DRAINAGE CALCULATIONS, HYDRAULICS & HYDROLOGY REPORT

1492 Hartford – New London Turnpike (CT Route 85)
Montville, CT

April 8th, 2024

Green Site Design, LLC

DRAINAGE HYDRAULICS AND HYDROLOGY REPORT

1492 Hartford – New London Turnpike (CT Route 85)
Montville, CT

EXISTING CONDITIONS

The site is approximately 5.62 acres in area and is shown on the Existing Conditions Survey (Sheet 1 of the site plans). The site has frontage on Hartford – New London Turnpike (Route 85). There are approximately 0.38 acres of wetlands on the site.

PROPOSED DEVELOPMENT

The project proposes the development of a processing, material storage, and equipment storage facility. There will be no free standing buildings on the site but there will be several storage bays and a construction trailer.

The 5.62 acres site contains wetlands as shown on sheet 1. Of the 5.62 acres, 4.08 acres will be disturbed during the development process. There will be no disturbance within the wetlands or upland review area.

EXISTING AND PROPOSED HYDRAULICS

The stormwater management system has been designed to provide for zero increase in peak stormwater discharge from the site. The project has been designed to actually result in a decrease in the peak stormwater rates leaving the project site. The proposed stormwater water quality basin will provide treatment of the runoff from the proposed site.

The current site is divided into two, existing, drainage areas:

Existing Drainage Area 1	2.98 Acres
Existing Drainage Area 2	2.64 Acres

The development of the proposed site will result in two drainage areas:

Proposed Drainage Area 1	4.08 Acres
Proposed Drainage Area 2	1.54 Acres

Proposed Drainage Area 1 contains the developed site. The stormwater runoff from this area will be treated by the water quality basin in the northwestern corner of the site. Proposed Drainage Area 2 contains the wetlands and upland review area and will remain undeveloped.

Both the existing and the proposed conditions for the development site have been analyzed for the 2-year, 10-year, 25-year, 50-year, and 100 year design storms using the Rational Method.

Drainage Area 1

	2 Year	10 Year	25 Year	50 Year	100 Year
Existing	2.21 cfs	3.32 cfs	4.00 cfs	4.50 cfs	5.04 cfs
Proposed	0.00 cfs	0.00 cfs	0.00 cfs	0.00 cfs	0.00 cfs

Drainage Area 2

	2 Year	10 Year	25 Year	50 Year	100 Year
Existing	1.96 cfs	2.94 cfs	3.54 cfs	3.99 cfs	4.46 cfs
Proposed	0.70 cfs	1.05 cfs	1.27 cfs	1.43 cfs	1.60 cfs

EROSION & SEDIMENTATION CONTROL

The 2002 CT Guidelines for Soil Erosion & Sedimentation Control applies to the construction phase of the project. A detailed erosion and sediment control plan has been provided in the site development plans. The proposed stormwater water quality basin has been designed to function as sedimentation traps during stabilization.

The first calculation required by the Guidelines is for the sediment storage volume (SSV). The sediment storage volume is the calculation for one year of predicted sediment load. The required SSV calculation for the temporary sediment trap is shown below.

Drainage Area 1A

SSV = A(134CY/Acre)

A = 4.08 ACRE

SSV = 546.72 CY = **14,760 CF**

The second calculation required by the Guidelines is for wet storage volume (WSV). The wet storage volume is the volume in the basin that is located below the bottom of the riprap for the level spreader outlet of the basin. The volume of the wet storage is required to be half of the required SSV. The required wet storage volume is shown below along with the dry storage volumes (DSV).

Drainage Area 1A

WSV = DSV = SSV/2

= **7,380 CF**

The required and provided storage for each basin are as follows:

Drainage Area 1 (Bottom of Riprap Elev. = 206.5)
Sedimentation Trap

7,380 CF of Wet Storage Volume Required	11,965 CF Provided
7,380 CF of Dry Storage Volume Required	10,260 CF Provided
14,760 CF of Sediment Storage Volume Required	22,225 CF Total Provided

CONNECTICUT STORMWATER QUALITY MANUAL

The Connecticut 2004 Stormwater Quality Manual (Manual) applies to the post construction phase, for the operation of the facility. The temporary sediment traps have been designed to function as water quality basins after the site is stabilized. They all meet the criteria of the Connecticut Stormwater Quality Manual for a Water Quality Basin.

Drainage Area 1

WQV = (1")(R)(A)/12
A = 4.08 Acre
R = 0.05 + 0.009(I)
I = 0.05 Acres / 4.08 Acres = 0.012 (1.2%)
R = 0.061
WQV = 0.021 Ac-Ft = 903.9 CF (Required)
11,965 CF (Provided)

Once development of the site is completed, there will be a decrease in runoff from the site. The temporary sedimentation basin provides ample wet and dry storage volume to meet and exceed the requirements of the 2002 CT Guidelines for Soil & Sedimentation Control. Likewise, Water Quality Basin meets and exceeds the post construction requirements of the Connecticut 2004 Stormwater Quality Manual.

Hydrograph Summary Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066

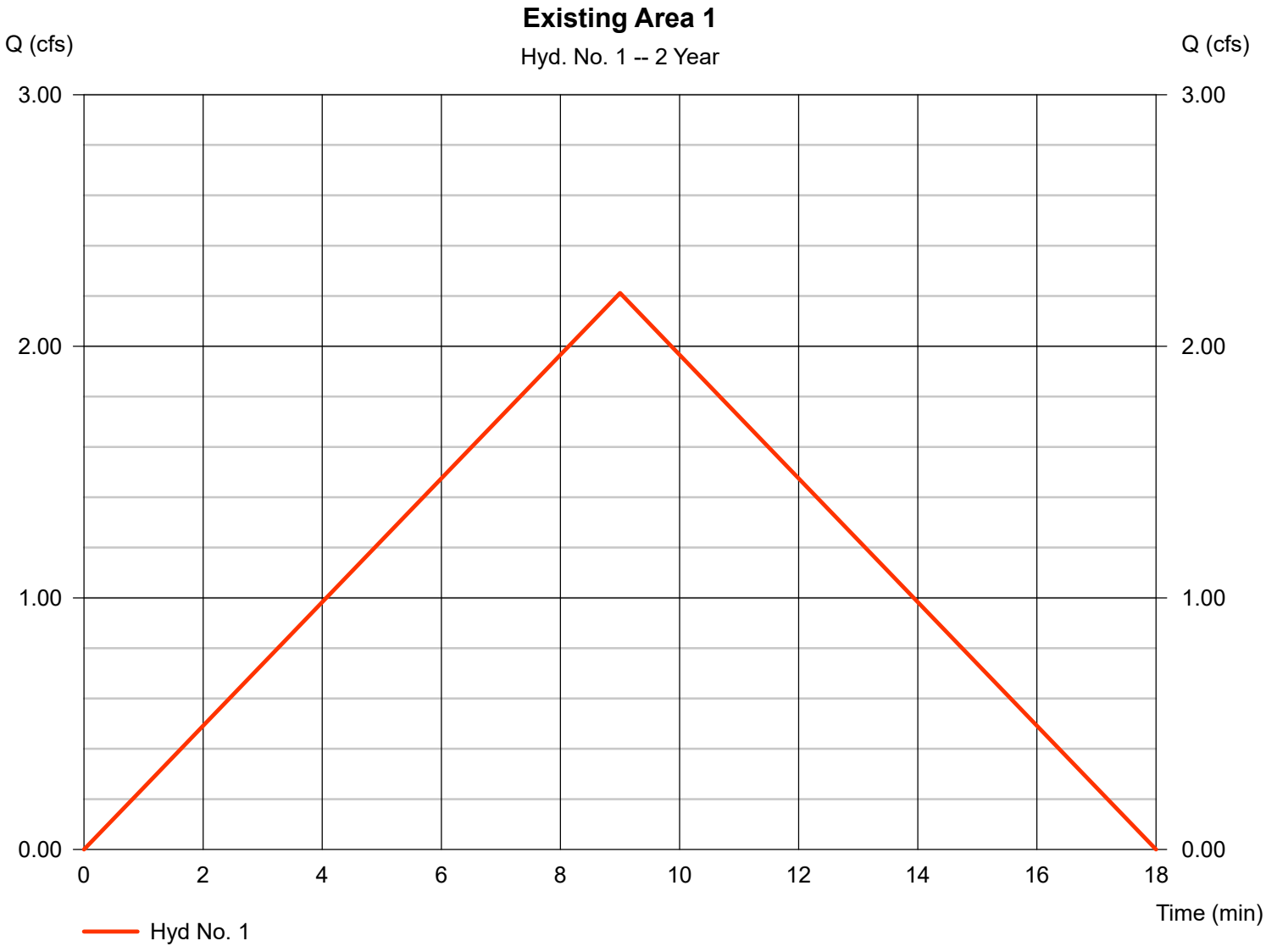
Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph description
1	Rational	2.212	1	9	1,194	------	------	------	Existing Area 1
2	Rational	3.028	1	9	1,635	------	------	------	Proposed Area 1
3	Reservoir	0.000	1	n/a	0	2	204.43	1,635	Water Quality Basin
4	Rational	1.960	1	9	1,058	------	------	------	Existing Area 2
5	Rational	0.702	1	22	926	------	------	------	Proposed Area 2

Hydrograph Report

Hyd. No. 1

Existing Area 1

Hydrograph type	=	Rational	Peak discharge	=	2.212 cfs
Storm frequency	=	2 yrs	Time to peak	=	9 min
Time interval	=	1 min	Hyd. volume	=	1,194 cuft
Drainage area	=	2.980 ac	Runoff coeff.	=	0.2
Intensity	=	3.711 in/hr	Tc by TR55	=	9.00 min
IDF Curve	=	GSD-60 NOAA.IDF	Asc/Rec limb fact	=	1/1

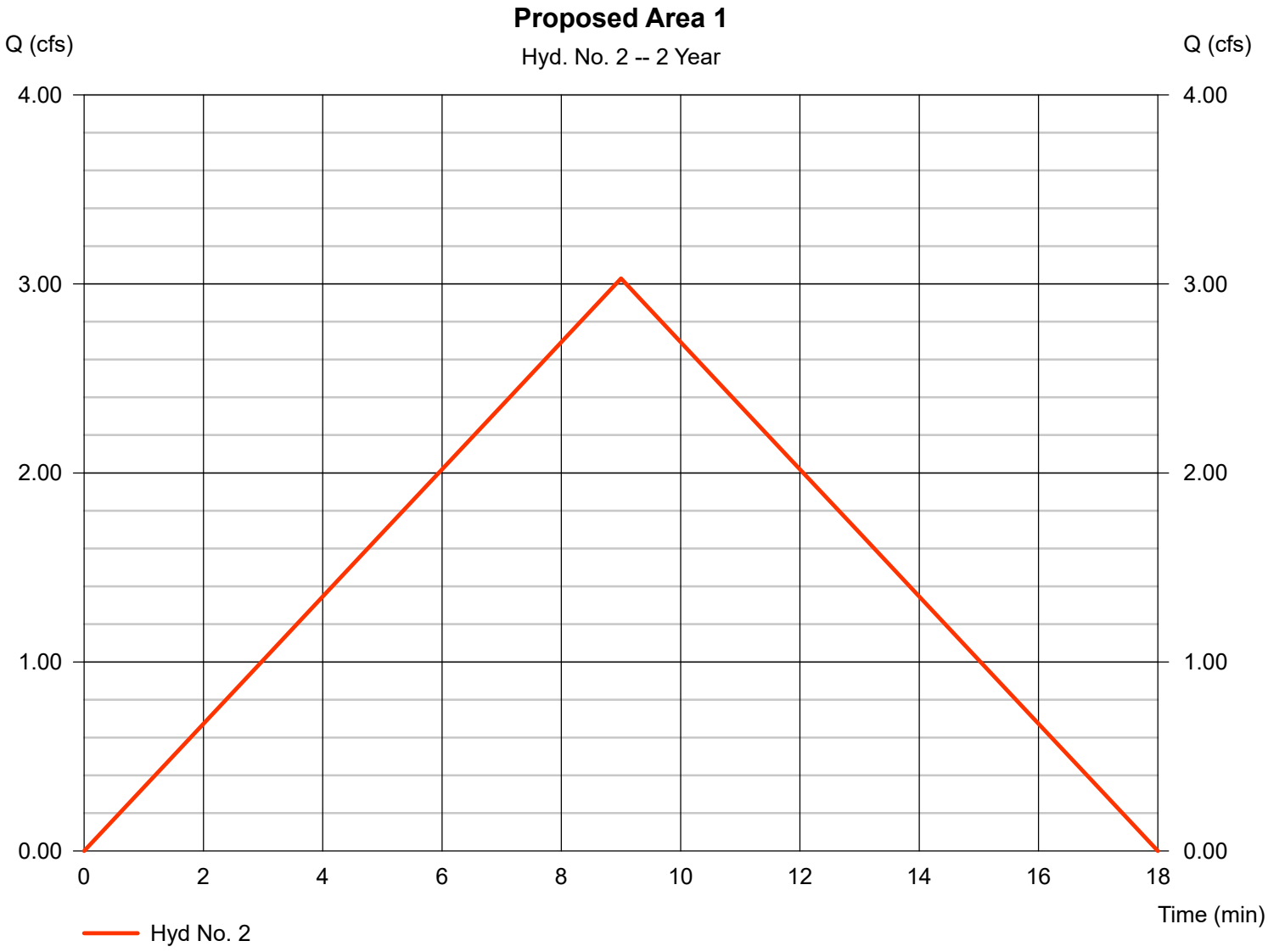


Hydrograph Report

Hyd. No. 2

Proposed Area 1

Hydrograph type	=	Rational	Peak discharge	=	3.028 cfs
Storm frequency	=	2 yrs	Time to peak	=	9 min
Time interval	=	1 min	Hyd. volume	=	1,635 cuft
Drainage area	=	4.080 ac	Runoff coeff.	=	0.2
Intensity	=	3.711 in/hr	Tc by TR55	=	9.00 min
IDF Curve	=	GSD-60 NOAA.IDF	Asc/Rec limb fact	=	1/1



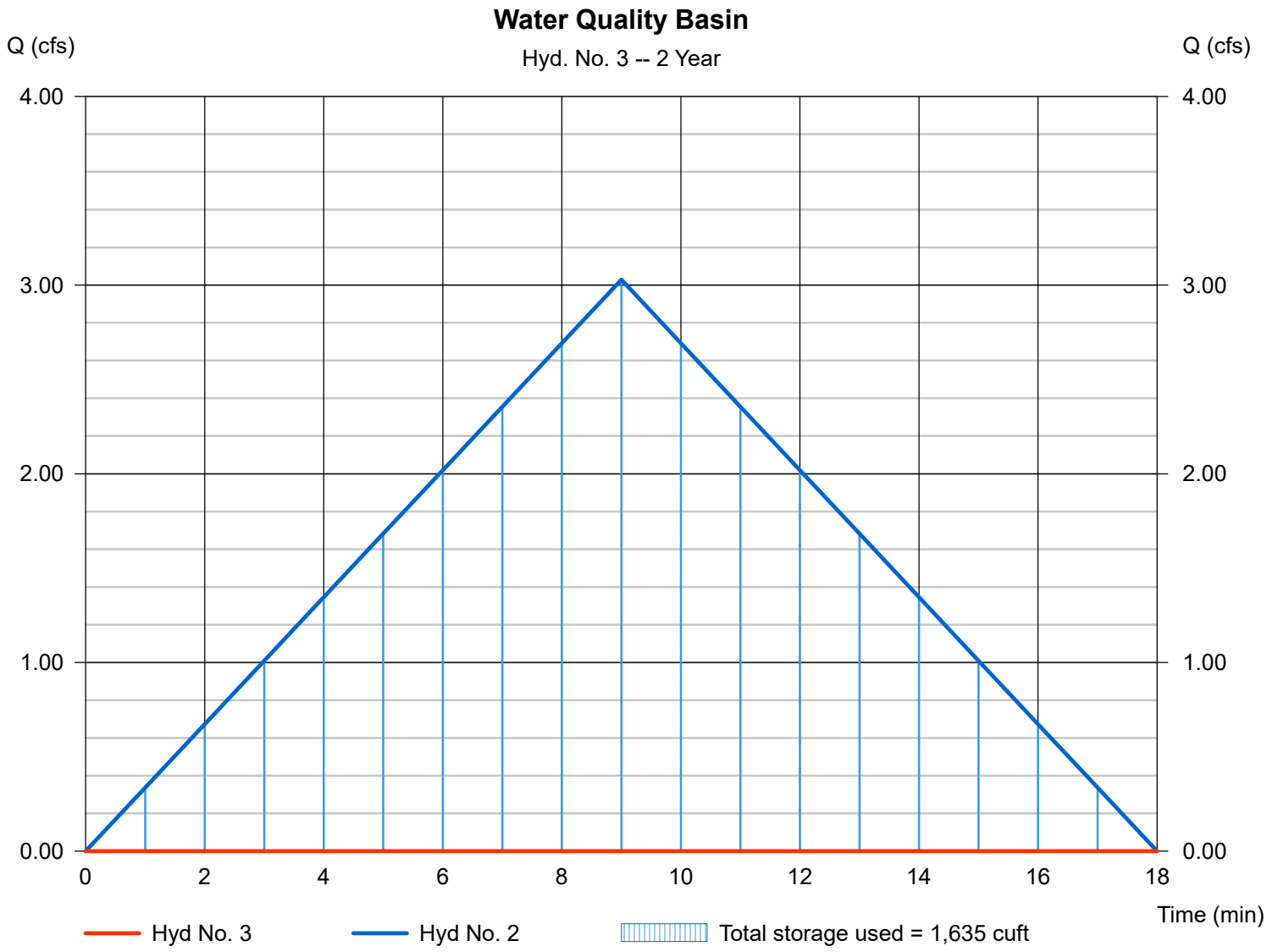
Hydrograph Report

Hyd. No. 3

Water Quality Basin

Hydrograph type	=	Reservoir	Peak discharge	=	0.000 cfs
Storm frequency	=	2 yrs	Time to peak	=	n/a
Time interval	=	1 min	Hyd. volume	=	0 cuft
Inflow hyd. No.	=	2 - Proposed Area 1	Max. Elevation	=	204.43 ft
Reservoir name	=	Pond 1	Max. Storage	=	1,635 cuft

Storage Indication method used.

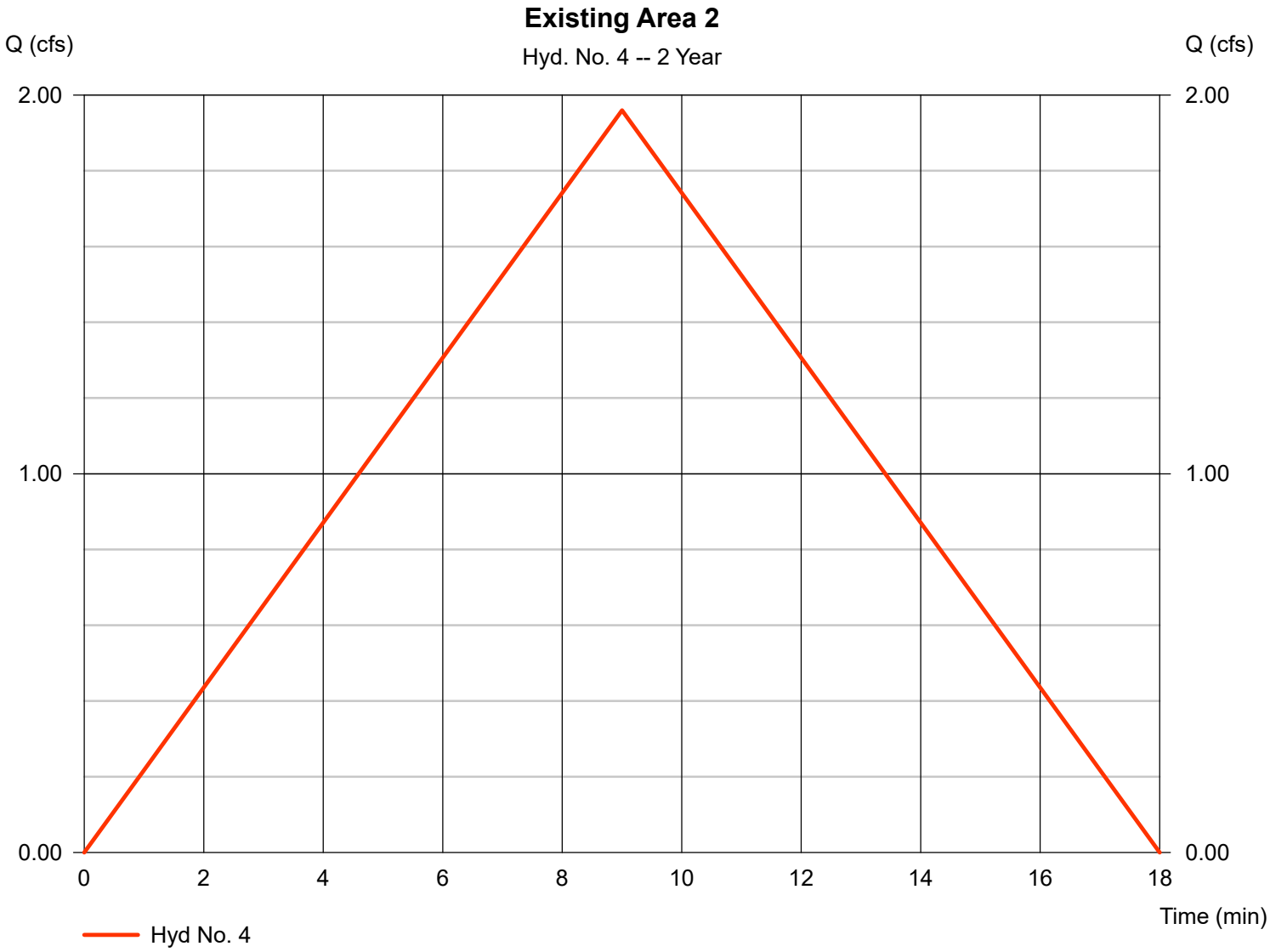


Hydrograph Report

Hyd. No. 4

Existing Area 2

Hydrograph type	=	Rational	Peak discharge	=	1.960 cfs
Storm frequency	=	2 yrs	Time to peak	=	9 min
Time interval	=	1 min	Hyd. volume	=	1,058 cuft
Drainage area	=	2.640 ac	Runoff coeff.	=	0.2
Intensity	=	3.711 in/hr	Tc by TR55	=	9.00 min
IDF Curve	=	GSD-60 NOAA.IDF	Asc/Rec limb fact	=	1/1

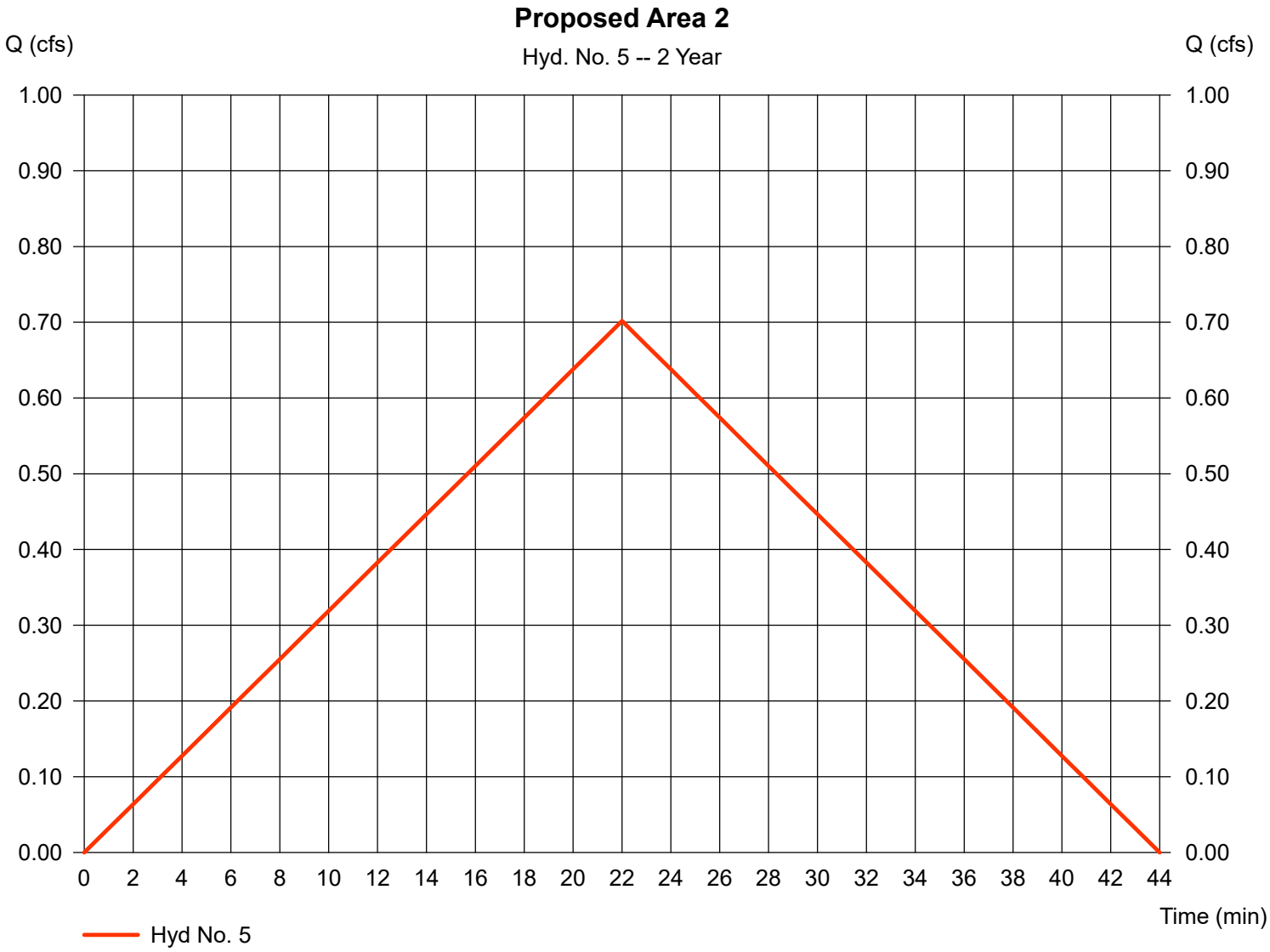


Hydrograph Report

Hyd. No. 5

Proposed Area 2

Hydrograph type	=	Rational	Peak discharge	=	0.702 cfs
Storm frequency	=	2 yrs	Time to peak	=	22 min
Time interval	=	1 min	Hyd. volume	=	926 cuft
Drainage area	=	1.540 ac	Runoff coeff.	=	0.2
Intensity	=	2.278 in/hr	Tc by TR55	=	22.00 min
IDF Curve	=	GSD-60 NOAA.IDF	Asc/Rec limb fact	=	1/1



Hydrograph Summary Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066

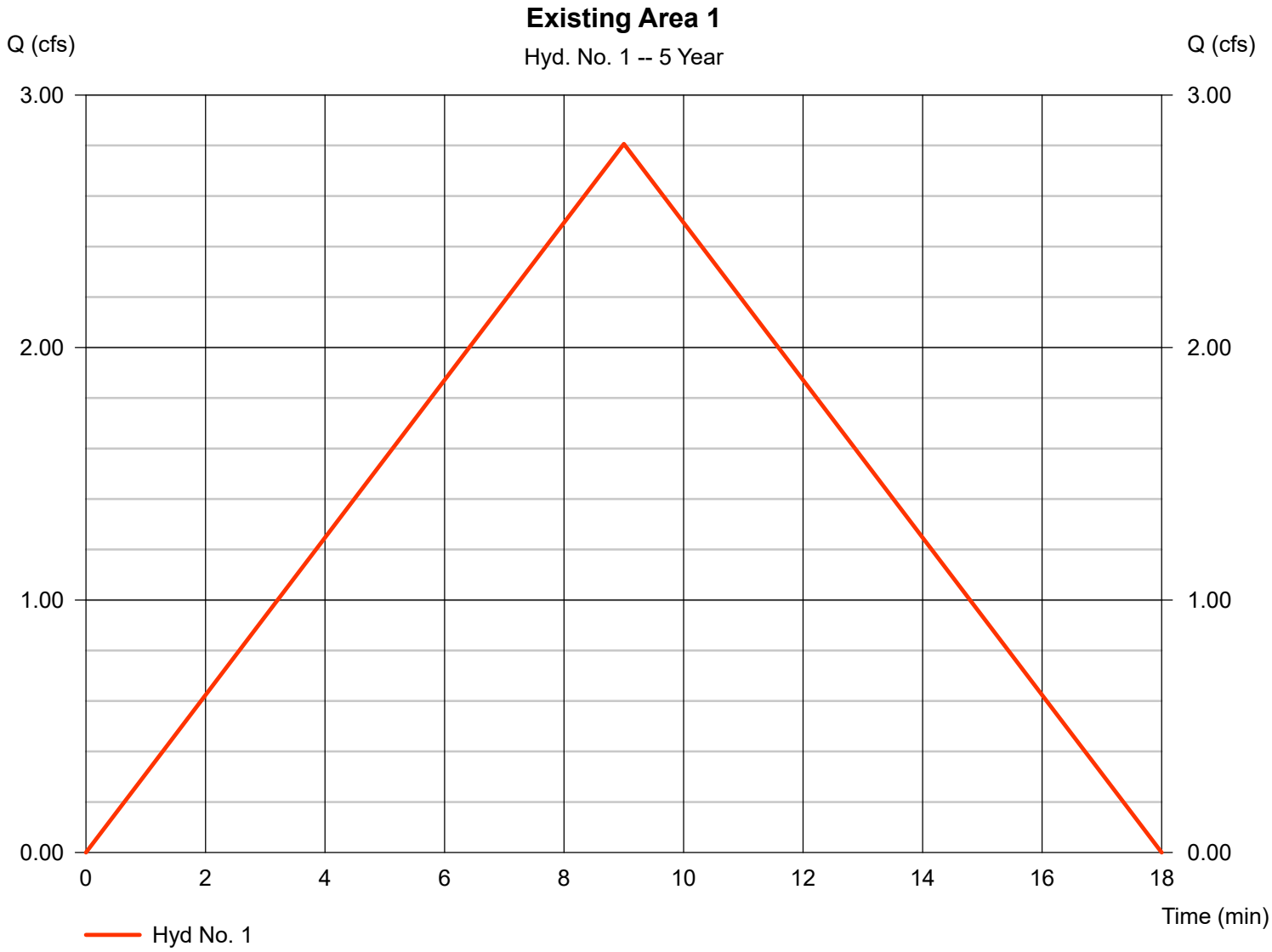
Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph description
1	Rational	2.807	1	9	1,516	------	------	------	Existing Area 1
2	Rational	3.842	1	9	2,075	------	------	------	Proposed Area 1
3	Reservoir	0.000	1	n/a	0	2	204.54	2,075	Water Quality Basin
4	Rational	2.486	1	9	1,343	------	------	------	Existing Area 2
5	Rational	0.891	1	22	1,176	------	------	------	Proposed Area 2

Hydrograph Report

Hyd. No. 1

Existing Area 1

Hydrograph type	=	Rational	Peak discharge	=	2.807 cfs
Storm frequency	=	5 yrs	Time to peak	=	9 min
Time interval	=	1 min	Hyd. volume	=	1,516 cuft
Drainage area	=	2.980 ac	Runoff coeff.	=	0.2
Intensity	=	4.709 in/hr	Tc by TR55	=	9.00 min
IDF Curve	=	GSD-60 NOAA.IDF	Asc/Rec limb fact	=	1/1

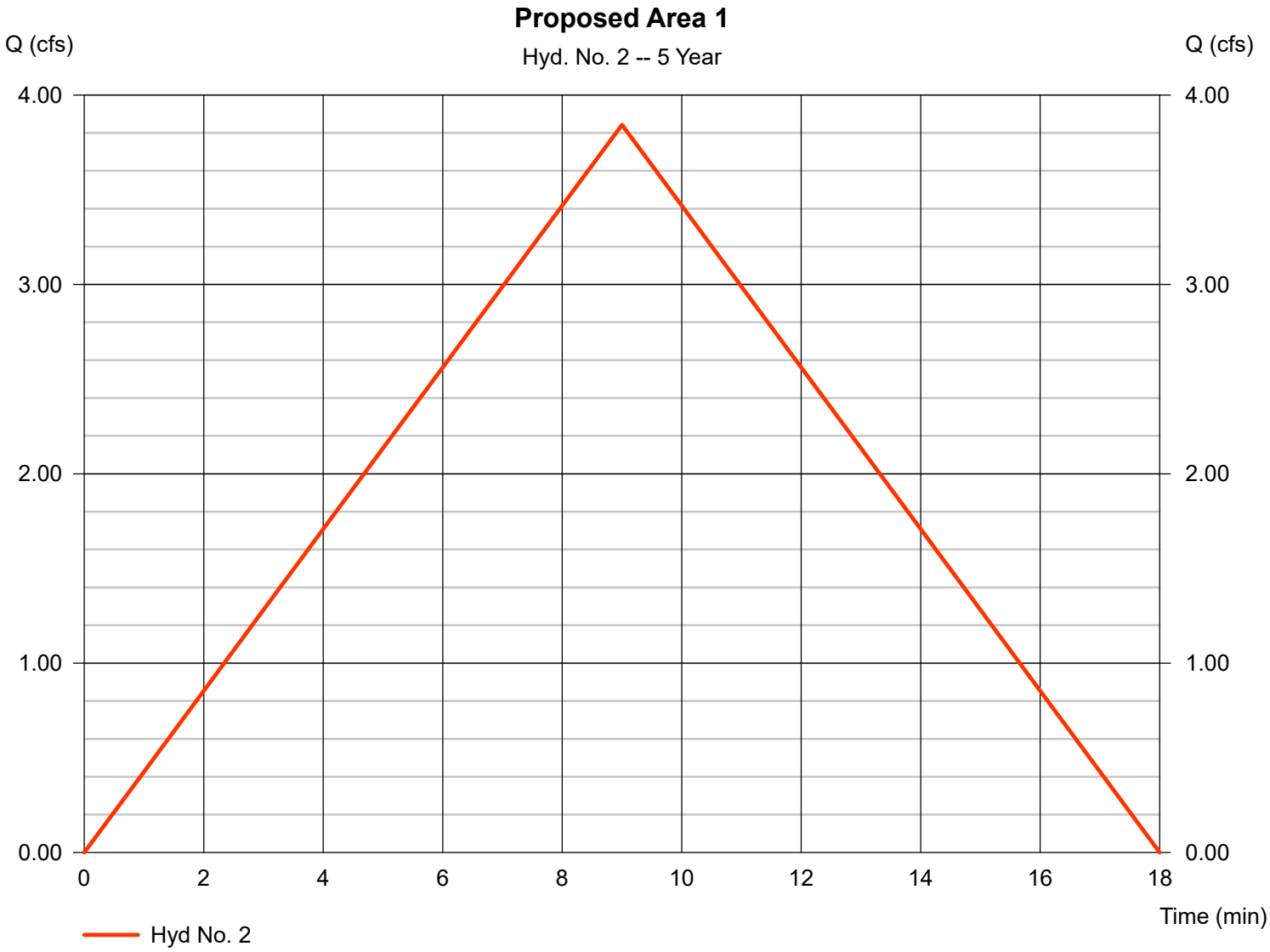


Hydrograph Report

Hyd. No. 2

Proposed Area 1

Hydrograph type	=	Rational	Peak discharge	=	3.842 cfs
Storm frequency	=	5 yrs	Time to peak	=	9 min
Time interval	=	1 min	Hyd. volume	=	2,075 cuft
Drainage area	=	4.080 ac	Runoff coeff.	=	0.2
Intensity	=	4.709 in/hr	Tc by TR55	=	9.00 min
IDF Curve	=	GSD-60 NOAA.IDF	Asc/Rec limb fact	=	1/1



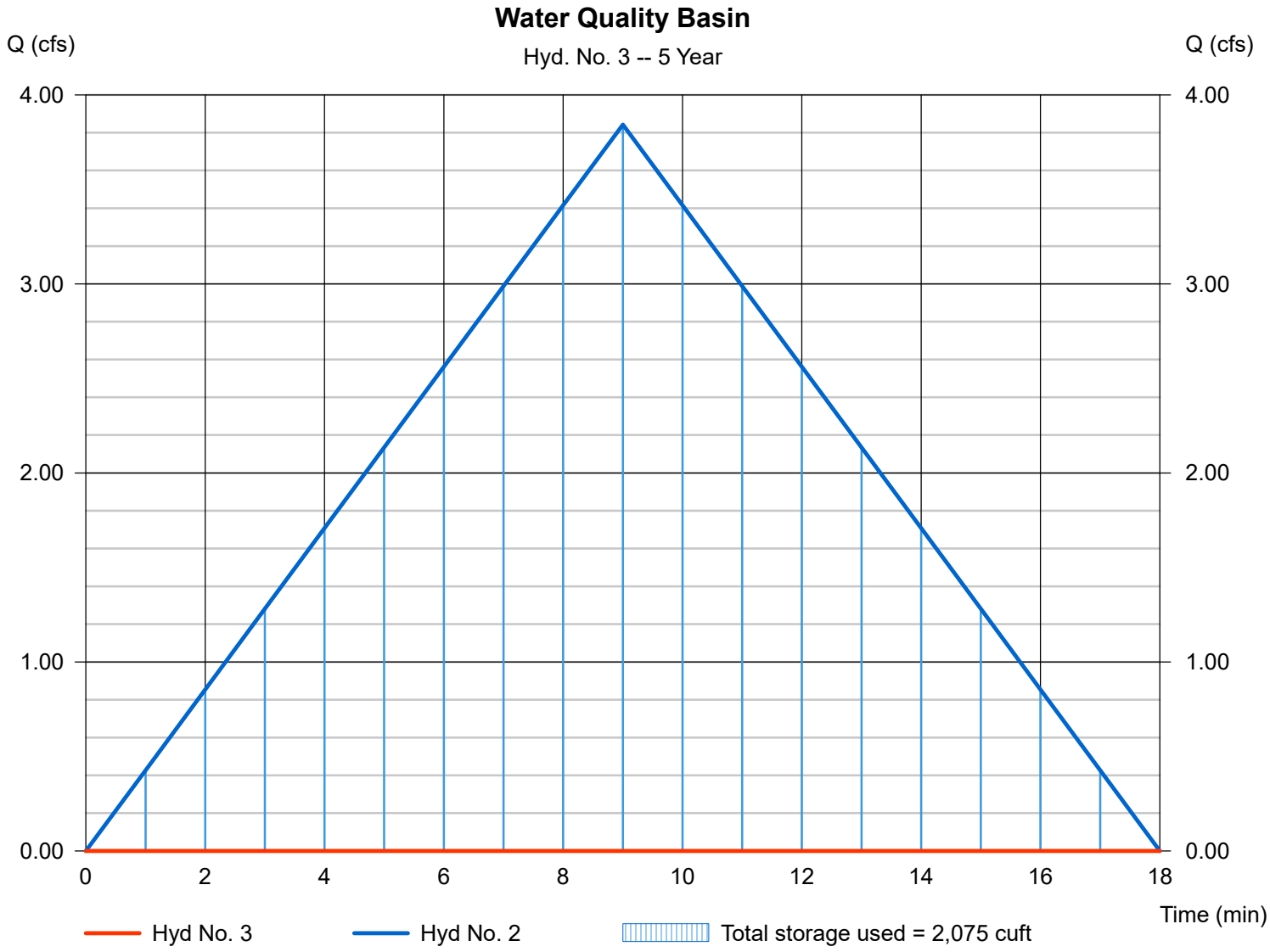
Hydrograph Report

Hyd. No. 3

Water Quality Basin

Hydrograph type	=	Reservoir	Peak discharge	=	0.000 cfs
Storm frequency	=	5 yrs	Time to peak	=	n/a
Time interval	=	1 min	Hyd. volume	=	0 cuft
Inflow hyd. No.	=	2 - Proposed Area 1	Max. Elevation	=	204.54 ft
Reservoir name	=	Pond 1	Max. Storage	=	2,075 cuft

Storage Indication method used.

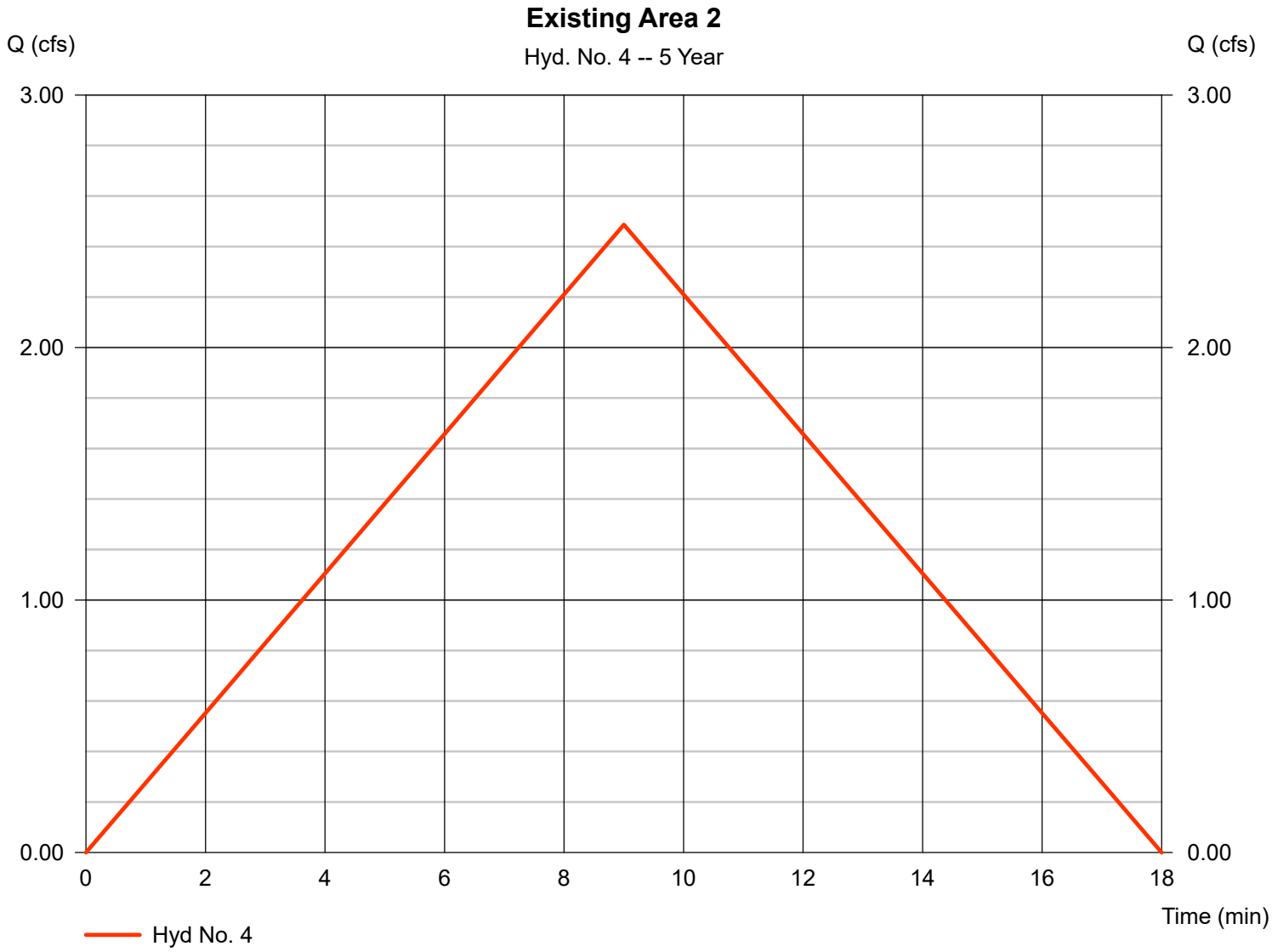


Hydrograph Report

Hyd. No. 4

Existing Area 2

Hydrograph type	=	Rational	Peak discharge	=	2.486 cfs
Storm frequency	=	5 yrs	Time to peak	=	9 min
Time interval	=	1 min	Hyd. volume	=	1,343 cuft
Drainage area	=	2.640 ac	Runoff coeff.	=	0.2
Intensity	=	4.709 in/hr	Tc by TR55	=	9.00 min
IDF Curve	=	GSD-60 NOAA.IDF	Asc/Rec limb fact	=	1/1

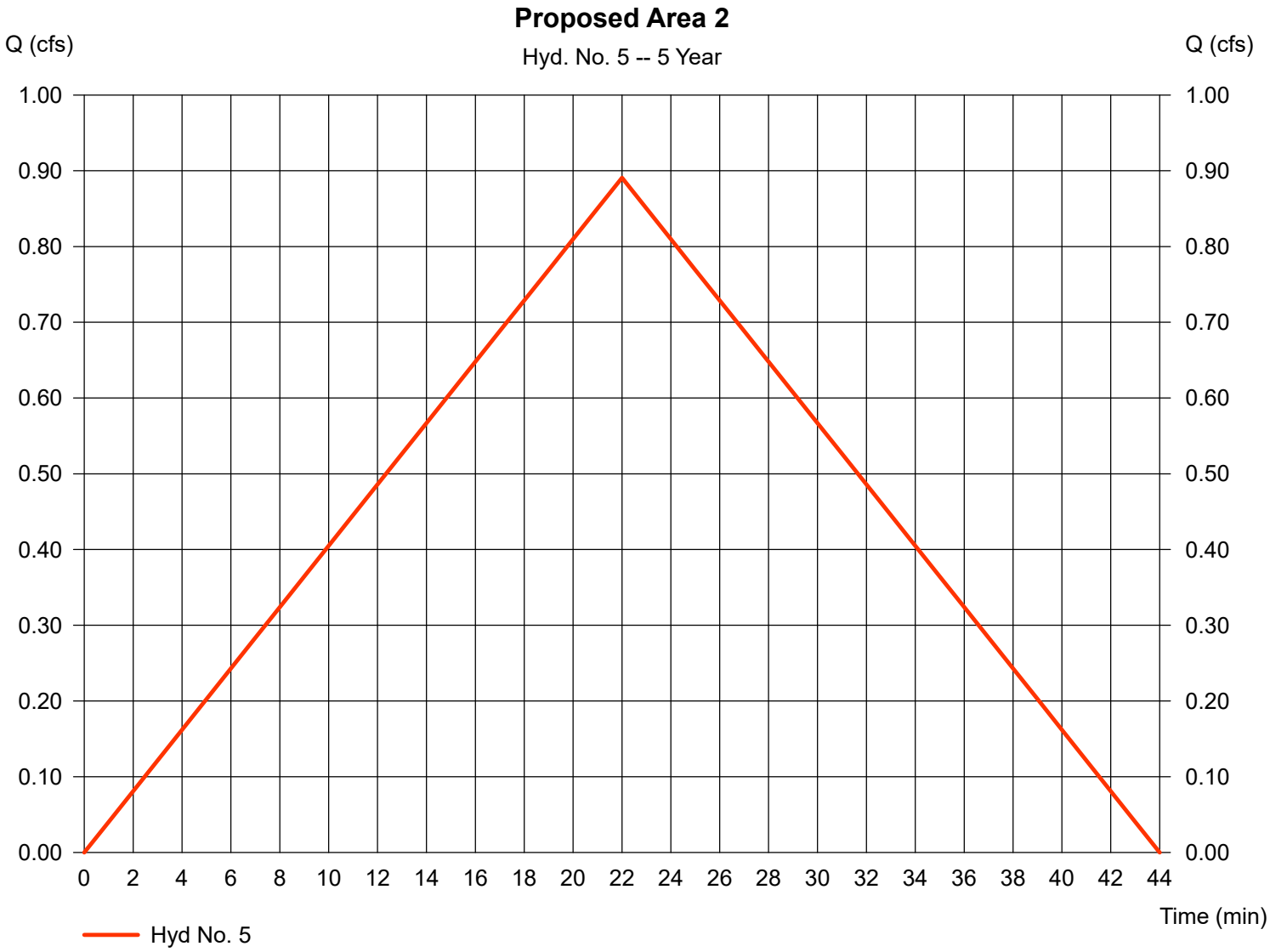


Hydrograph Report

Hyd. No. 5

Proposed Area 2

Hydrograph type	=	Rational	Peak discharge	=	0.891 cfs
Storm frequency	=	5 yrs	Time to peak	=	22 min
Time interval	=	1 min	Hyd. volume	=	1,176 cuft
Drainage area	=	1.540 ac	Runoff coeff.	=	0.2
Intensity	=	2.892 in/hr	Tc by TR55	=	22.00 min
IDF Curve	=	GSD-60 NOAA.IDF	Asc/Rec limb fact	=	1/1



Hydrograph Summary Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066

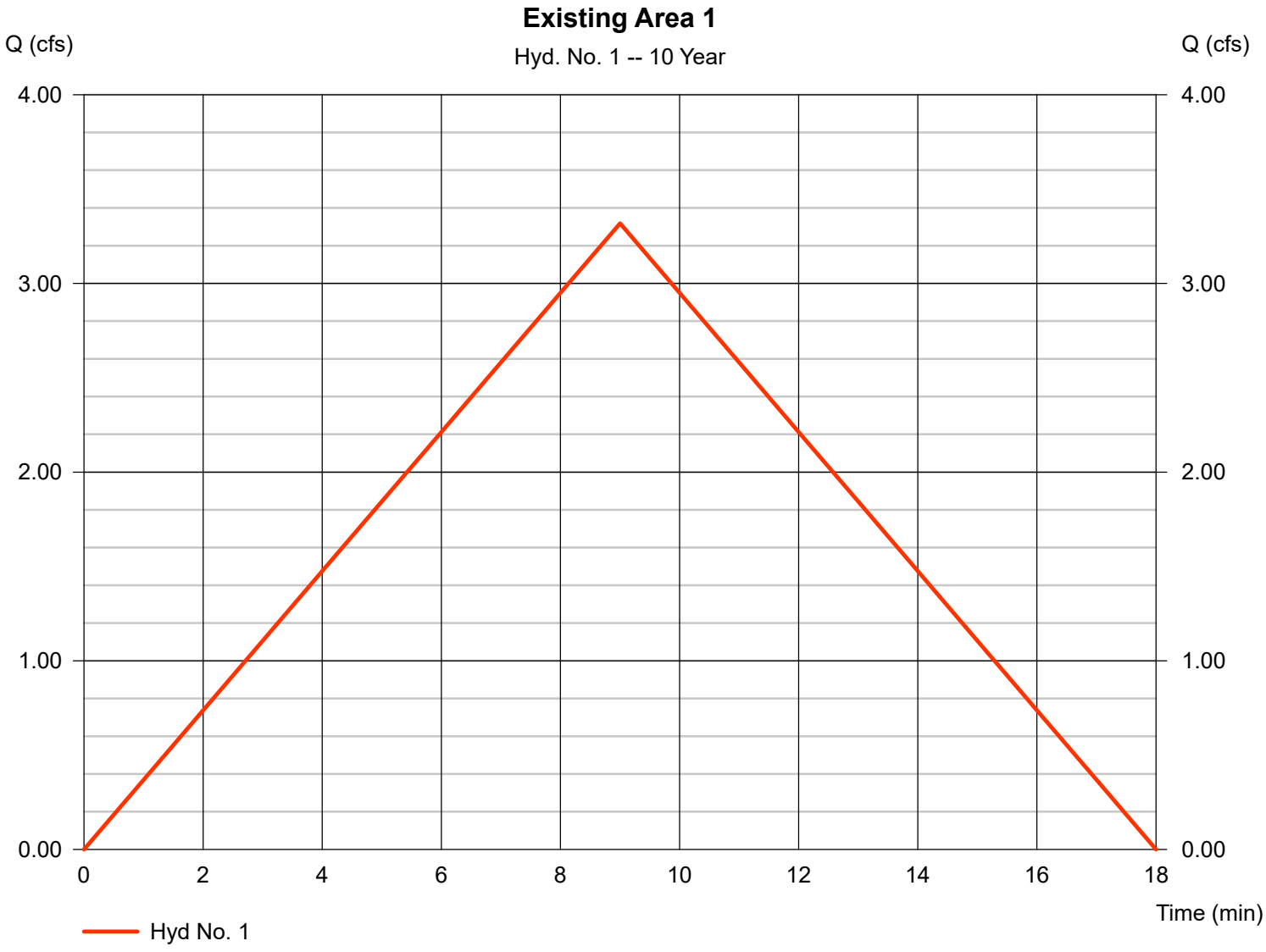
Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph description
1	Rational	3.318	1	9	1,792	------	------	------	Existing Area 1
2	Rational	4.543	1	9	2,453	------	------	------	Proposed Area 1
3	Reservoir	0.000	1	n/a	0	2	204.63	2,453	Water Quality Basin
4	Rational	2.940	1	9	1,587	------	------	------	Existing Area 2
5	Rational	1.052	1	22	1,388	------	------	------	Proposed Area 2

Hydrograph Report

Hyd. No. 1

Existing Area 1

Hydrograph type	=	Rational	Peak discharge	=	3.318 cfs
Storm frequency	=	10 yrs	Time to peak	=	9 min
Time interval	=	1 min	Hyd. volume	=	1,792 cuft
Drainage area	=	2.980 ac	Runoff coeff.	=	0.2
Intensity	=	5.567 in/hr	Tc by TR55	=	9.00 min
IDF Curve	=	GSD-60 NOAA.IDF	Asc/Rec limb fact	=	1/1

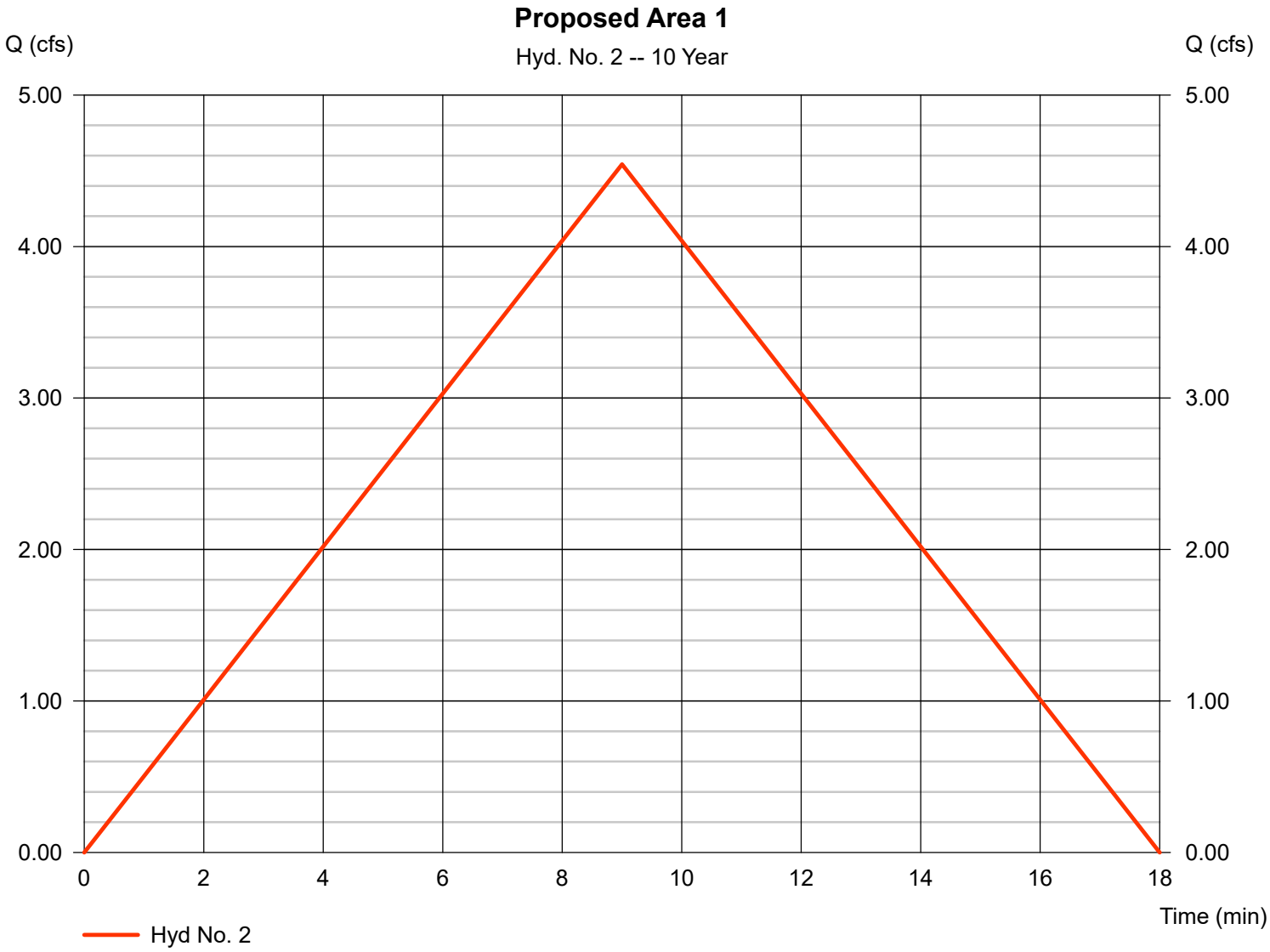


Hydrograph Report

Hyd. No. 2

Proposed Area 1

Hydrograph type	=	Rational	Peak discharge	=	4.543 cfs
Storm frequency	=	10 yrs	Time to peak	=	9 min
Time interval	=	1 min	Hyd. volume	=	2,453 cuft
Drainage area	=	4.080 ac	Runoff coeff.	=	0.2
Intensity	=	5.567 in/hr	Tc by TR55	=	9.00 min
IDF Curve	=	GSD-60 NOAA.IDF	Asc/Rec limb fact	=	1/1



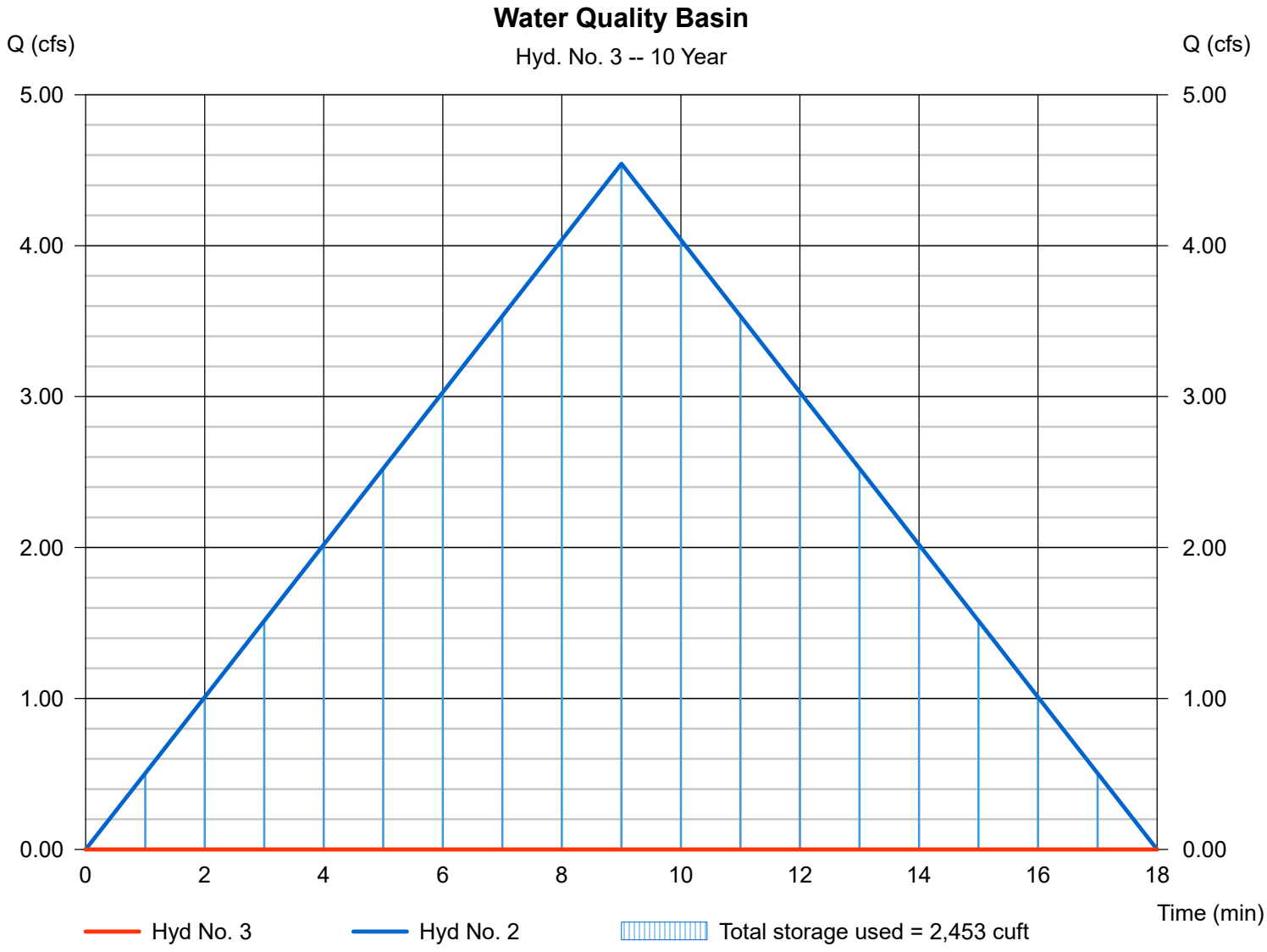
Hydrograph Report

Hyd. No. 3

Water Quality Basin

Hydrograph type	=	Reservoir	Peak discharge	=	0.000 cfs
Storm frequency	=	10 yrs	Time to peak	=	n/a
Time interval	=	1 min	Hyd. volume	=	0 cuft
Inflow hyd. No.	=	2 - Proposed Area 1	Max. Elevation	=	204.63 ft
Reservoir name	=	Pond 1	Max. Storage	=	2,453 cuft

Storage Indication method used.

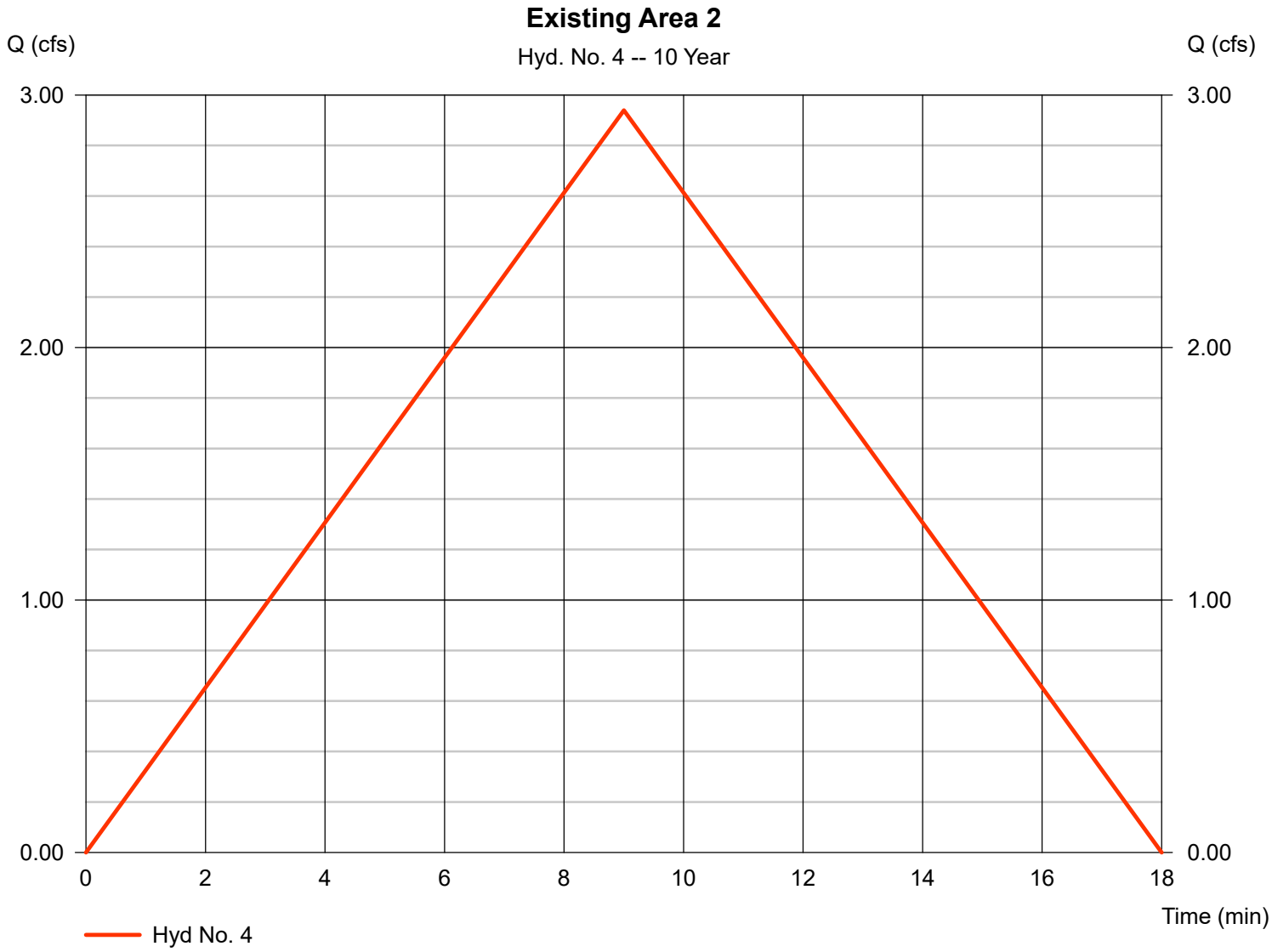


Hydrograph Report

Hyd. No. 4

Existing Area 2

Hydrograph type	=	Rational	Peak discharge	=	2.940 cfs
Storm frequency	=	10 yrs	Time to peak	=	9 min
Time interval	=	1 min	Hyd. volume	=	1,587 cuft
Drainage area	=	2.640 ac	Runoff coeff.	=	0.2
Intensity	=	5.567 in/hr	Tc by TR55	=	9.00 min
IDF Curve	=	GSD-60 NOAA.IDF	Asc/Rec limb fact	=	1/1

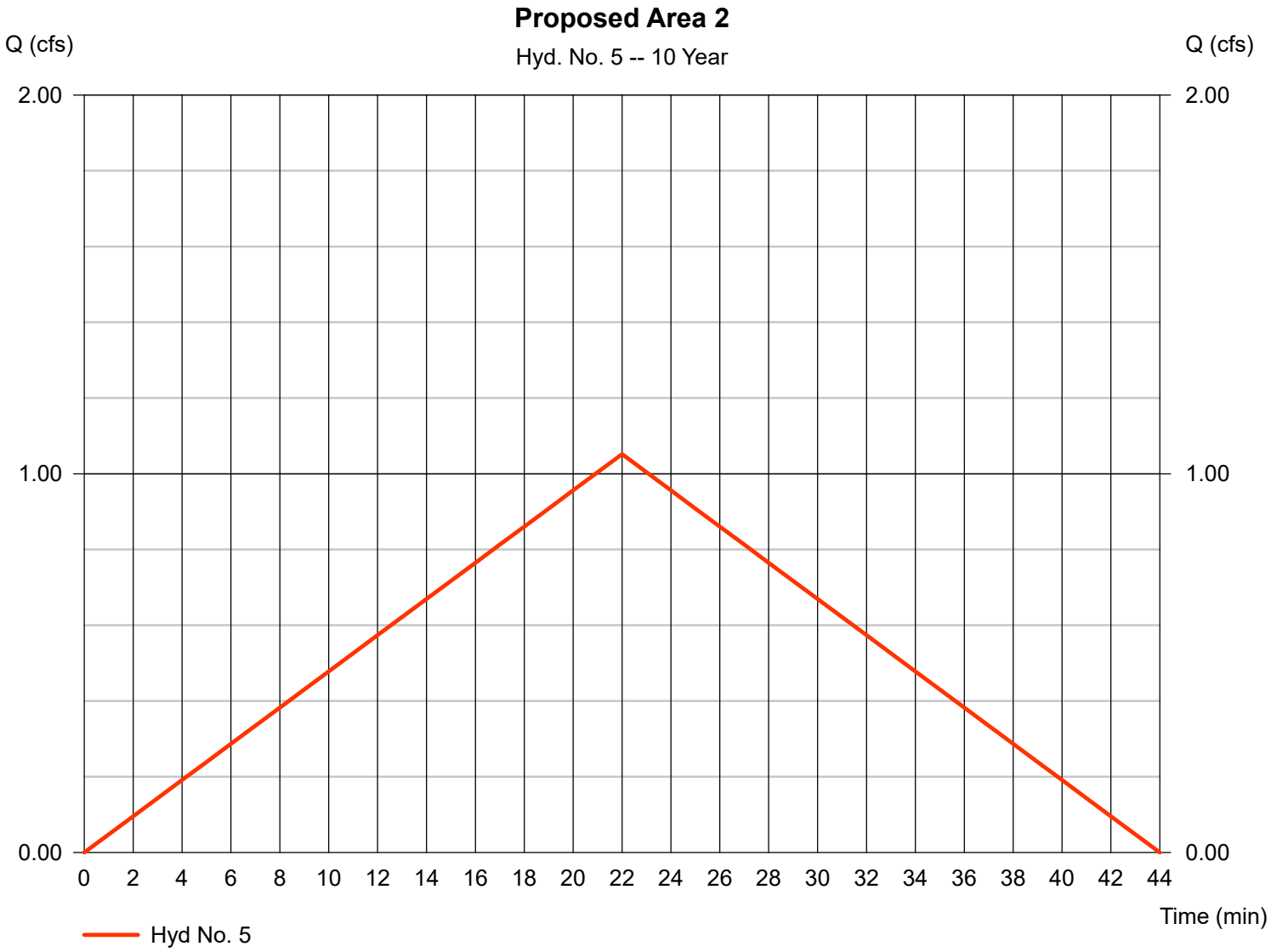


Hydrograph Report

Hyd. No. 5

Proposed Area 2

Hydrograph type	=	Rational	Peak discharge	=	1.052 cfs
Storm frequency	=	10 yrs	Time to peak	=	22 min
Time interval	=	1 min	Hyd. volume	=	1,388 cuft
Drainage area	=	1.540 ac	Runoff coeff.	=	0.2
Intensity	=	3.415 in/hr	Tc by TR55	=	22.00 min
IDF Curve	=	GSD-60 NOAA.IDF	Asc/Rec limb fact	=	1/1



Hydrograph Summary Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066

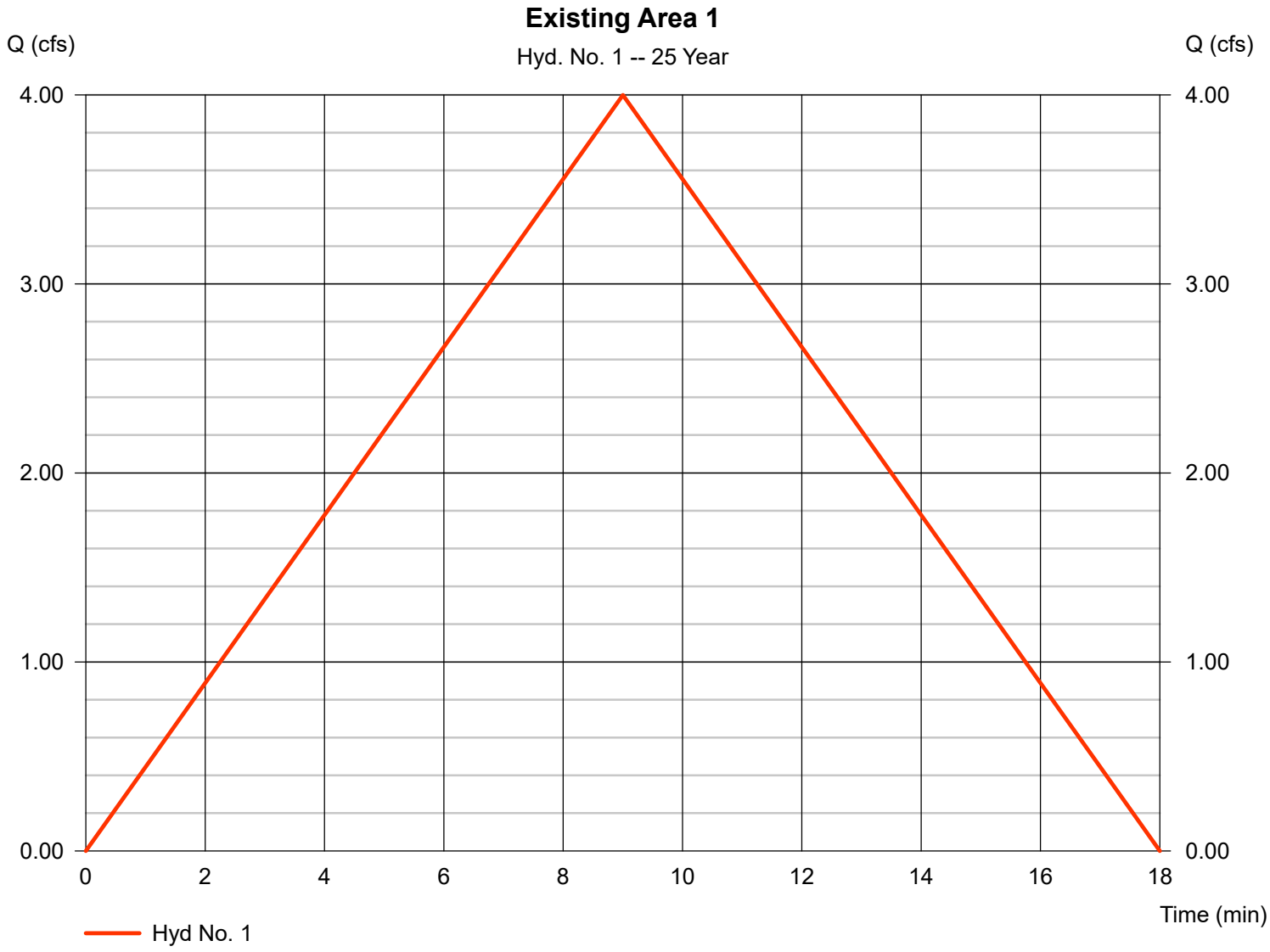
Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph description
1	Rational	3.999	1	9	2,159	------	------	------	Existing Area 1
2	Rational	5.475	1	9	2,956	------	------	------	Proposed Area 1
3	Reservoir	0.000	1	n/a	0	2	204.74	2,956	Water Quality Basin
4	Rational	3.543	1	9	1,913	------	------	------	Existing Area 2
5	Rational	1.268	1	22	1,674	------	------	------	Proposed Area 2

Hydrograph Report

Hyd. No. 1

Existing Area 1

Hydrograph type	=	Rational	Peak discharge	=	3.999 cfs
Storm frequency	=	25 yrs	Time to peak	=	9 min
Time interval	=	1 min	Hyd. volume	=	2,159 cuft
Drainage area	=	2.980 ac	Runoff coeff.	=	0.2
Intensity	=	6.710 in/hr	Tc by TR55	=	9.00 min
IDF Curve	=	GSD-60 NOAA.IDF	Asc/Rec limb fact	=	1/1

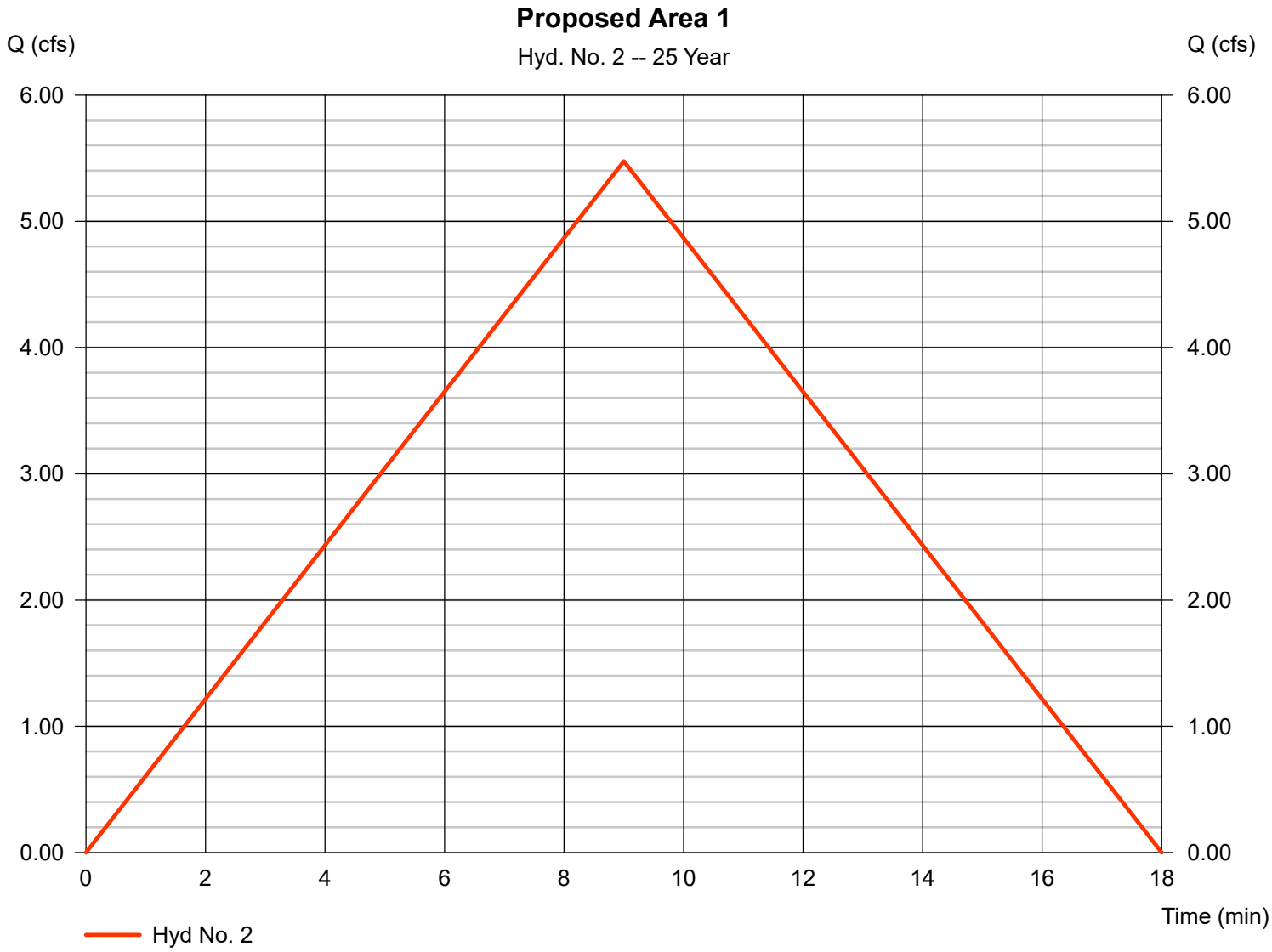


Hydrograph Report

Hyd. No. 2

Proposed Area 1

Hydrograph type	=	Rational	Peak discharge	=	5.475 cfs
Storm frequency	=	25 yrs	Time to peak	=	9 min
Time interval	=	1 min	Hyd. volume	=	2,956 cuft
Drainage area	=	4.080 ac	Runoff coeff.	=	0.2
Intensity	=	6.710 in/hr	Tc by TR55	=	9.00 min
IDF Curve	=	GSD-60 NOAA.IDF	Asc/Rec limb fact	=	1/1



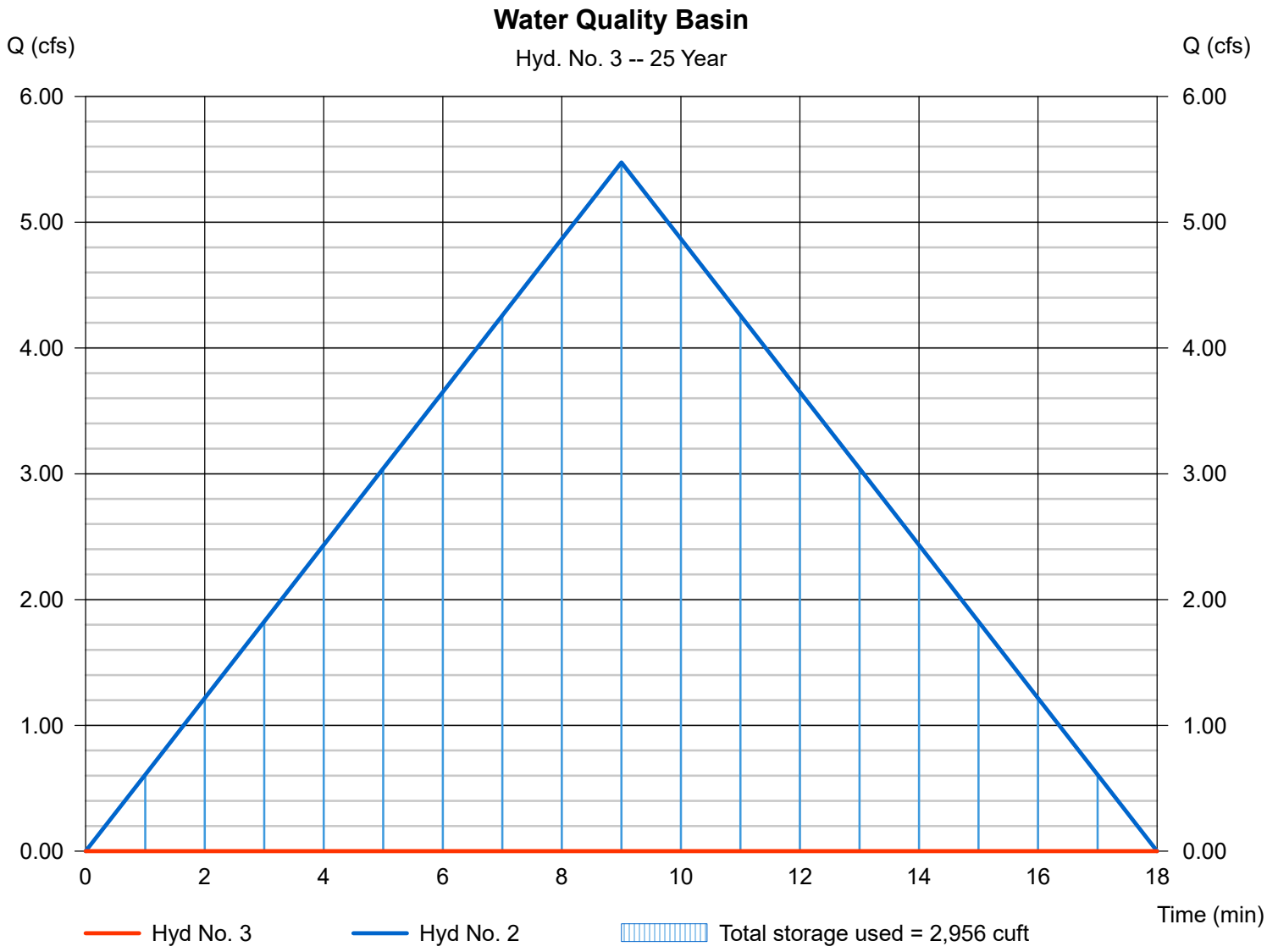
Hydrograph Report

Hyd. No. 3

Water Quality Basin

Hydrograph type	=	Reservoir	Peak discharge	=	0.000 cfs
Storm frequency	=	25 yrs	Time to peak	=	n/a
Time interval	=	1 min	Hyd. volume	=	0 cuft
Inflow hyd. No.	=	2 - Proposed Area 1	Max. Elevation	=	204.74 ft
Reservoir name	=	Pond 1	Max. Storage	=	2,956 cuft

Storage Indication method used.

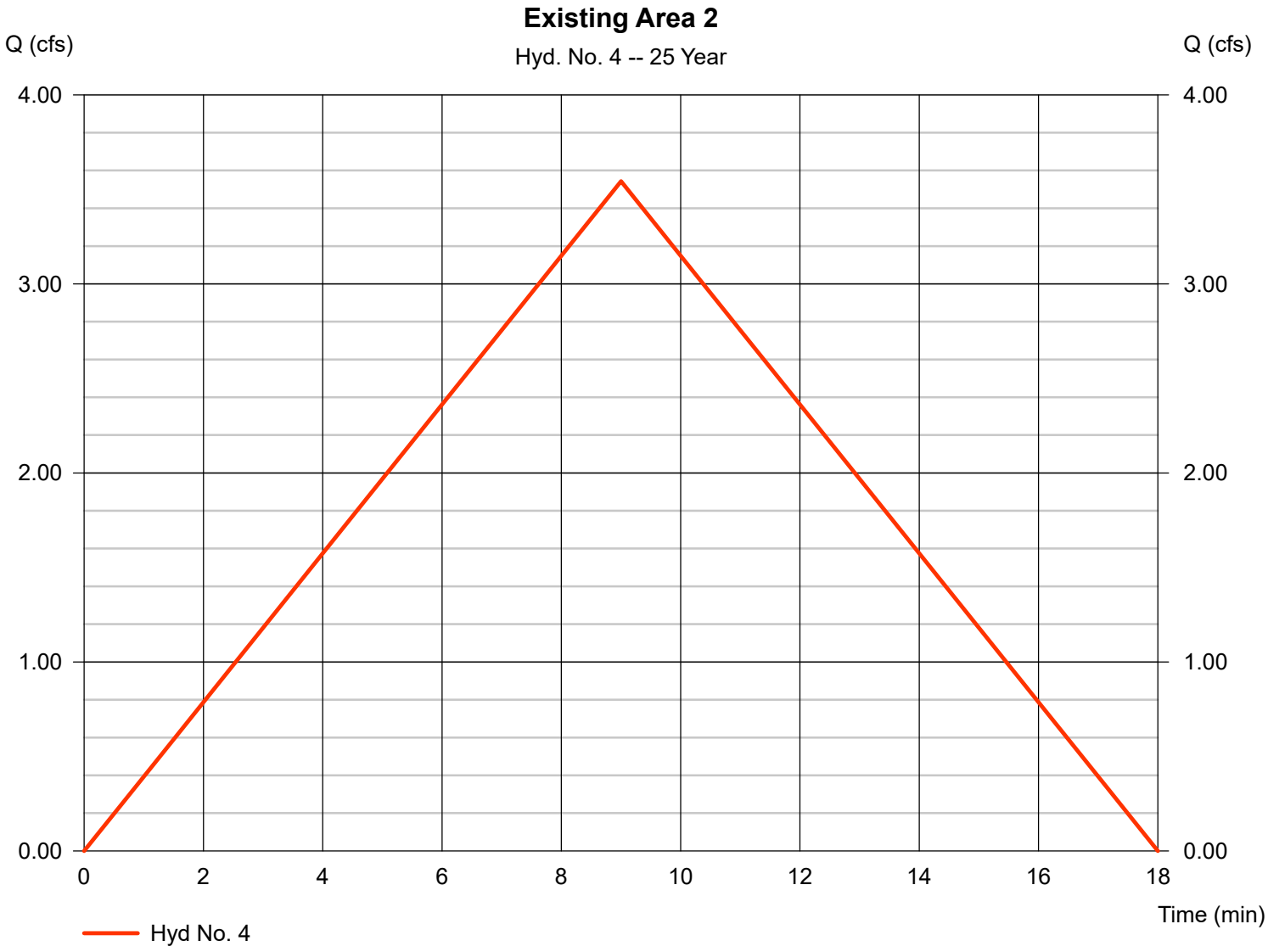


Hydrograph Report

Hyd. No. 4

Existing Area 2

Hydrograph type	=	Rational	Peak discharge	=	3.543 cfs
Storm frequency	=	25 yrs	Time to peak	=	9 min
Time interval	=	1 min	Hyd. volume	=	1,913 cuft
Drainage area	=	2.640 ac	Runoff coeff.	=	0.2
Intensity	=	6.710 in/hr	Tc by TR55	=	9.00 min
IDF Curve	=	GSD-60 NOAA.IDF	Asc/Rec limb fact	=	1/1

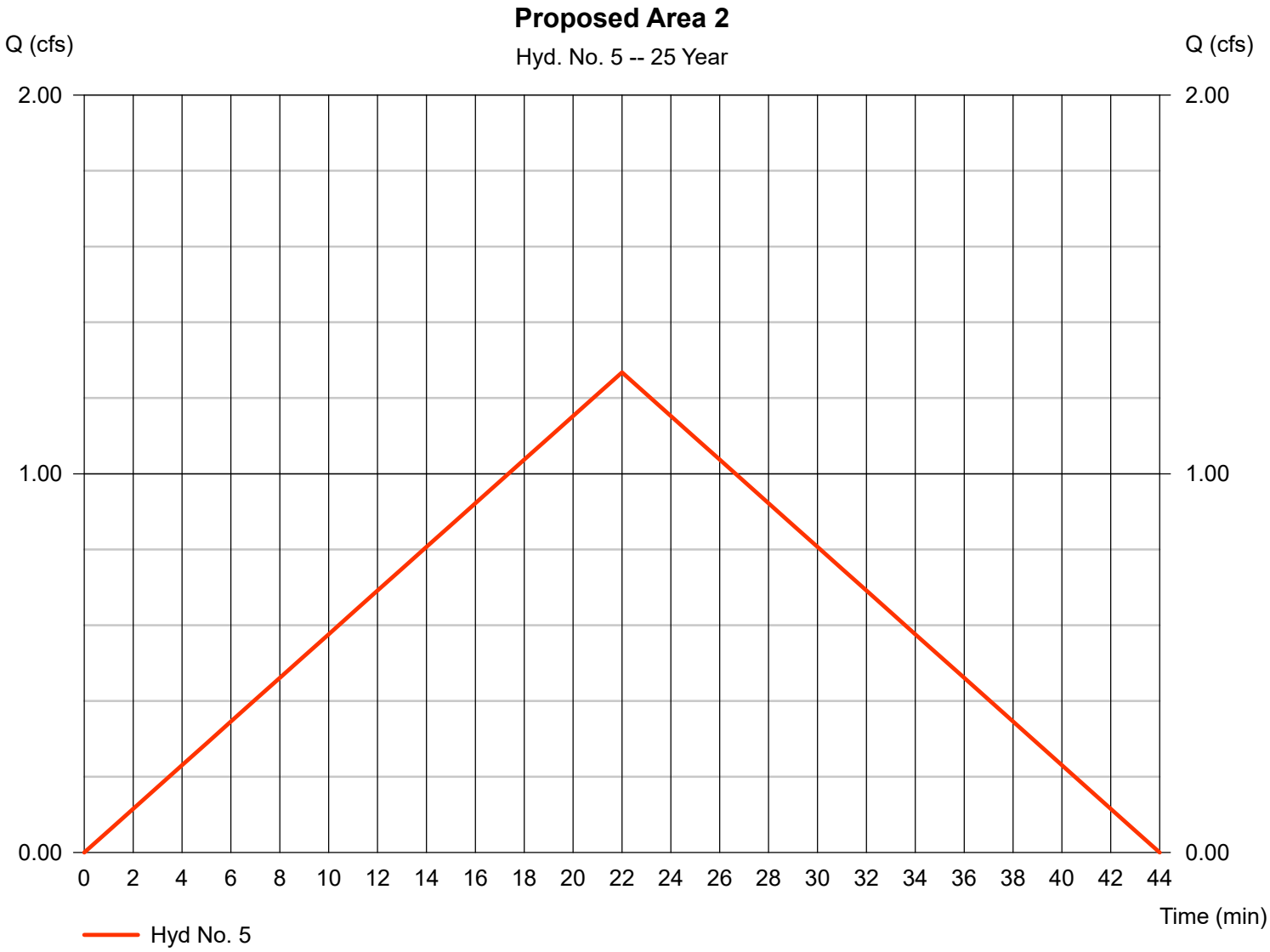


Hydrograph Report

Hyd. No. 5

Proposed Area 2

Hydrograph type	=	Rational	Peak discharge	=	1.268 cfs
Storm frequency	=	25 yrs	Time to peak	=	22 min
Time interval	=	1 min	Hyd. volume	=	1,674 cuft
Drainage area	=	1.540 ac	Runoff coeff.	=	0.2
Intensity	=	4.116 in/hr	Tc by TR55	=	22.00 min
IDF Curve	=	GSD-60 NOAA.IDF	Asc/Rec limb fact	=	1/1



Hydrograph Summary Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066

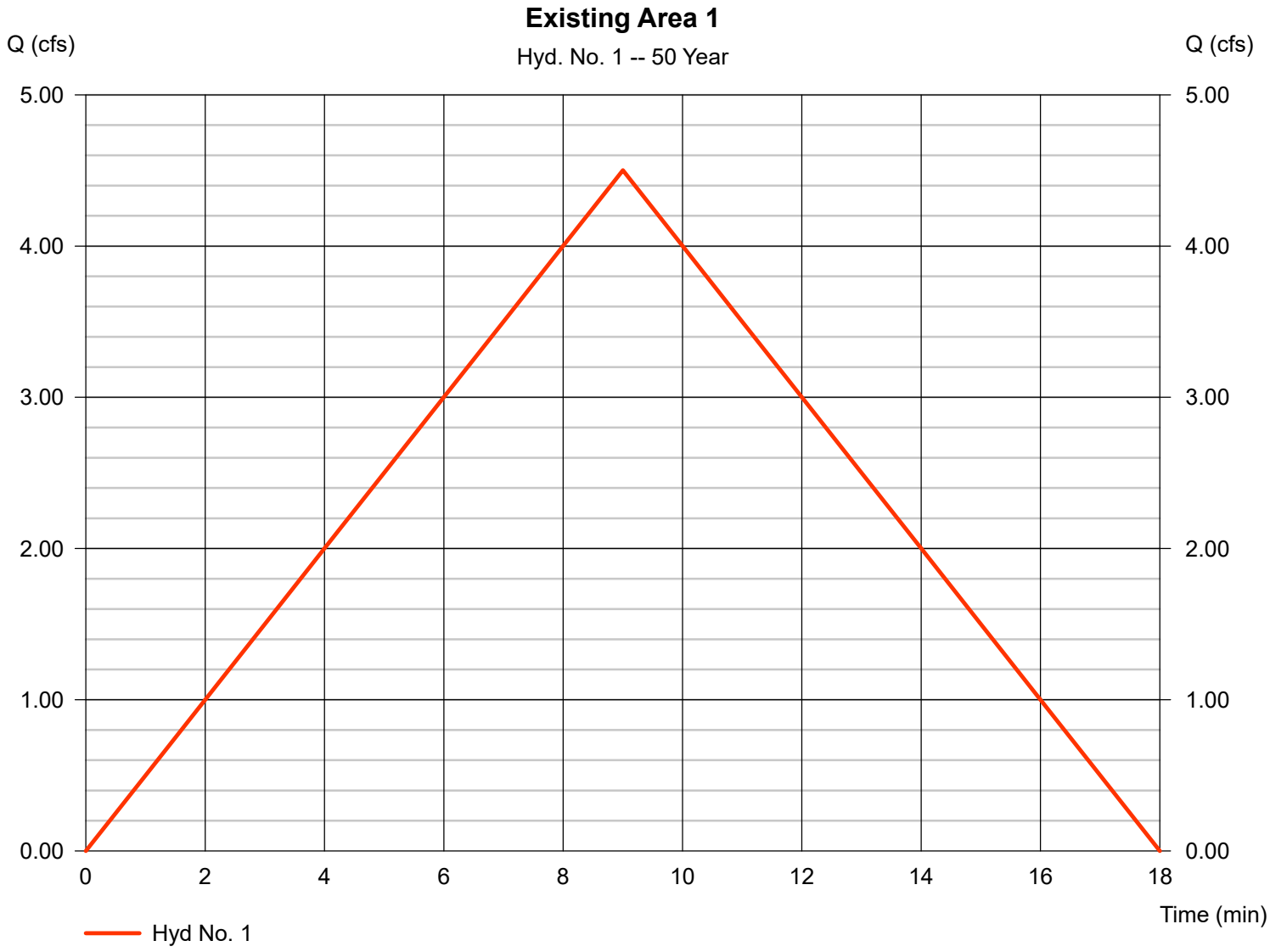
Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph description
1	Rational	4.501	1	9	2,431	------	------	------	Existing Area 1
2	Rational	6.162	1	9	3,328	------	------	------	Proposed Area 1
3	Reservoir	0.000	1	n/a	0	2	204.83	3,328	Water Quality Basin
4	Rational	3.987	1	9	2,153	------	------	------	Existing Area 2
5	Rational	1.427	1	22	1,884	------	------	------	Proposed Area 2

Hydrograph Report

Hyd. No. 1

Existing Area 1

Hydrograph type	=	Rational	Peak discharge	=	4.501 cfs
Storm frequency	=	50 yrs	Time to peak	=	9 min
Time interval	=	1 min	Hyd. volume	=	2,431 cuft
Drainage area	=	2.980 ac	Runoff coeff.	=	0.2
Intensity	=	7.552 in/hr	Tc by TR55	=	9.00 min
IDF Curve	=	GSD-60 NOAA.IDF	Asc/Rec limb fact	=	1/1

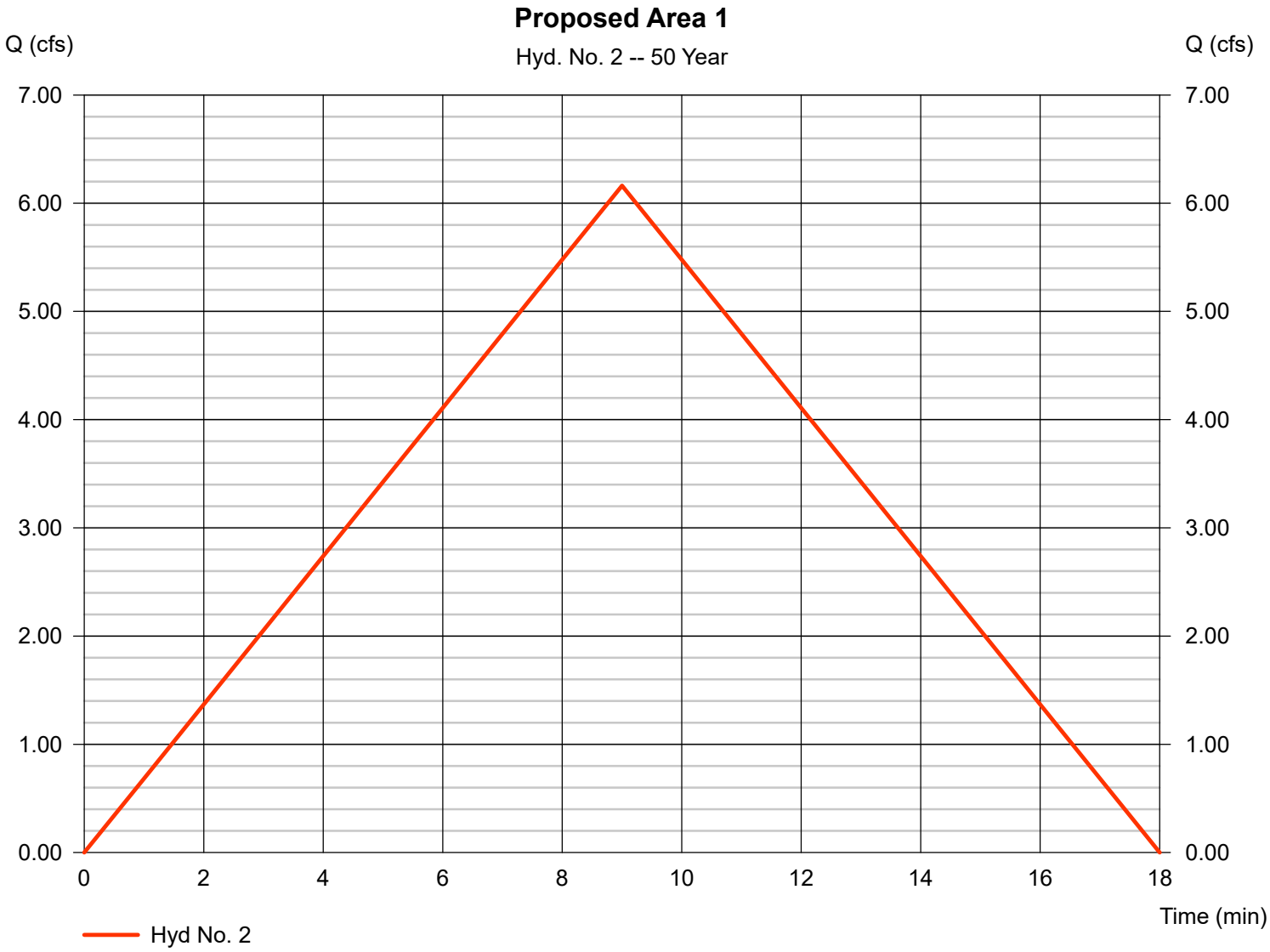


Hydrograph Report

Hyd. No. 2

Proposed Area 1

Hydrograph type	=	Rational	Peak discharge	=	6.162 cfs
Storm frequency	=	50 yrs	Time to peak	=	9 min
Time interval	=	1 min	Hyd. volume	=	3,328 cuft
Drainage area	=	4.080 ac	Runoff coeff.	=	0.2
Intensity	=	7.552 in/hr	Tc by TR55	=	9.00 min
IDF Curve	=	GSD-60 NOAA.IDF	Asc/Rec limb fact	=	1/1



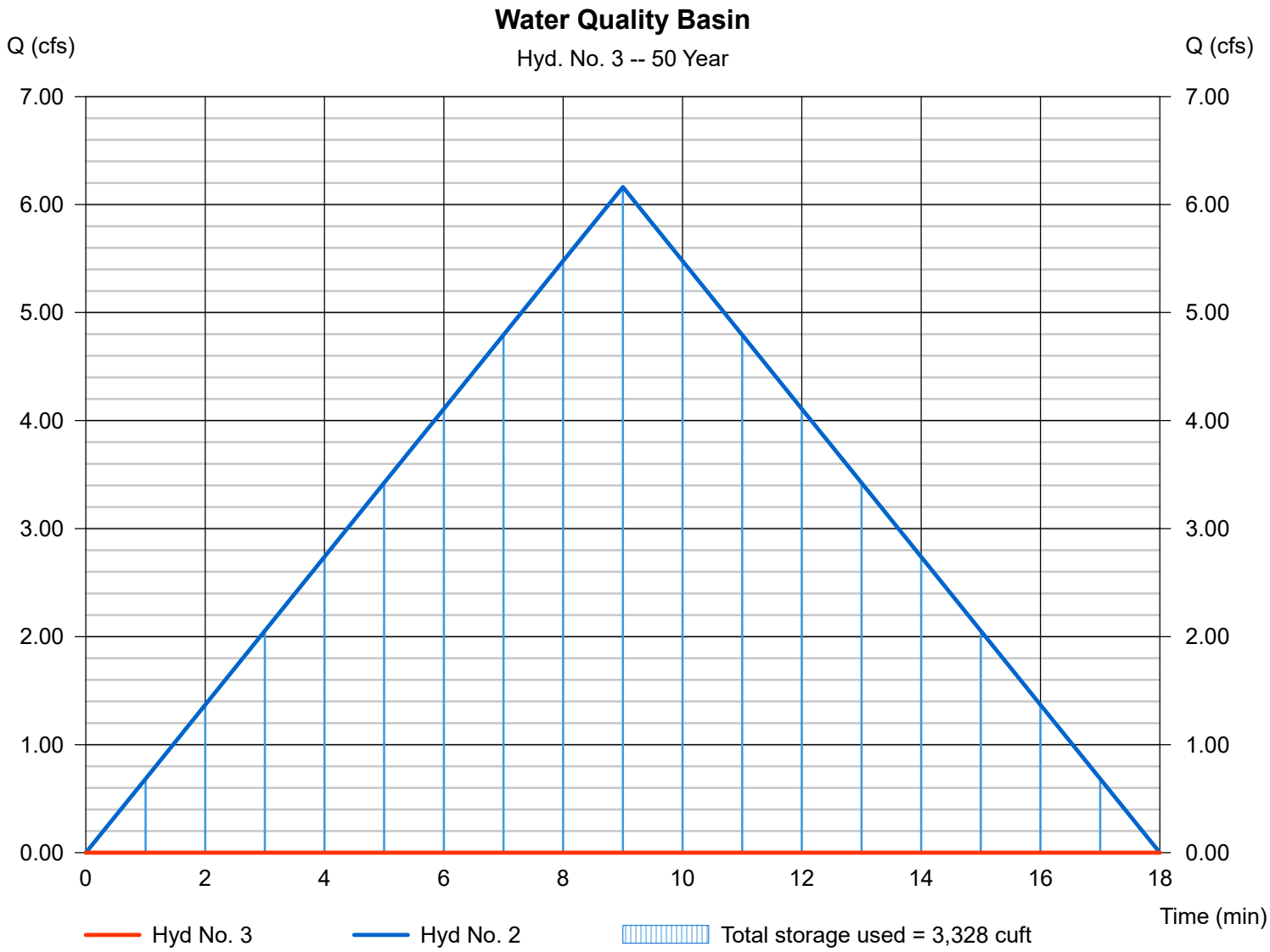
Hydrograph Report

Hyd. No. 3

Water Quality Basin

Hydrograph type	=	Reservoir	Peak discharge	=	0.000 cfs
Storm frequency	=	50 yrs	Time to peak	=	n/a
Time interval	=	1 min	Hyd. volume	=	0 cuft
Inflow hyd. No.	=	2 - Proposed Area 1	Max. Elevation	=	204.83 ft
Reservoir name	=	Pond 1	Max. Storage	=	3,328 cuft

Storage Indication method used.

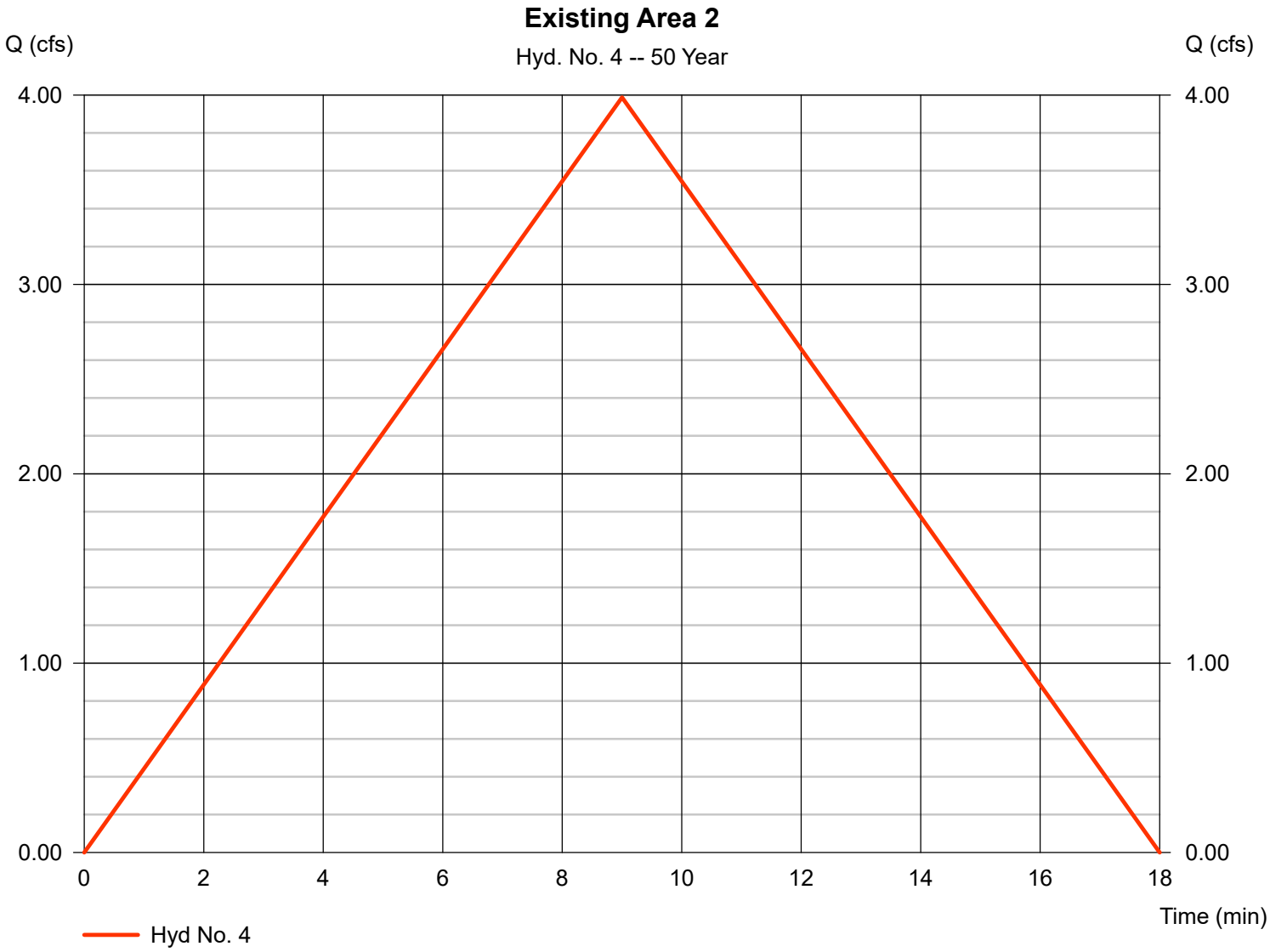


Hydrograph Report

Hyd. No. 4

Existing Area 2

Hydrograph type	=	Rational	Peak discharge	=	3.987 cfs
Storm frequency	=	50 yrs	Time to peak	=	9 min
Time interval	=	1 min	Hyd. volume	=	2,153 cuft
Drainage area	=	2.640 ac	Runoff coeff.	=	0.2
Intensity	=	7.552 in/hr	Tc by TR55	=	9.00 min
IDF Curve	=	GSD-60 NOAA.IDF	Asc/Rec limb fact	=	1/1

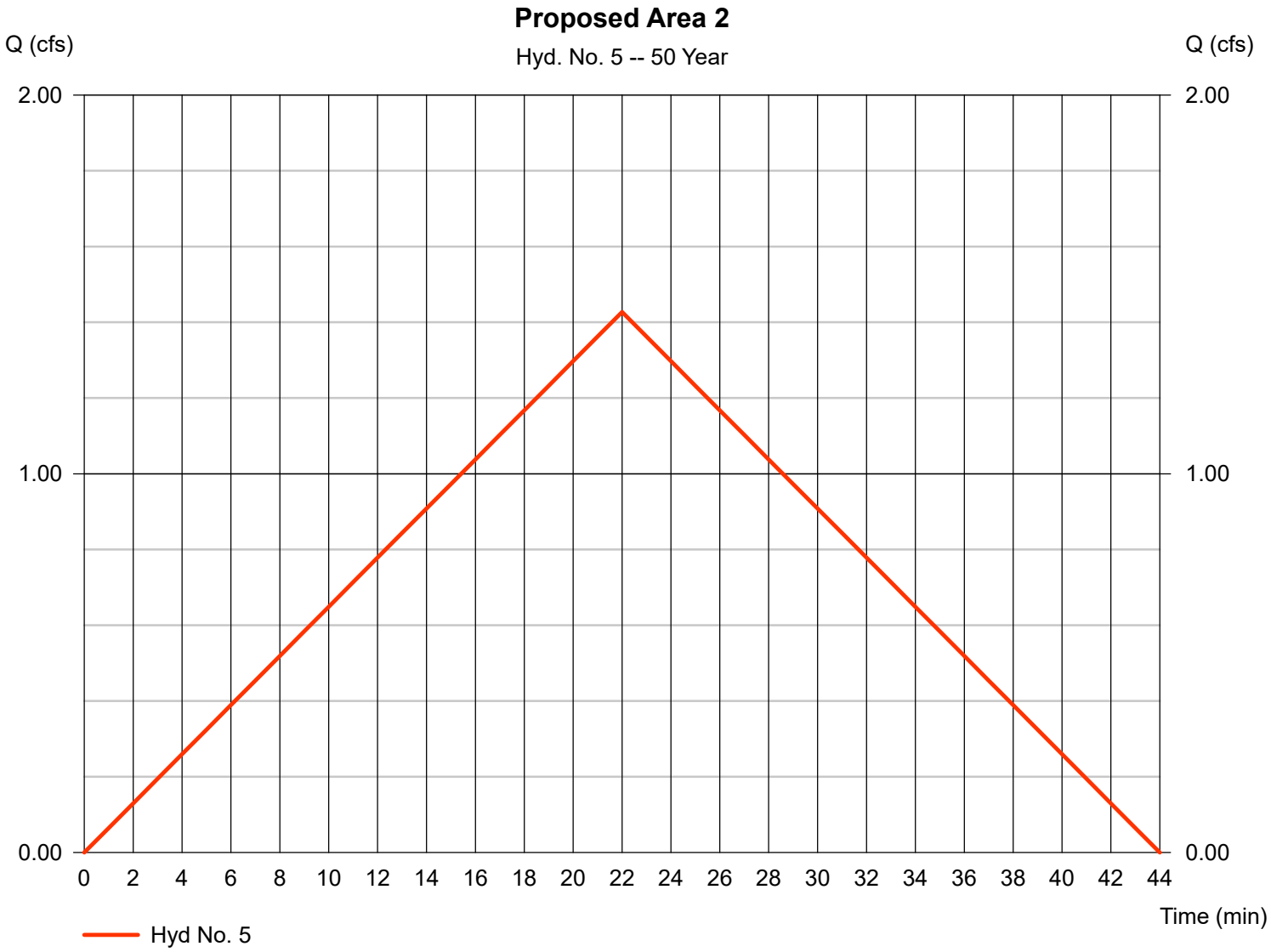


Hydrograph Report

Hyd. No. 5

Proposed Area 2

Hydrograph type	=	Rational	Peak discharge	=	1.427 cfs
Storm frequency	=	50 yrs	Time to peak	=	22 min
Time interval	=	1 min	Hyd. volume	=	1,884 cuft
Drainage area	=	1.540 ac	Runoff coeff.	=	0.2
Intensity	=	4.633 in/hr	Tc by TR55	=	22.00 min
IDF Curve	=	GSD-60 NOAA.IDF	Asc/Rec limb fact	=	1/1



Hydrograph Summary Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066

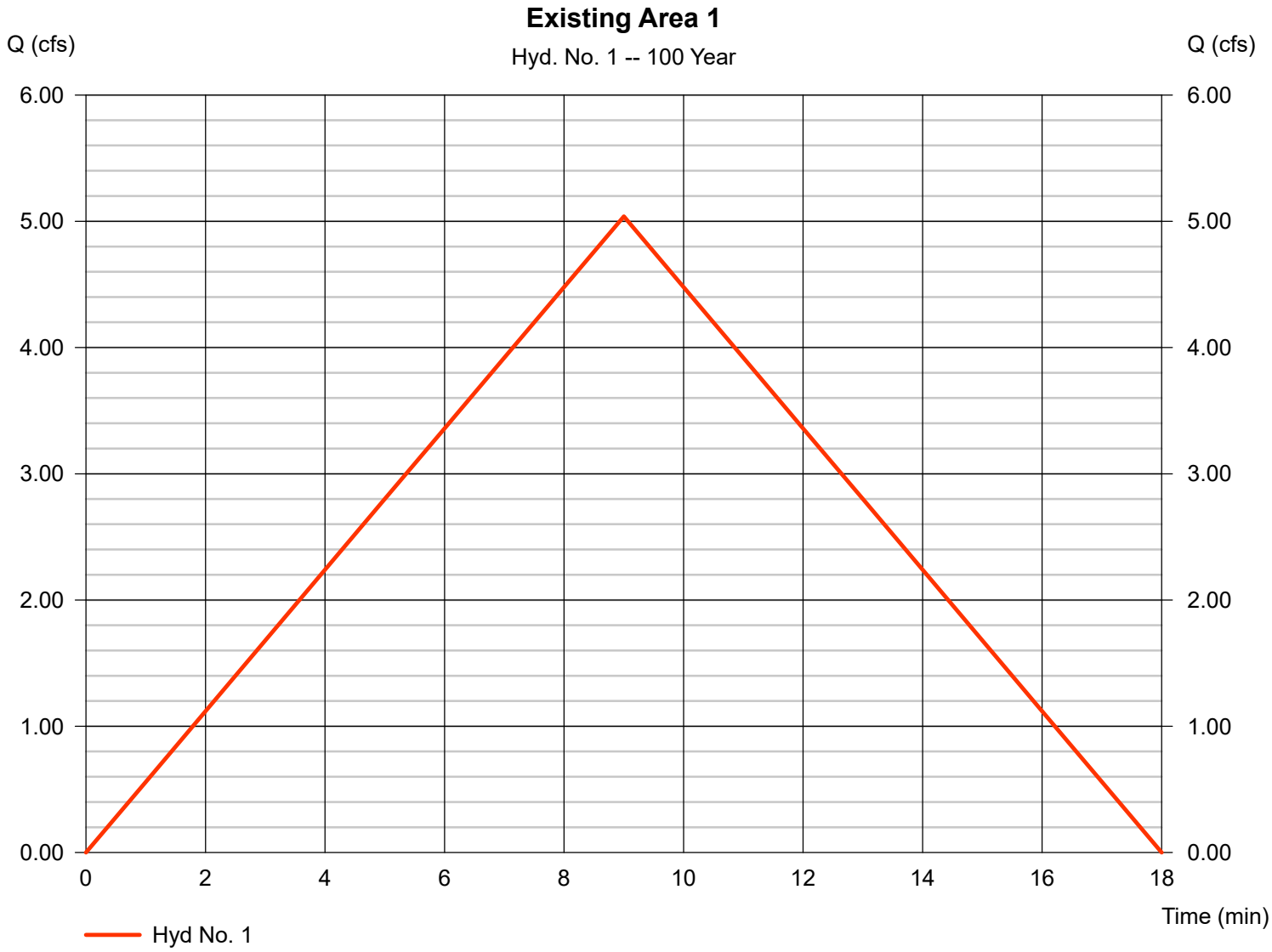
Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph description
1	Rational	5.038	1	9	2,721	------	------	------	Existing Area 1
2	Rational	6.898	1	9	3,725	------	------	------	Proposed Area 1
3	Reservoir	0.000	1	n/a	0	2	204.92	3,725	Water Quality Basin
4	Rational	4.464	1	9	2,410	------	------	------	Existing Area 2
5	Rational	1.597	1	22	2,109	------	------	------	Proposed Area 2

Hydrograph Report

Hyd. No. 1

Existing Area 1

Hydrograph type	=	Rational	Peak discharge	=	5.038 cfs
Storm frequency	=	100 yrs	Time to peak	=	9 min
Time interval	=	1 min	Hyd. volume	=	2,721 cuft
Drainage area	=	2.980 ac	Runoff coeff.	=	0.2
Intensity	=	8.454 in/hr	Tc by TR55	=	9.00 min
IDF Curve	=	GSD-60 NOAA.IDF	Asc/Rec limb fact	=	1/1

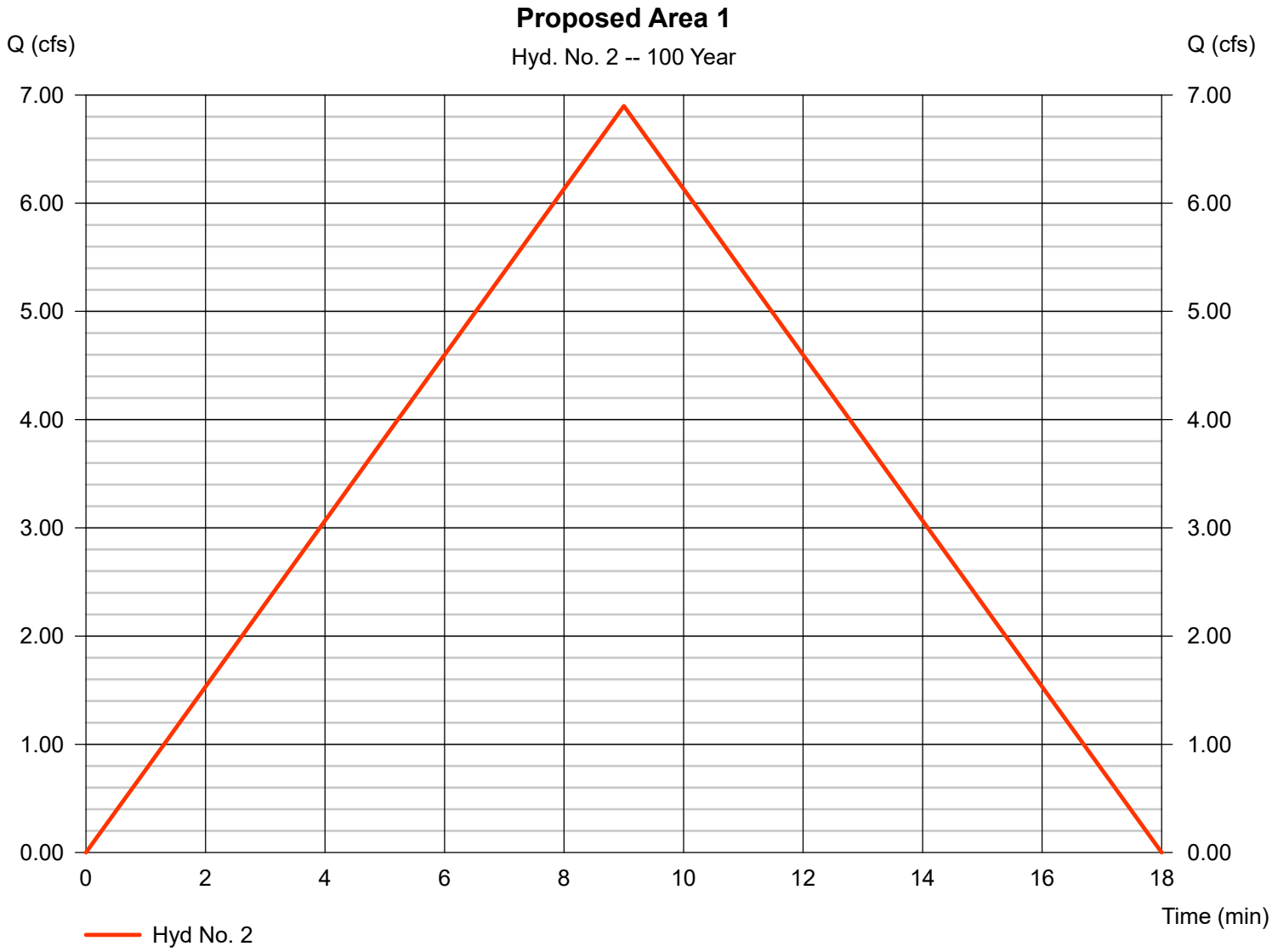


Hydrograph Report

Hyd. No. 2

Proposed Area 1

Hydrograph type	=	Rational	Peak discharge	=	6.898 cfs
Storm frequency	=	100 yrs	Time to peak	=	9 min
Time interval	=	1 min	Hyd. volume	=	3,725 cuft
Drainage area	=	4.080 ac	Runoff coeff.	=	0.2
Intensity	=	8.454 in/hr	Tc by TR55	=	9.00 min
IDF Curve	=	GSD-60 NOAA.IDF	Asc/Rec limb fact	=	1/1



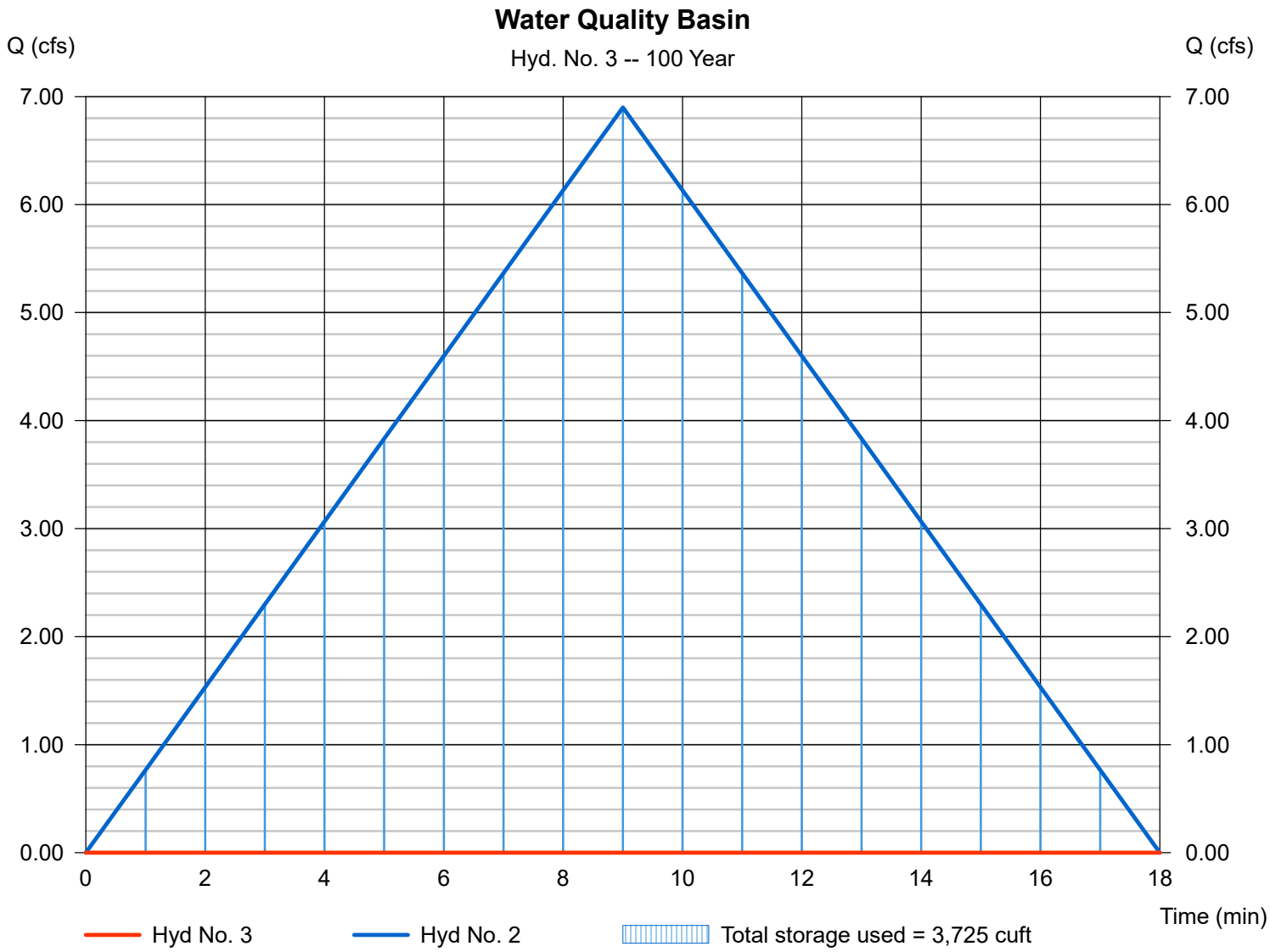
Hydrograph Report

Hyd. No. 3

Water Quality Basin

Hydrograph type	=	Reservoir	Peak discharge	=	0.000 cfs
Storm frequency	=	100 yrs	Time to peak	=	n/a
Time interval	=	1 min	Hyd. volume	=	0 cuft
Inflow hyd. No.	=	2 - Proposed Area 1	Max. Elevation	=	204.92 ft
Reservoir name	=	Pond 1	Max. Storage	=	3,725 cuft

Storage Indication method used.

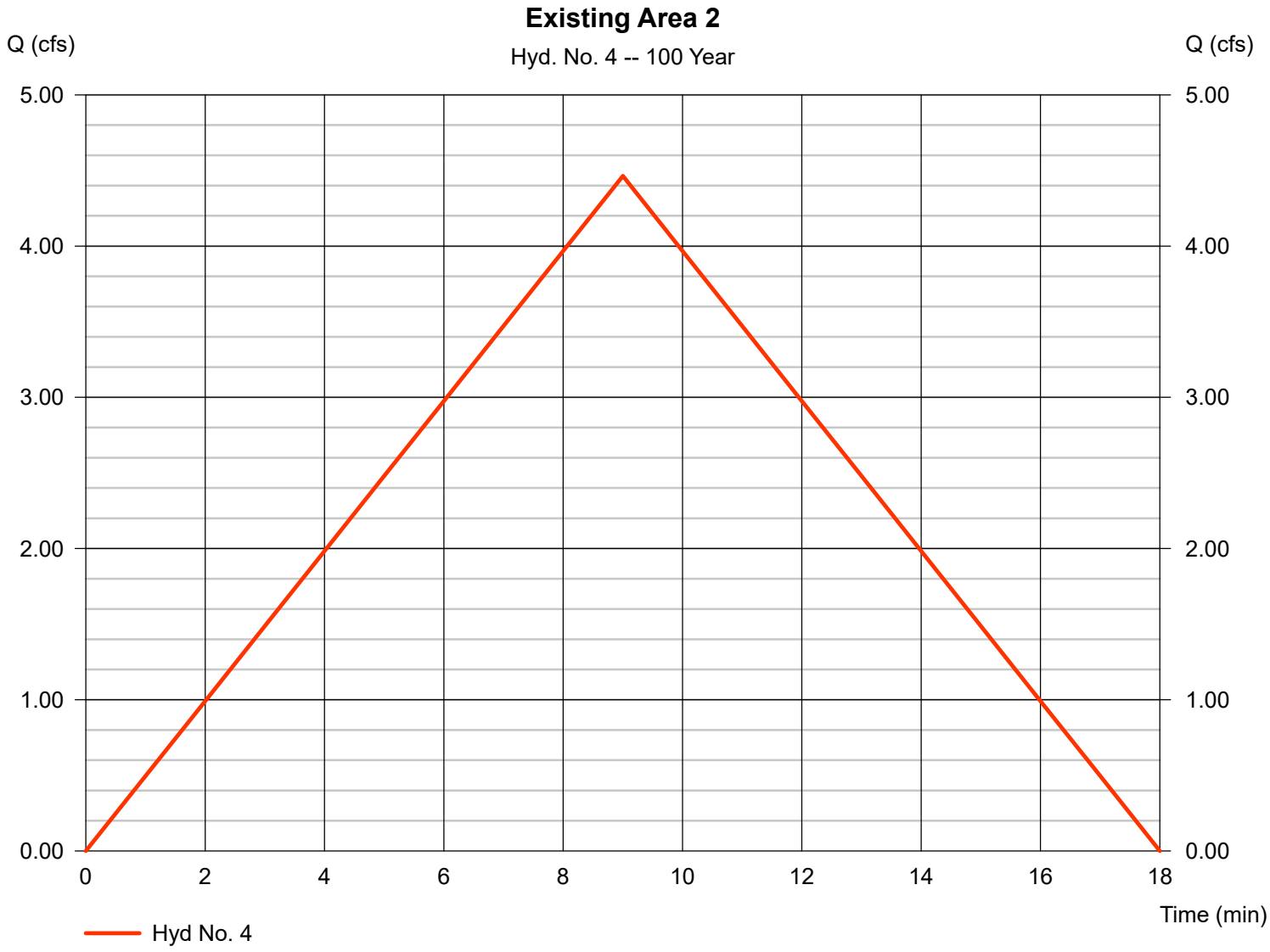


Hydrograph Report

Hyd. No. 4

Existing Area 2

Hydrograph type	=	Rational	Peak discharge	=	4.464 cfs
Storm frequency	=	100 yrs	Time to peak	=	9 min
Time interval	=	1 min	Hyd. volume	=	2,410 cuft
Drainage area	=	2.640 ac	Runoff coeff.	=	0.2
Intensity	=	8.454 in/hr	Tc by TR55	=	9.00 min
IDF Curve	=	GSD-60 NOAA.IDF	Asc/Rec limb fact	=	1/1

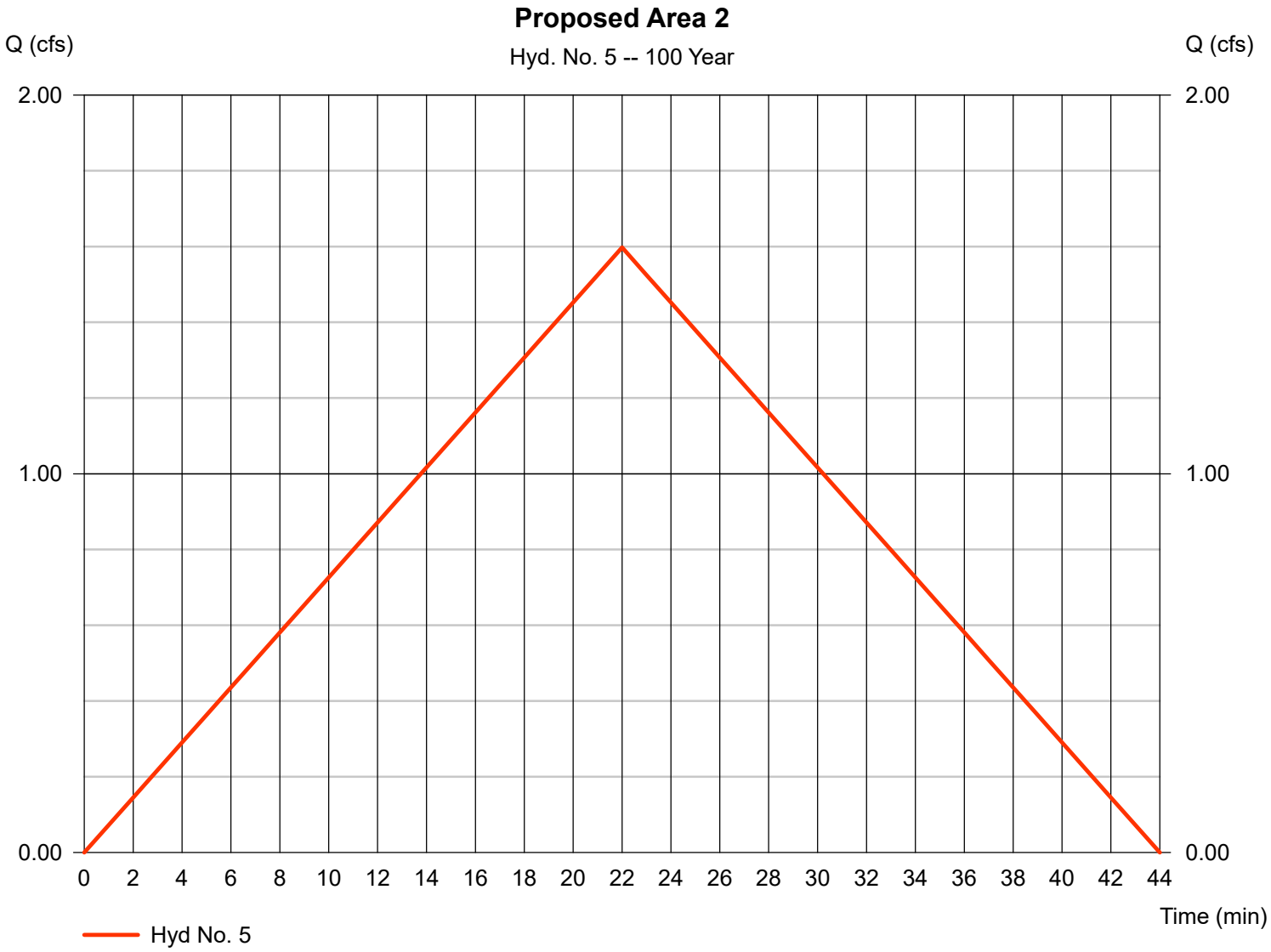


Hydrograph Report

Hyd. No. 5

Proposed Area 2

Hydrograph type	=	Rational	Peak discharge	=	1.597 cfs
Storm frequency	=	100 yrs	Time to peak	=	22 min
Time interval	=	1 min	Hyd. volume	=	2,109 cuft
Drainage area	=	1.540 ac	Runoff coeff.	=	0.2
Intensity	=	5.186 in/hr	Tc by TR55	=	22.00 min
IDF Curve	=	GSD-60 NOAA.IDF	Asc/Rec limb fact	=	1/1



NOAA Atlas 14, Volume 10, Version 3
Location name: Oakdale, Connecticut, USA*
Latitude: 41.4238°, Longitude: -72.2074°
Elevation: 217 ft**
* source: ESRI Maps
** source: USGS

POINT PRECIPITATION FREQUENCY ESTIMATES

Sanja Perica, Sandra Pavlovic, Michael St. Laurent, Carl Trypaluk, Dale Unruh, Orlan Wilhite

NOAA, National Weather Service, Silver Spring, Maryland

PF_tabular | PF_graphical | Maps_&_aerials

PF tabular

PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches/hour)[1]

Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	**4.06** (3.16-5.06)	**4.85** (3.77-6.06)	**6.14** (4.76-7.70)	**7.24** (5.58-9.12)	**8.72** (6.52-11.4)	**9.84** (7.20-13.1)	**11.0** (7.85-15.2)	**12.4** (8.33-17.3)	**14.3** (9.28-20.6)	**15.9** (10.1-23.3)
10-min	**2.87** (2.23-3.59)	**3.44** (2.67-4.30)	**4.36** (3.38-5.47)	**5.12** (3.94-6.45)	**6.18** (4.61-8.09)	**6.97** (5.10-9.29)	**7.81** (5.56-10.8)	**8.77** (5.90-12.3)	**10.1** (6.57-14.6)	**11.3** (7.13-16.5)
15-min	**2.25** (1.75-2.81)	**2.70** (2.10-3.37)	**3.42** (2.65-4.29)	**4.02** (3.10-5.06)	**4.85** (3.62-6.34)	**5.47** (4.00-7.29)	**6.12** (4.36-8.44)	**6.87** (4.62-9.60)	**7.95** (5.15-11.5)	**8.84** (5.60-13.0)
30-min	**1.58** (1.23-1.98)	**1.89** (1.47-2.37)	**2.40** (1.86-3.01)	**2.83** (2.18-3.56)	**3.41** (2.54-4.45)	**3.84** (2.81-5.12)	**4.30** (3.06-5.92)	**4.82** (3.25-6.74)	**5.57** (3.61-8.03)	**6.19** (3.92-9.07)
60-min	**1.02** (0.793-1.27)	**1.22** (0.948-1.52)	**1.55** (1.20-1.94)	**1.82** (1.40-2.29)	**2.19** (1.64-2.87)	**2.47** (1.81-3.30)	**2.77** (1.97-3.81)	**3.10** (2.09-4.34)	**3.59** (2.32-5.16)	**3.98** (2.52-5.84)
2-hr	**0.670** (0.525-0.832)	**0.800** (0.627-0.994)	**1.01** (0.790-1.26)	**1.19** (0.923-1.49)	**1.43** (1.08-1.86)	**1.61** (1.19-2.14)	**1.81** (1.30-2.47)	**2.03** (1.37-2.82)	**2.36** (1.54-3.37)	**2.64** (1.68-3.83)
3-hr	**0.519** (0.408-0.641)	**0.619** (0.486-0.765)	**0.782** (0.613-0.970)	**0.917** (0.715-1.14)	**1.10** (0.834-1.43)	**1.24** (0.920-1.64)	**1.39** (1.00-1.90)	**1.56** (1.06-2.16)	**1.82** (1.19-2.59)	**2.04** (1.30-2.94)
6-hr	**0.331** (0.263-0.406)	**0.394** (0.312-0.484)	**0.496** (0.392-0.611)	**0.581** (0.457-0.720)	**0.699** (0.531-0.898)	**0.786** (0.586-1.03)	**0.879** (0.637-1.19)	**0.989** (0.674-1.35)	**1.15** (0.754-1.62)	**1.29** (0.823-1.84)
12-hr	**0.204** (0.163-0.249)	**0.242** (0.193-0.296)	**0.305** (0.243-0.373)	**0.357** (0.283-0.439)	**0.429** (0.328-0.546)	**0.482** (0.361-0.626)	**0.539** (0.393-0.722)	**0.605** (0.415-0.819)	**0.703** (0.462-0.977)	**0.784** (0.503-1.11)
24-hr	**0.120** (0.097-0.145)	**0.143** (0.115-0.174)	**0.182** (0.146-0.221)	**0.214** (0.170-0.261)	**0.257** (0.198-0.326)	**0.290** (0.219-0.374)	**0.325** (0.238-0.432)	**0.366** (0.252-0.491)	**0.426** (0.282-0.587)	**0.477** (0.307-0.668)
2-day	**0.067** (0.054-0.080)	**0.081** (0.066-0.097)	**0.104** (0.084-0.125)	**0.123** (0.099-0.149)	**0.149** (0.116-0.188)	**0.168** (0.128-0.216)	**0.189** (0.140-0.251)	**0.215** (0.148-0.285)	**0.253** (0.167-0.345)	**0.285** (0.184-0.395)
3-day	**0.048** (0.039-0.058)	**0.058** (0.048-0.070)	**0.075** (0.061-0.090)	**0.089** (0.072-0.107)	**0.108** (0.084-0.135)	**0.122** (0.093-0.155)	**0.137** (0.102-0.180)	**0.155** (0.107-0.205)	**0.183** (0.121-0.248)	**0.207** (0.134-0.285)
4-day	**0.039** (0.032-0.046)	**0.047** (0.038-0.056)	**0.060** (0.049-0.072)	**0.071** (0.057-0.085)	**0.086** (0.067-0.107)	**0.097** (0.074-0.123)	**0.109** (0.081-0.143)	**0.123** (0.085-0.162)	**0.145** (0.096-0.196)	**0.164** (0.106-0.224)
7-day	**0.026** (0.022-0.031)	**0.031** (0.026-0.037)	**0.039** (0.032-0.047)	**0.046** (0.038-0.055)	**0.055** (0.044-0.069)	**0.062** (0.048-0.079)	**0.070** (0.052-0.091)	**0.079** (0.055-0.103)	**0.092** (0.061-0.123)	**0.103** (0.067-0.140)
10-day	**0.021** (0.017-0.025)	**0.025** (0.020-0.030)	**0.031** (0.025-0.037)	**0.036** (0.029-0.043)	**0.043** (0.034-0.053)	**0.048** (0.037-0.060)	**0.053** (0.040-0.069)	**0.060** (0.042-0.077)	**0.069** (0.046-0.092)	**0.077** (0.050-0.103)
20-day	**0.015** (0.012-0.018)	**0.017** (0.014-0.020)	**0.020** (0.017-0.024)	**0.023** (0.019-0.027)	**0.026** (0.021-0.032)	**0.029** (0.022-0.036)	**0.032** (0.024-0.040)	**0.035** (0.025-0.045)	**0.039** (0.026-0.052)	**0.042** (0.028-0.057)
30-day	**0.012** (0.010-0.015)	**0.014** (0.011-0.016)	**0.016** (0.013-0.019)	**0.018** (0.015-0.021)	**0.020** (0.016-0.025)	**0.022** (0.017-0.027)	**0.024** (0.018-0.030)	**0.026** (0.018-0.033)	**0.029** (0.019-0.037)	**0.030** (0.020-0.040)
45-day	**0.010** (0.009-0.012)	**0.011** (0.009-0.013)	**0.013** (0.011-0.015)	**0.014** (0.012-0.016)	**0.016** (0.012-0.019)	**0.017** (0.013-0.021)	**0.018** (0.014-0.023)	**0.020** (0.014-0.025)	**0.021** (0.014-0.028)	**0.022** (0.014-0.029)
60-day	**0.009** (0.007-0.010)	**0.010** (0.008-0.011)	**0.011** (0.009-0.013)	**0.012** (0.010-0.014)	**0.013** (0.010-0.016)	**0.014** (0.011-0.017)	**0.015** (0.011-0.019)	**0.016** (0.011-0.021)	**0.017** (0.012-0.022)	**0.018** (0.012-0.024)

[1] Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS).

Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values.

Please refer to NOAA Atlas 14 document for more information.

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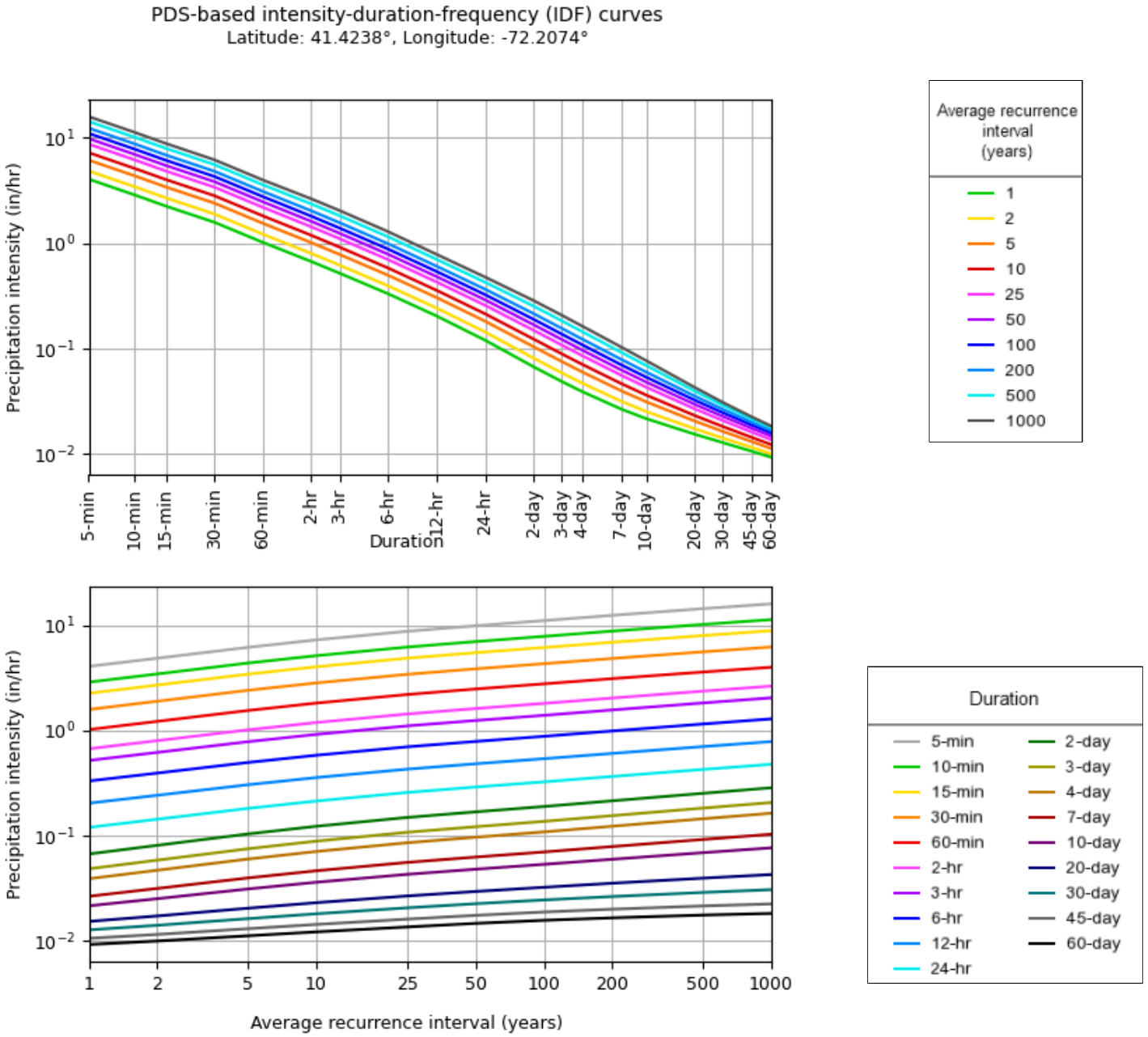
PF graphical



NOAA Atlas 14, Volume 10, Version 3

Created (GMT): Fri Apr 5 20:03:08 2024

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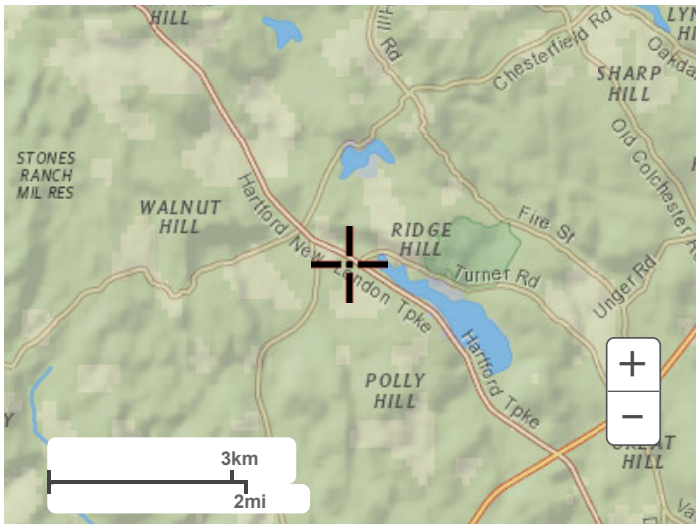
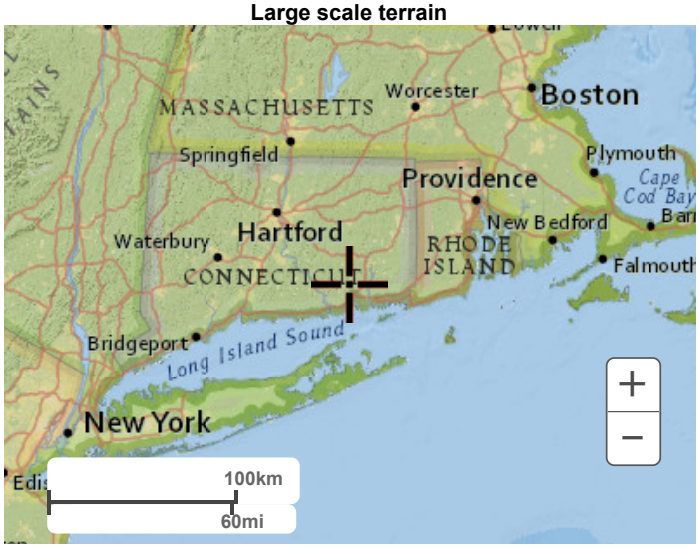
Maps & aerials

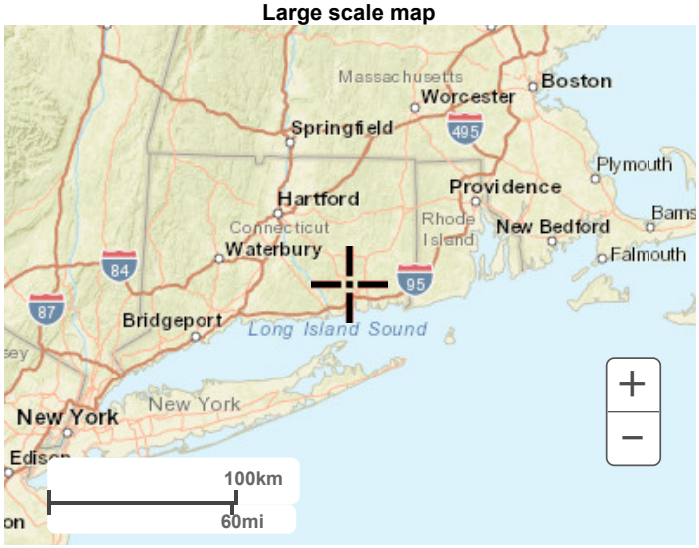
Small scale terrain



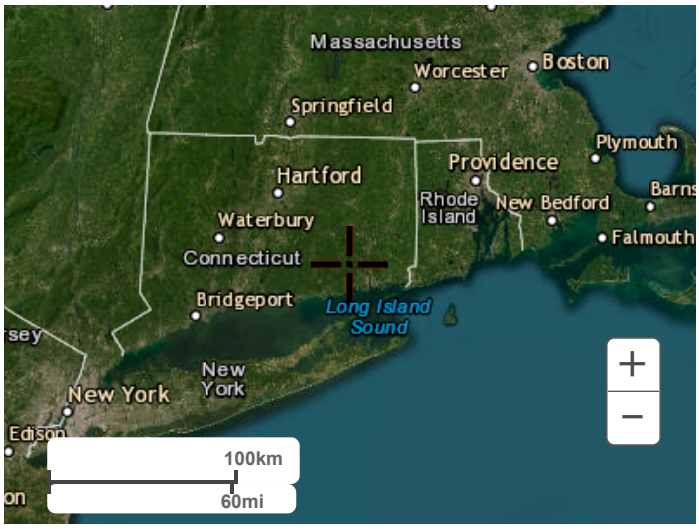
Large scale terrain



Large scale map



Large scale aerial



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US Department of Commerce
National Oceanic and Atmospheric Administration
National Weather Service
National Water Center
1325 East West Highway
Silver Spring, MD 20910
Questions?: HDSC.Questions@noaa.gov

Disclaimer

Soil Map—State of Connecticut, Eastern Part
(1492 Hartford - New London Turnpike)

Map Scale: 1:1,510 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 20 40 80 120

Feet: 0 50 100 200 300

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 18N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:12,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: State of Connecticut, Eastern Part
Survey Area Data: Version 1, Sep 15, 2023

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jun 14, 2022—Oct 6, 2022

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
3	Ridgebury, Leicester, and Whitman soils, 0 to 8 percent slopes, extremely stony	0.3	5.0%
29A	Agawam fine sandy loam, 0 to 3 percent slopes	1.7	29.6%
84B	Paxton and Montauk fine sandy loams, 3 to 8 percent slopes	1.8	31.7%
84C	Paxton and Montauk fine sandy loams, 8 to 15 percent slopes	2.0	33.7%
Totals for Area of Interest		**5.8**	**100.0%**