

Appendix P: Seasonal Runoff Volumes at ASBS Sites 18 inches or Greater

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Runoff Estimation Method

Seasonal runoff volumes were estimated at the monitored ASBS outfall locations (see Table O-1). Annual runoff volumes are estimated for each ASBS outfall as follows:

$$V_{runoff} = R_V * V_{rainfall} = R_V * A * D_{rainfall}$$

Where:

R_V = dimensionless volumetric runoff coefficient, calculated as follows
(Reese 2006):

$$R_V = 0.0091 * I - 0.0204$$

Where:

I = percent imperviousness (%)

A = catchment area (ft²)

$D_{rainfall}$ = seasonal precipitation (ft)

V_{runoff} = runoff volume (ft³)

$V_{rainfall}$ = rainfall volume (ft³)

The catchment area and the percent imperviousness are estimated from as-builts and, where possible, verified in the field during storm events. The seasonal precipitation data comes from nearby rain gauges. These rain gauges are comprised of:

- Caltrans rain gauge installed near monitoring site
- Mesowest Rain Gauge Station TERC1
- Newport Beach Station 3L3
- Weather Underground Rain Gauge Station KCAGUALA5
- Weather Underground Rain Gauge Station KCATHESE2
- Weather Underground Rain Gauge Station KCAMOSSB3
- Weather Underground Rain Gauge Station KCACARME19

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Table P-1: 2016–2017 Seasonal Runoff Volume Estimates for ASBS Sites

Site ID	Site Name	Route, County	Latitude	Longitude	Diameter	Estimated Annual Runoff Volume (ft ³)
ASBS 5						
1-325	SAU019A	Highway 1, Mendocino County	38.86067	-123.6528	Outfall, 18”–36”	-
1-326	SAU020A	Highway 1, Mendocino County	38.85916	-123.65273	Outfall, 18”–36”	-
1-327	SAU015	Highway 1, Mendocino County	38.85612	-123.65178	Outfall, 18”–36”	-
1-328	SAU014	Highway 1, Mendocino County	38.8551	-123.6517	Outfall, 18”–36”	-
1-329	SAU013A	Highway 1, Mendocino County	38.85451	-123.6514	Outfall, 18”–36”	-
1-330	SAU011A	Highway 1, Mendocino County	38.8527	-123.64853	Outfall, 18”–36”	-
1-331	SAU008	Highway 1, Mendocino County	38.85202	-123.64821	Outfall, Coupled	-
1-334	SAU009A	Highway 1, Mendocino County	38.85254	-123.64809	Outfall, 18”–36”	-
1-335	SAU006A	Highway 1, Mendocino County	38.85186	-123.64777	Outfall, 18”–36”	-
1-337	SAU016A	Highway 1, Mendocino County	38.85849	-123.65237	Outfall, 18”–36”	-
ASBS 8						
1-317	RED014	Highway 101, Del Norte County	41.63059	-124.11296	Outfall, 18”–36”	-
1-318	RED015	Highway 101, Del Norte County	41.62928	-124.11257	Outfall, 18”–36”	-
1-320	RED017A	Highway 101, Del Norte County	41.61195	-124.10571	Outfall, 18”–36”	-
1-321	RED023	Highway 101, Del Norte County	41.60527	-124.1017	Outfall, 18”–36”	-
1-322	RED028	Highway 101, Del Norte County	41.59799	-124.10066	Outfall, Coupled	-
1-324	RED027	Highway 101, Del Norte County	41.59654	-124.10127	Outfall, 18”–36”	-
1-336	RED018A	Highway 101, Del Norte County	41.613	-124.1061	Outfall, 18”–36”	-
ASBS 9						
4-341	FIT012	Highway 1, San Mateo County	37.531406	-122.51686	Outfall, Coupled	-
ASBS 15						
4-343	ANO001	Highway 1, San Mateo County	37.12167	-122.30636	Outfall, 18”–36”	-
4-344	ANO030	Highway 1, San Mateo County	37.11415	-122.30105	Outfall, 18”–36”	-
4-345	ANO033	Highway 1, San Mateo County	37.11292	-122.2989	Outfall, Coupled	-

Table P-1: 2016–2017 Seasonal Runoff Volume Estimates for ASBS Sites

Site ID	Site Name	Route, County	Latitude	Longitude	Diameter	Estimated Annual Runoff Volume (ft ³)
4-348	ANO035	Highway 1, San Mateo County	37.10787	-122.2927	Outfall, 18"–36"	-
4-353	ANO002	Highway 1, San Mateo County	37.11987	-122.30534	Outfall, 18"–36"	-
ASBS 34						
5-303	CAR006	Highway 1, Monterey County	36.52463	-121.92431	Outfall, 18"–36"	-
5-304	CAR007B	Highway 1, Monterey County	36.52499	-121.92379	Outfall, Coupled	-
ASBS 24						
7-343	MUG005	Highway 1, Ventura County	34.083896	-119.03821	Outfall, >36"	13,880
7-345	MUG010	Highway 1, Ventura County	34.070804	-119.014826	Outfall, Coupled	30,481
7-346	MUG013	Highway 1, Ventura County	34.065445	-118.993551	Outfall, 18"–36"	8,143
7-347	MUG016	Highway 1, Ventura County	34.062852	-118.987069	Outfall, <18"	7,218
7-348	MUG028	Highway 1, Ventura County	34.058928	-118.974165	Outfall, 18"–36"	7,958
7-349	MUG031	Highway 1, Ventura County	34.056265	-118.968706	Outfall, 18"–36"	11,845
7-350	MUG041	Highway 1, Ventura County	34.053461	-118.964271	Outfall, 18"–36"	12,955
7-351	MUG046	Highway 1, Ventura County	34.052112	-118.960862	Outfall, <18"	22,764
7-352	MUG048	Highway 1, Ventura County	34.051645	-118.959451	Outfall, <18"	12,770
7-353	MUG049	Highway 1, Ventura County	34.05165	-118.95943	Outfall, 18"–36"	14,422
7-354	MUG051	Highway 1, Ventura County	34.050937	-118.957316	Outfall, 18"–36"	44,083
7-355	MUG053	Highway 1, Ventura County	34.050248	-118.95539	Outfall, 18"–36"	48,395
7-356	MUG058	Highway 1, Ventura County	34.048355	-118.95042	Outfall, <18"	9,557
7-357	MUG059	Highway 1, Ventura County	34.048835	-118.9515	Outfall, 18"–36"	22,235
7-358	MUG061	Highway 1, Ventura County	34.047675	-118.94834	Outfall, <18"	7,217
7-359	MUG066	Highway 1, Los Angeles County	34.04714	-118.924654	Outfall, 18"–36"	33,787
7-360	MUG070	Highway 1, Los Angeles County	34.045864	-118.93197	Outfall, <18"	19,617
7-361	MUG073	Highway 1, Los Angeles County	34.046418	-118.922723	Outfall, <18"	12,873
7-362	MUG077	Highway 1, Los Angeles County	34.045197	-118.934452	Outfall, <18"	1,851
7-363	MUG078	Highway 1, Los Angeles County	34.045431	-118.934358	Outfall, <18"	16,384

Table P-1: 2016–2017 Seasonal Runoff Volume Estimates for ASBS Sites

Site ID	Site Name	Route, County	Latitude	Longitude	Diameter	Estimated Annual Runoff Volume (ft ³)
7-364	MUG135	Highway 1, Los Angeles County	34.041983	-118.897426	Outfall, 18"–36"	50,634
7-365	MUG147	Highway 1, Los Angeles County	34.041553	-118.894154	Outfall, <18"	42,244
7-366	MUG150	Highway 1, Los Angeles County	34.040872	-118.889212	Outfall, <18"	45,296
7-367	MUG187	Highway 1, Los Angeles County	34.039285	-118.869505	Outfall, <18"	182,378
7-368	MUG283	Highway 1, Los Angeles County	34.02589	-118.765915	Outfall, >36"	26,344
7-370	MUG346	Highway 1, Los Angeles County	34.02508	-118.783588	Outfall, <18"	18,005
7-371	MUG355	Highway 1, Los Angeles County	34.02082	-118.829696	Outfall, 18"–36"	94,029
7-372	SAD0950	Highway 1, Los Angeles County	34.02699	-118.83855	Outfall, 18"–36"	84,565
7-373	SAD0960	Highway 1, Los Angeles County	34.02302	-118.8375	Outfall, 18"–36"	62,424
7-374	SAD0970	Highway 1, Los Angeles County	34.025359	-118.836458	Outfall, 18"–36"	56,969
7-375	SAD0980	Highway 1, Los Angeles County	34.024387	-118.834798	Outfall, >36"	59,038
7-376	SAD0990	Highway 1, Los Angeles County	34.02302	-118.832672	Outfall, >36"	49,559
7-377	SAD1000	Highway 1, Los Angeles County	34.021265	-118.830324	Outfall, 18"–36"	38,591
7-378	SAD1040	Highway 1, Los Angeles County	34.01748	-118.82566	Outfall, 18"–36"	63,109
7-379	SAD1050	Highway 1, Los Angeles County	34.017	-118.82492	Outfall, 18"–36"	103,312
7-380	SAD1060	Highway 1, Los Angeles County	34.01559	-118.82254	Outfall, >36"	59,213
7-381	SAD1030	Highway 1, Los Angeles County	34.018711	-118.827049	Outfall, 18"–36"	60,270
7-383	MUG318	Highway 1, Los Angeles County	34.023879	-118.834316	Outfall, 18"–36"	32,969
7-384	ALT004	Highway 1, Ventura County	34.08609	-119.059097	Outfall, 18"–36"	7,179
7-385	ALT005	Highway 1, Ventura County	34.085415	-119.054291	Outfall, <18"	20,486
7-386	ALT006	Highway 1, Ventura County	34.085361	-119.048653	Outfall, <18"	7,529
7-387	ALT007	Highway 1, Ventura County	34.085297	-119.047752	Outfall, 18"–36"	4,552
7-388	ALT008	Highway 1, Ventura County	34.062325	-118.985931	Outfall, <18"	5,778
7-389	ALT009	Highway 1, Ventura County	34.059978	-118.975975	Outfall, <18"	4,027
7-390	ALT010	Highway 1, Ventura County	34.047873	-118.948184	Outfall, <18"	1,110
7-391	ALT011	Highway 1, Los Angeles County	34.045355	-118.939404	Outfall, <18"	17,621

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Site ID	Site Name	Route, County	Latitude	Longitude	Diameter	Estimated Annual Runoff Volume (ft ³)
7-393	ALT017	Highway 1, Los Angeles County	34.025805	-118.777059	Outfall, 18"–36"	21,118
ASBS 33						
12-350	IRV007	Highway 1, Orange County	33.5645	-117.828167	Outfall, Coupled	-
12-352	IRV002	Highway 1, Orange County	33.560705	-117.82148	Outfall, >36"	-
12-353	IRV009	Highway 1, Orange County	33.5653	-117.8312	Outfall, >36"	-
12-354	IRV020	Highway 1, Orange County	33.574016	-117.840233	Outfall, >36"	-
12-358	IRV001	Highway 1, Orange County	33.558	-117.81858	Outfall, 18"–36"	-