The following amendment to the 2019 version of the Engineering Design Manual is issued by the City of Vancouver on February 11, 2025. Delete and replace the content in Section 5.2 with the following:

5.2 DEMANDS AND FLOWS

In order to determine the proper sizing and configuration of storm drainage systems, the flow requirements must be determined. This section outlines the requirements for determining the design flows based on return periods and using either the Rational or Hydrograph method of flow analysis.

5.2.1 DESIGN FLOW

The City of Vancouver's drainage system and design storms consist of the following:

- The Minor System: consists of gutters, catchbasins, open channels, pipes, driveway culverts, watercourses, and stormwater management facilities designed to carry flows with the following minimum return periods (note: design storms may differ from industry standard):

5-Year Return Period	Residential, minor system components not listed in the 10 and 25-year return periods below.
10-Year Return Period	Business, commercial, industrial, downtown core (west of Main Street includes all of the West End peninsula), and the False Creek Comprehensive Development District.
25-Year Return Period	All trunk sewers (sewers with a tributary area greater than 40ha).

- The Major System: consists of roadways, culverts, ditches, surface flood paths, watercourses, and stormwater management facilities designed to carry flows with the following minimum return period (note: design storm may differ from industry standard):

100-Year Return Period	All major system components.

The storm system must be designed using one of the following two methods:

≤ 20ha	The Rational Method as outlined in *Section 5.2.2*
> 20ha	The Hydrograph Method as outline in *Section 5.2.3*

5.2.2 RATIONAL METHOD

The Design Flow, Q_{des}, for drainage areas less than or equal to 20ha is calculated using the Rational Method which is defined as:

$$Q_{des} = \frac{CIA}{360}$$

Where:

Q_{des} = Design Flow (m^3/s)

C = Runoff Coefficient as per *Section 0*

I = Rainfall Intensity (mm/hr) as per *Section 0*

A = Tributary Drainage Area (ha) as per *Section 0*

5.2.2.1 RUNOFF COEFFICIENT

The runoff coefficient, C, is based on ground slope, type of cover, type of ground surface, and development population density. It is up to the designer to select an appropriate runoff coefficient that is representative of the site. The runoff coefficient must account for future development outlined in community plans and / or over a 100-year period.

Table 5-1 provides general coefficients for typical development types:

Table 5-1: Development Runoff Coefficients

Type of Development	Runoff Coefficient, C (up to 10 year event)
Parks & Greenspace	0.30
One and Two Family Dwelling	0.70
Multiple Family Dwelling (3+ Units)	0.85
Local Commercial	0.95
Central Business District	0.95
Industrial	0.90
Institutional	0.70 to 0.95 (depending on site characteristics)

Note: Apply the following multipliers to runoff coefficients for events greater than the 10 year, up to a maximum C-value of 0.95:

25 year event – 1.1

50 year event – 1.15

100 year event – 1.2

It is generally preferable to develop a composite runoff based on the percentages of different types of surfaces in the drainage area. This procedure is often applied to typical sample blocks as a guide to selection of reasonable values of the coefficient for an entire area.

Table 5-2 provides suggested coefficients for various surface types:

Table 5-2: Surface Type Runoff Coefficients

Character of Surface	Runoff Coefficient, C (up to 10 year event)
Flat (<2%) Lawns, Sandy Soil	0.08
Average (2-7%) Lawns, Sandy Soil	0.13
Steep (>7%) Lawns, Sandy Soil	0.18
Flat (<2%) Lawns, Heavy Soil	0.18
Average (2-7%) Lawns, Heavy Soil	0.23
Steep (>7%) Lawns, Heavy Soil	0.30
Roofs, Pavement, & Concrete	0.95
Gravel, various compaction (Roads, Shoulders, Walkways & Driveways)	0.60 to 0.80
Green Roof (>150-250mm soil depth, Flat)	0.30
Green Roof (>100-150mm soil depth, Flat)	0.40
Green Roof (>60-100mm soil depth, Flat)	0.50
Open Water (including water features)	1.0

Note: Apply the following multipliers to runoff coefficients for events greater than the 10 year, up to a maximum C-value of 0.95:

25 year event – 1.1

50 year event – 1.15

100 year event – 1.2

5.2.2.2 RAINFALL INTENSITY

The rainfall intensity, I, is calculated using the City of Vancouver Intensity Duration Frequency (IDF) curves and the IDF Equation which is defined as:

$$I = A * T^B$$

Where:

T = Time (hours)

A,B = Coefficients

I= Rainfall Intensity (mm/hr)

There are three IDF curves used by the City of Vancouver: 2018, 2050, and 2100. These curves are provided below as well as a description of when each curve is to be used.

2018 IDF

The 2018 IDF curve, ***Figure 5-1***, and coefficients in ***Table 5-3****Table* , are to be used for on-site storm water management pre-development estimates.

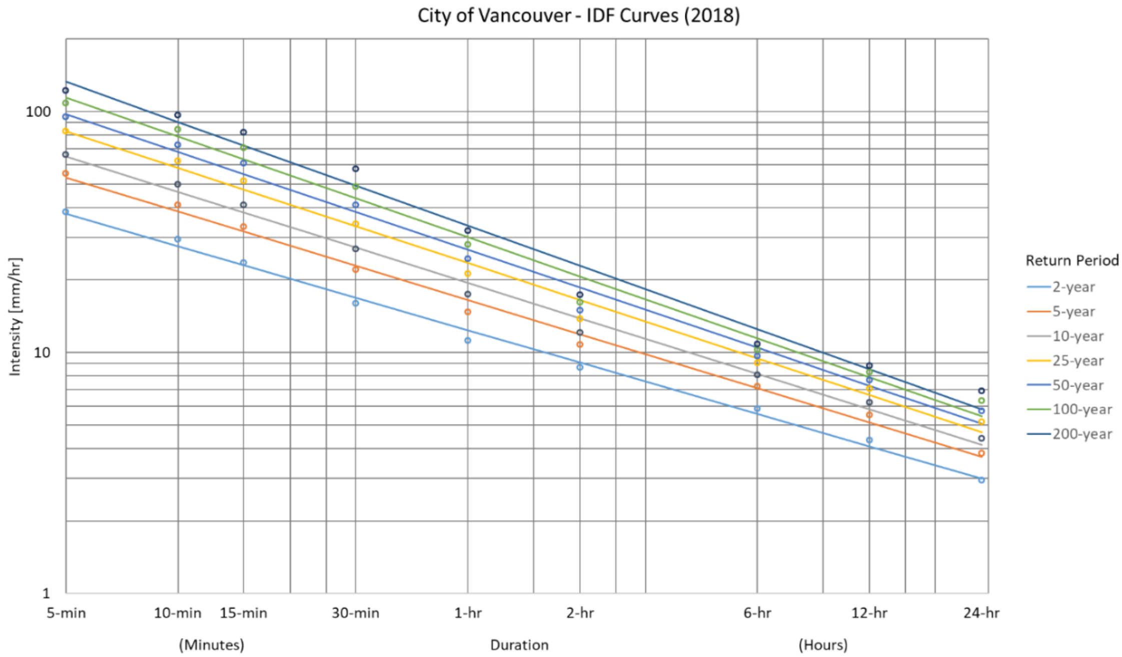

Figure 5-1: 2018 IDF Curve

Table 5-3: 2018 IDF Equation Coefficients

Recurrence Interval	Probability	A	B
1 in 2 year	50%	12.386	-0.447
1 in 5 year	20%	16.517	-0.471
1 in 10 year	10%	19.449	-0.486
1 in 25 year	4%	23.487	-0.508
1 in 50 year	2%	26.673	-0.522
1 in 100 year	1%	30.043	-0.537
1 in 200 year	0.5%	33.646	-0.553

2050 IDF (RCP 8.5 Moderate Projection)

The 2050 IDF (RCP 8.5 Moderate Projection) curve, ***Figure 5-2***, and coefficients in ***Table 5-4***, are to be used for storm component of sanitary sewer design in a “combined connection to sanitary sewer area”.

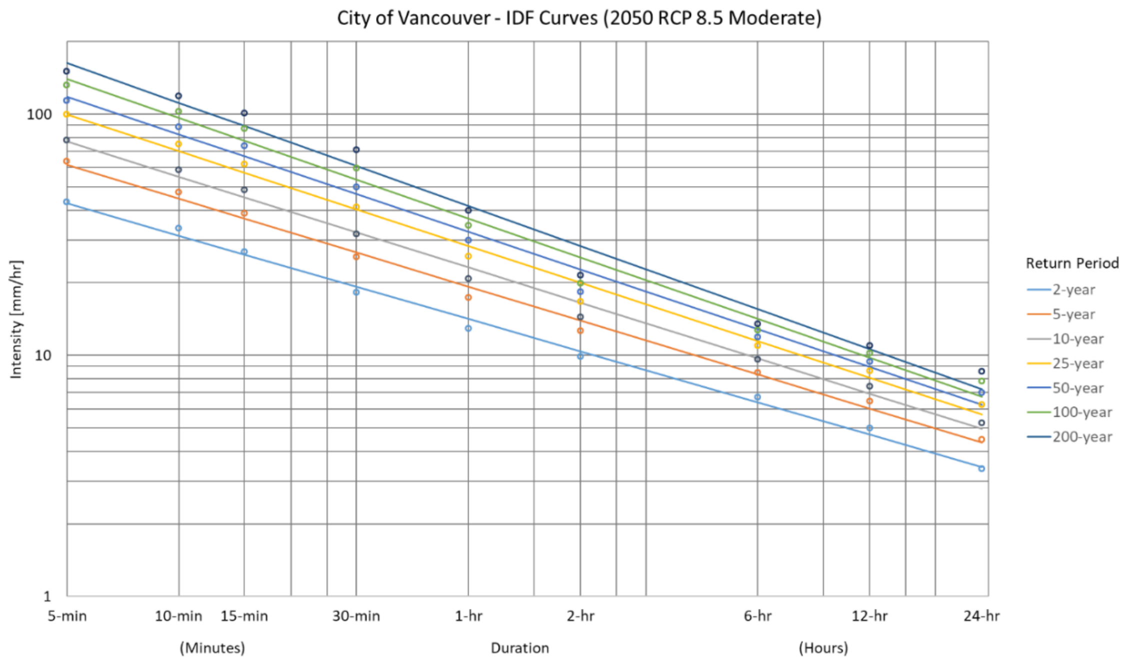

Figure 5-2: 2050 IDF (RCP 8.5 Moderate Projection) Curve

Table 5-4: 2050 IDF (RCP 8.5 Moderation Projection) Equation Coefficients

Recurrence Interval	Probability	A	B
1 in 2 year	50%	14.138	-0.445
1 in 5 year	20%	19.285	-0.469
1 in 10 year	10%	23.116	-0.484
1 in 25 year	4%	28.368	-0.506
1 in 50 year	2%	32.502	-0.520
1 in 100 year	1%	36.913	-0.535
1 in 200 year	0.5%	41.579	-0.550

2100 IDF (RCP 8.5 Moderate Projection)

The 2100 IDF (RCP 8.5 Moderate Projection) curve, ***Figure 5-3***, and coefficients in ***Table 5-5***, are to be used for storm sewer design and on-site storm water management post-development estimates.

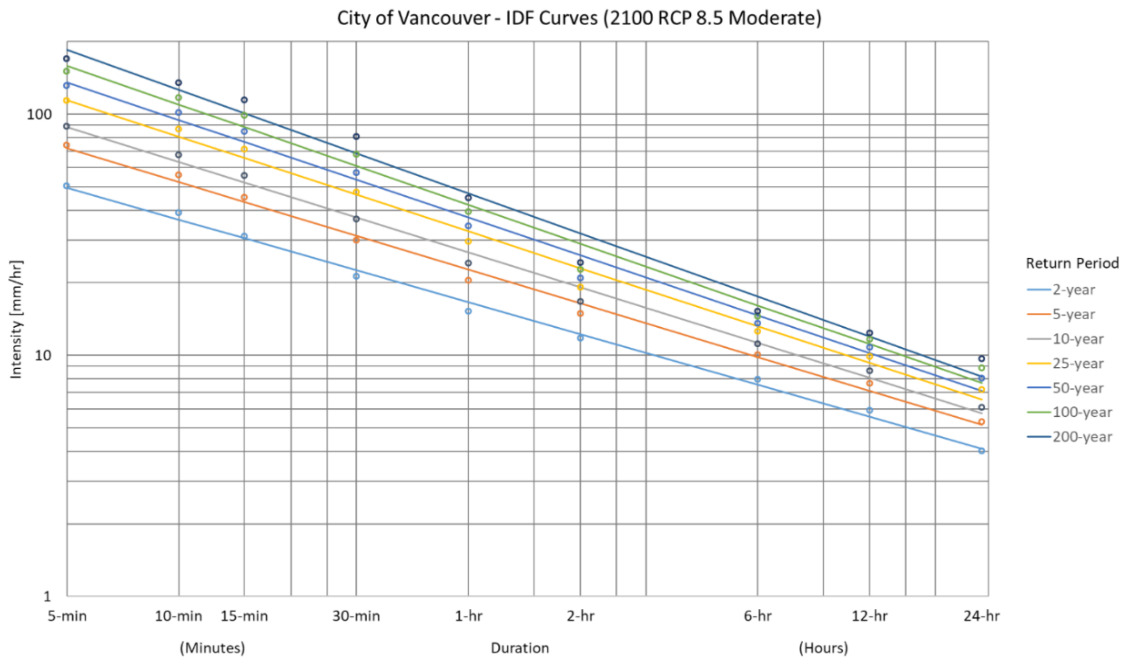

Figure 5-3: 2100 IDF (RCP 8.5 Moderate Projection) Curve

Table 5-5: 2100 IDF Equation Coefficients

Recurrence Interval	Probability	A	B
1 in 2 year	50%	16.607	-0.440
1 in 5 year	20%	22.698	-0.466
1 in 10 year	10%	26.651	-0.482
1 in 25 year	4%	32.615	-0.506
1 in 50 year	2%	37.252	-0.520
1 in 100 year	1%	42.014	-0.535
1 in 200 year	0.5%	46.968	-0.551

5.2.2.3 TRIBUTARY DRAINAGE AREA

The designer must determine the tributary drainage area, A, based on the applicable existing and proposed contours. The cumulative tributary drainage areas must be considered for catchments with multiple subcatchments.

5.2.2.4 TIME OF CONCENTRATION

The time of concentration, t_c, is a sum of the inlet time and travel time in the pipe or channel to the point of interest as shown in the formula below:

$$t_c = t_i + t_t$$

Where:

t_c = Time of Concentration (min)

t_t = Travel Time in Pipe or Channel (min) = Length (m) / Velocity (m/min)

t_i = Inlet Time (min)

The inlet time for developed areas is based on ***Table 5-6***:

Table 5-6: Inlet Times

Return Period	Typical Inlet Time, t_i
5-year Storm	10 minutes
10-year Storm	5 minutes
25-year Storm	5 minutes

The inlet time for undeveloped areas is based on the Kerby Formula which is defined as:

$$T_i = 1.45 \left[\frac{NL}{\sqrt{s}}\right]^{0.467}$$

Where:

T_i = Inlet Time (min)

L = Overland Flow Length to Furthest Point (m) (with L<370m)

s = Slope of Overland Flow Terrain (m/m)

N = Kerby Coefficient from ***Table 5-7***

Table 5-7: Kerby Coefficients

Surface Type	N
Smooth impervious surface	0.02
Smooth bare packed soil	0.10
Poor grass, cultivated row crops, or moderately rough bare surfaces	0.20
Pasture or average grass	0.40
Deciduous timberland	0.60
Coniferous timberland, deciduous timberland with deep frost, litter, or dense grass	0.80

5.2.2.5 CALCULATIONS SHEET

Rational Method calculations shall be presented on the form outlined in ***Figure 5-4***:

Project Name:	
Designed by:	
Calculation Date:	
Checked by:	
Company Name:	

IDF Used:	2100
Return Period (yr):	5
n	0.013
Inlet Time (min):	

No	Location			Pipe Specifications			Catchment Properties						Flows			Max Flows		Design Summary			
	Street Name	U/S MH	D/S MH	Length	Diameter, D	Slope, s	Contributing U/S Catchment Area Numbers	Area, A	Zone	C	Travel Time	Time of Concentration	Intensity	Inc. C*A	Total C*A	Q_{peak}	Q_{Full}	Runoff Capacity	Full Velocity		Peak Velocity
											$t_t = \frac{L}{V_{Peak}} \frac{1}{60}$	$t_c = t_i$ for most U/S main or (t_i+t_t)* for other mains; * values from U/S mains	From IDF Curve, $I = A*(t_c/60)^B$		$\sum CxA$	$\frac{I\ X \sum CXA}{360}$	$Q_{Full} = \frac{1}{n}\frac{D^{2/3}}{4}\left(\frac{s}{100}\right)^{1/2}\frac{\pi D^2}{4}$	Q_{Peak}/Q_{Full}	$V_{Full} = \frac{Q_{Full}}{\frac{\pi D^2}{4}}$	X=V Peak/ V Full ; from Hydraulic-Elements Graph	$V_{Peak} = X \times V_{Full}$
				m	m	%		ha			min	min	mm/hr	ha	ha	m^3/s	m^3/s	%	m/s	%	m/s

Figure 5-4: Rational Method Calculations Form

5.2.3 HYDROGRAPH METHOD

The hydrograph method shall be used to determine the demands and flows for catchment areas larger than 20ha, or areas that involve complex hydraulics that are beyond the capacity of the rational method. The City may request the hydrograph method or modelling for areas where they are deemed necessary.

The number of pipes modeled and size of subcatchments shall be determined by the complexity and scale of the project. Upstream and downstream boundary conditions, as applicable, are to be agreed upon by the City Engineer. The downstream boundary of the catchment shall be defined by the Metro Vancouver Trunk or as agreed upon by the City Engineer.

5.2.3.1 MODELLING SOFTWARE

Acceptable modelling software for the Hydrograph Method are to be approved by the City Engineer but may include PCSWMM, InfoWorks ICM, or alternates.

For InfoWorks ICM models, see the City of Vancouver InfoWorks ICM Modelling Standards & Guidelines (2023) document for additional requirements. For PCSWMM models, see the City of Vancouver Sewers & Drainage Design Branch PCSWMM modelling guides.

5.2.3.2 REPORTING

A modelling report must be prepared and submitted which outlines the following:

- Modelling software name and version.
- Inputs, parameters, and assumptions.
- Design storm data used.
- Hydrographs for pre- and post-development.
- Pipe profile indicating the hydraulic grade line (HGL), maintenance hole data (IDs, rim and invert elevations), pipe data (length, diameter, peak flow rates), and approximate ground profile.
- Plan(s) which shows subcatchment boundaries, system network, junction IDs, boundary condition locations, tributary area, land use and/or zoning, areas, slopes, contours, imperviousness, flow paths, and existing and proposed storm drainage facilities.
- Results provided for existing, proposed and ultimate conditions, as applicable.

5.2.3.3 DESIGN STORMS

Table 5-8 indicates the design storms to be used for the 2, 5, 10, 25, 100, and 200-year storms in the City of Vancouver. The consultant / designer is to utilize the most conservative event for design purposes. Where an event duration is not specified, it is not typically used in the City. Should an unspecified duration be required, the consultant / designer can propose a suitable distribution for approval by the City.

Table 5-8: Design Storm Distribution

AES 1-hr BC Coast[1]			AES 2-hr BC Coast[1]			SCS 24-hr Type 1A[2]		
Time	Absolute	Cumulative	Time	Absolute	Cumulative	Time	Absolute	Cumulative
0:00	0.000	0.000	0:00	0.000	0.000	0:00	0.00000	0.00000
0:05	0.010	0.010	0:05	0.005	0.005	0:05	0.00220	0.00220
0:10	0.030	0.040	0:10	0.005	0.010	0:10	0.00175	0.00395
0:15	0.060	0.100	0:15	0.015	0.025	0:15	0.00168	0.00563
0:20	0.100	0.200	0:20	0.015	0.040	0:20	0.00162	0.00725
0:25	0.150	0.350	0:25	0.030	0.070	0:25	0.00155	0.00880
0:30	0.210	0.560	0:30	0.030	0.100	0:30	0.00150	0.01030
0:35	0.160	0.720	0:35	0.050	0.150	0:35	0.00150	0.01180
0:40	0.120	0.840	0:40	0.050	0.200	0:40	0.00158	0.01338
0:45	0.080	0.920	0:45	0.075	0.275	0:45	0.00165	0.01503
0:50	0.050	0.970	0:50	0.075	0.350	0:50	0.00172	0.01675
0:55	0.020	0.990	0:55	0.105	0.455	0:55	0.00178	0.01853
1:00	0.010	1.000	1:00	0.105	0.560	1:00	0.00193	0.02047
			1:05	0.080	0.640	1:05	0.00233	0.02280
			1:10	0.080	0.720	1:10	0.00242	0.02522
			1:15	0.060	0.780	1:15	0.00248	0.02770
			1:20	0.060	0.840	1:20	0.00255	0.03025
			1:25	0.040	0.880	1:25	0.00262	0.03287
			1:30	0.040	0.920	1:30	0.00263	0.03550
			1:35	0.025	0.945	1:35	0.00250	0.03800
			1:40	0.025	0.970	1:40	0.00250	0.04050
			1:45	0.010	0.980	1:45	0.00243	0.04293
			1:50	0.010	0.990	1:50	0.00252	0.04545
			1:55	0.005	0.995	1:55	0.00255	0.04800
			2:00	0.005	1.000	2:00	0.00252	0.05052
						2:05	0.00258	0.05310
						2:10	0.00267	0.05577
						2:15	0.00267	0.05843
						2:20	0.00272	0.06115
						2:25	0.00272	0.06387
						2:30	0.00267	0.06653
						2:35	0.00267	0.06920
						2:40	0.00267	0.07187
						2:45	0.00267	0.07453
						2:50	0.00267	0.07720
						2:55	0.00267	0.07987
						3:00	0.00265	0.08252
						3:05	0.00258	0.08510
						3:10	0.00267	0.08777
						3:15	0.00267	0.09043
						3:20	0.00267	0.09310

AES 1-hr BC Coast[1]			AES 2-hr BC Coast[1]			SCS 24-hr Type 1A[2]		
Time	Absolute	Cumulative	Time	Absolute	Cumulative	Time	Absolute	Cumulative
						3:25	0.00270	0.09580
						3:30	0.00278	0.09858
						3:35	0.00292	0.10150
						3:40	0.00300	0.10450
						3:45	0.00293	0.10743
						3:50	0.00302	0.11045
						3:55	0.00308	0.11353
						4:00	0.00308	0.11662
						4:05	0.00308	0.11970
						4:10	0.00308	0.12278
						4:15	0.00315	0.12593
						4:20	0.00322	0.12915
						4:25	0.00325	0.13240
						4:30	0.00327	0.13567
						4:35	0.00333	0.13900
						4:40	0.00342	0.14242
						4:45	0.00348	0.14590
						4:50	0.00355	0.14945
						4:55	0.00362	0.15307
						5:00	0.00370	0.15677
						5:05	0.00383	0.16060
						5:10	0.00392	0.16452
						5:15	0.00398	0.16850
						5:20	0.00405	0.17255
						5:25	0.00412	0.17667
						5:30	0.00415	0.18082
						5:35	0.00408	0.18490
						5:40	0.00425	0.18915
						5:45	0.00432	0.19347
						5:50	0.00438	0.19785
						5:55	0.00448	0.20233
						6:00	0.00467	0.20700
						6:05	0.00500	0.21200
						6:10	0.00508	0.21708
						6:15	0.00515	0.22223
						6:20	0.00522	0.22745
						6:25	0.00528	0.23273
						6:30	0.00525	0.23798
						6:35	0.00492	0.24290
						6:40	0.00492	0.24782
						6:45	0.00505	0.25287
						6:50	0.00523	0.25810

AES 1-hr BC Coast[1]			AES 2-hr BC Coast[1]			SCS 24-hr Type 1A[2]		
Time	Absolute	Cumulative	Time	Absolute	Cumulative	Time	Absolute	Cumulative
						6:55	0.00543	0.26353
						7:00	0.00567	0.26920
						7:05	0.00600	0.27520
						7:10	0.00642	0.28162
						7:15	0.00682	0.28843
						7:20	0.00727	0.29570
						7:25	0.00777	0.30347
						7:30	0.01010	0.31357
						7:35	0.01783	0.33140
						7:40	0.01942	0.35082
						7:45	0.01995	0.37077
						7:50	0.01993	0.39070
						7:55	0.01937	0.41007
						8:00	0.01733	0.42740
						8:05	0.01200	0.43940
						8:10	0.01025	0.44965
						8:15	0.00912	0.45877
						8:20	0.00818	0.46695
						8:25	0.00745	0.47440
						8:30	0.00710	0.48150
						8:35	0.00750	0.48900
						8:40	0.00708	0.49608
						8:45	0.00675	0.50283
						8:50	0.00642	0.50925
						8:55	0.00608	0.51533
						9:00	0.00577	0.52110
						9:05	0.00550	0.52660
						9:10	0.00525	0.53185
						9:15	0.00505	0.53690
						9:20	0.00485	0.54175
						9:25	0.00465	0.54640
						9:30	0.00453	0.55093
						9:35	0.00467	0.55560
						9:40	0.00467	0.56027
						9:45	0.00453	0.56480
						9:50	0.00440	0.56920
						9:55	0.00433	0.57353
						10:00	0.00430	0.57783
						10:05	0.00417	0.58200
						10:10	0.00400	0.58600
						10:15	0.00400	0.59000
						10:20	0.00400	0.59400

AES 1-hr BC Coast[1]			AES 2-hr BC Coast[1]			SCS 24-hr Type 1A[2]		
Time	Absolute	Cumulative	Time	Absolute	Cumulative	Time	Absolute	Cumulative
						10:25	0.00393	0.59793
						10:30	0.00387	0.60180
						10:35	0.00400	0.60580
						10:40	0.00383	0.60963
						10:45	0.00383	0.61347
						10:50	0.00383	0.61730
						10:55	0.00377	0.62107
						11:00	0.00367	0.62473
						11:05	0.00367	0.62840
						11:10	0.00350	0.63190
						11:15	0.00350	0.63540
						11:20	0.00350	0.63890
						11:25	0.00343	0.64233
						11:30	0.00332	0.64565
						11:35	0.00325	0.64890
						11:40	0.00317	0.65207
						11:45	0.00317	0.65523
						11:50	0.00317	0.65840
						11:55	0.00313	0.66153
						12:00	0.00308	0.66462
						12:05	0.00308	0.66770
						12:10	0.00317	0.67087
						12:15	0.00317	0.67403
						12:20	0.00317	0.67720
						12:25	0.00320	0.68040
						12:30	0.00320	0.68360
						12:35	0.00300	0.68660
						12:40	0.00308	0.68968
						12:45	0.00302	0.69270
						12:50	0.00295	0.69565
						12:55	0.00295	0.69860
						13:00	0.00302	0.70162
						13:05	0.00308	0.70470
						13:10	0.00308	0.70778
						13:15	0.00302	0.71080
						13:20	0.00295	0.71375
						13:25	0.00292	0.71667
						13:30	0.00292	0.71958
						13:35	0.00292	0.72250
						13:40	0.00283	0.72533
						13:45	0.00283	0.72817
						13:50	0.00278	0.73095

AES 1-hr BC Coast[1]			AES 2-hr BC Coast[1]			SCS 24-hr Type 1A[2]		
Time	Absolute	Cumulative	Time	Absolute	Cumulative	Time	Absolute	Cumulative
						13:55	0.00278	0.73373
						14:00	0.00283	0.73657
						14:05	0.00283	0.73940
						14:10	0.00283	0.74223
						14:15	0.00277	0.74500
						14:20	0.00280	0.74780
						14:25	0.00280	0.75060
						14:30	0.00275	0.75335
						14:35	0.00275	0.75610
						14:40	0.00275	0.75885
						14:45	0.00275	0.76160
						14:50	0.00275	0.76435
						14:55	0.00272	0.76707
						15:00	0.00268	0.76975
						15:05	0.00275	0.77250
						15:10	0.00267	0.77517
						15:15	0.00267	0.77783
						15:20	0.00267	0.78050
						15:25	0.00267	0.78317
						15:30	0.00267	0.78583
						15:35	0.00267	0.78850
						15:40	0.00258	0.79108
						15:45	0.00258	0.79367
						15:50	0.00263	0.79630
						15:55	0.00263	0.79893
						16:00	0.00258	0.80152
						16:05	0.00258	0.80410
						16:10	0.00250	0.80660
						16:15	0.00257	0.80917
						16:20	0.00253	0.81170
						16:25	0.00253	0.81423
						16:30	0.00257	0.81680
						16:35	0.00250	0.81930
						16:40	0.00250	0.82180
						16:45	0.00243	0.82423
						16:50	0.00247	0.82670
						16:55	0.00250	0.82920
						17:00	0.00248	0.83168
						17:05	0.00242	0.83410
						17:10	0.00242	0.83652
						17:15	0.00242	0.83893
						17:20	0.00242	0.84135

AES 1-hr BC Coast[1]			AES 2-hr BC Coast[1]			SCS 24-hr Type 1A[2]		
Time	Absolute	Cumulative	Time	Absolute	Cumulative	Time	Absolute	Cumulative
						17:25	0.00242	0.84377
						17:30	0.00242	0.84618
						17:35	0.00242	0.84860
						17:40	0.00233	0.85093
						17:45	0.00233	0.85327
						17:50	0.00233	0.85560
						17:55	0.00233	0.85793
						18:00	0.00233	0.86027
						18:05	0.00233	0.86260
						18:10	0.00233	0.86493
						18:15	0.00227	0.86720
						18:20	0.00230	0.86950
						18:25	0.00230	0.87180
						18:30	0.00225	0.87405
						18:35	0.00225	0.87630
						18:40	0.00225	0.87855
						18:45	0.00225	0.88080
						18:50	0.00225	0.88305
						18:55	0.00222	0.88527
						19:00	0.00217	0.88743
						19:05	0.00217	0.88960
						19:10	0.00225	0.89185
						19:15	0.00218	0.89403
						19:20	0.00212	0.89615
						19:25	0.00212	0.89827
						19:30	0.00217	0.90043
						19:35	0.00217	0.90260
						19:40	0.00208	0.90468
						19:45	0.00208	0.90677
						19:50	0.00208	0.90885
						19:55	0.00208	0.91093
						20:00	0.00208	0.91302
						20:05	0.00208	0.91510
						20:10	0.00208	0.91718
						20:15	0.00202	0.91920
						20:20	0.00205	0.92125
						20:25	0.00205	0.92330
						20:30	0.00200	0.92530
						20:35	0.00200	0.92730
						20:40	0.00200	0.92930
						20:45	0.00200	0.93130
						20:50	0.00195	0.93325

AES 1-hr BC Coast[1]			AES 2-hr BC Coast[1]			SCS 24-hr Type 1A[2]		
Time	Absolute	Cumulative	Time	Absolute	Cumulative	Time	Absolute	Cumulative
						20:55	0.00195	0.93520
						21:00	0.00198	0.93718
						21:05	0.00192	0.93910
						21:10	0.00192	0.94102
						21:15	0.00192	0.94293
						21:20	0.00192	0.94485
						21:25	0.00188	0.94673
						21:30	0.00185	0.94858
						21:35	0.00192	0.95050
						21:40	0.00183	0.95233
						21:45	0.00190	0.95423
						21:50	0.00187	0.95610
						21:55	0.00183	0.95793
						22:00	0.00182	0.95975
						22:05	0.00175	0.96150
						22:10	0.00183	0.96333
						22:15	0.00177	0.96510
						22:20	0.00180	0.96690
						22:25	0.00180	0.96870
						22:30	0.00175	0.97045
						22:35	0.00175	0.97220
						22:40	0.00175	0.97395
						22:45	0.00175	0.97570
						22:50	0.00170	0.97740
						22:55	0.00167	0.97907
						23:00	0.00168	0.98075
						23:05	0.00175	0.98250
						23:10	0.00167	0.98417
						23:15	0.00167	0.98583
						23:20	0.00162	0.98745
						23:25	0.00162	0.98907
						23:30	0.00167	0.99073
						23:35	0.00167	0.99240
						23:40	0.00158	0.99398
						23:45	0.00158	0.99557
						23:50	0.00158	0.99715
						23:55	0.00158	0.99873
						24:00	0.00127	1.00000

Notes:

1. This is the official BC Coast AES distribution as published by NRC (1989) and has been updated from previous versions of the design manual.
2. This version of the SCS Type 1A distribution (NRCS, 1986) is interpolated to 5-minute timesteps, from the original 6-min timestep version, to better fit with standard reporting intervals.