STRUCTURE CLASSIFICATION.

***** MESSAGE - NO INPUT DATA GIVEN FOR AUXILIARY SPILLWAY CREST AND/OR
BOTTOM WIDTH. NO AUXILIARY SPILLWAY ROUTINGS PERFORMED.

Inflow Hyd 1 PSH-Peak = 148.62 CFS at 130.09 hrs., Location Point

HYDOUT 1 35

1SITES....JOB NO. 1 COMPLETE.
---

35 Shgn Site 35

0 SUBWATERSHED(S) ANALYZED.

1 STRUCTURE(S) ANALYZED.

1 HYDROGRAPHS ROUTED AT LOWEST SITE.

0 TRIALS TO OBTAIN BOTTOM WIDTH FOR SPECIFIED STRESS OR VELOCITY.

****
****

SITES.....COMPUTATIONS COMPLETE

1 SUMMARY TABLE 1 SITES VERSION 2005.0.1
---------- DATED 01/01/2005

WATERSHED ID	RUN DATE	RUN TIME
35	04/16/2007	10:13:35

>>> SITE ID	SUBWS ID	SUBWS DA (SQ MI)	CURVE NO.	TC (HRS)	TOTAL DA (SQ MI)	TYPE DESIGN	STRUC CLASS <<<
35	35	6.34	64.	2.31	6.34	TR60	C

PASS NO.	DIA./ WIDTH (IN/FT)	AUX.CREST ELEV (FT)	BTM. WIDTH (FT)	MAX. HP (FT)	MAX. ELEV (FT)	EMB. VOL. (CY)	INTEGR.* DIST. (FT)	EXIT* VEL. (FT/SEC)	TYPE HYD

SITES.....SUMMARY TABLE 1 COMPLETED.

NRCS SITES VERSION 2005.0.1,01/01/2005
35 FILES

INPUT = c:\NRCS BA new\SITES\Souhegan35\Site 35 princ curvenumber SPATIAL.D2C
OUTPUT = c:\NRCS BA new\SITES\Souhegan35\Site 35 princ curvenumber SPATIAL.OUT
DATED 04/16/2007 10:13:35

GRAPHICS FILES GENERATED

OPTION "L" = c:\NRCS BA new\SITES\Souhegan35\Site 35 princ curvenumber SPATIAL.DRG DATED 04/16/2007 10:13:35

OPTION "P" = c:\NRCS BA new\SITES\Souhegan35\Site 35 princ curvenumber SPATIAL.DHY DATED 04/16/2007 10:13:35

OPTION "E" = c:\NRCS BA new\SITES\Souhegan35\Site 35 princ curvenumber SPATIAL.DEM DATED 04/16/2007 10:13:35