

# DPH-14 Report on Point Classification

The USGS Lidar Base Specification Version 2.1 states: "The minimum, required classification scheme for lidar data is found in table 5. The following requirements apply to point classification:

- All points that fall within the minimum classification scheme (table 5) and not flagged as withheld shall be properly classified.
- Additional classes may be used on specific projects.
- Accuracy of point classification into classes beyond the minimum scheme (table 5) will not be assessed by the USGS, as documented in metadata.
- Assessing and verifying accuracy of point classification into classes beyond the minimum scheme will be the responsibility of the partner requesting the additional classes.
- No points in the classified LAS deliverable may remain assigned to Class 0, unless these points are flagged as withheld.
- Points classified as water will only be checked when associated with a breakline.
- If it is necessary to identify overage points in overlap areas, the overage points shall be identified using the overlap bit flag as defined in LAS Specification Version 1.2-R13 (ASPRS, 2011).  
classified.
- No classification code may be used to identify points as overage points.
- Model key points, if calculated, shall be identified using the key point bit flag as defined in LAS specification version 1.4-R13 (ASPRS, 2011). Model key points may, in addition, be identified using class 8 at the discretion of the data producer."

**Table 5. Minimum light detection and ranging data classification scheme.**

Code	Description
1	Processed, but unclassified
2	Bare earth
7	Low noise
9	Water
17	Bridge deck
18	High noise
20	Ignored ground (typically breakline proximity)
21	Snow (if present and identifiable)
22	Temporal exclusion (typically nonfavored data in intertidal zones)

The purpose of this section is to report total numbers of points for each class within the LAS files.

# DPH-14 Report on Point Classification - Class Totals

The purpose of this section is to list the number of points in each classification so the user can determine if any points exist in unintended classes or contain incorrect bit flags.

Class	Total	MKP	WH	Class	Total	MKP	WH	Class	Total	MKP	WH	Class	Total	MKP	WH
0	00	00	00	64	00	00	00	128	00	00	00	192	00	00	00
1	2,726,137,696	00	666,854	65	00	00	00	129	00	00	00	193	00	00	00
2	32,405,053,471	00	00	66	00	00	00	130	00	00	00	194	00	00	00
3	00	00	00	67	00	00	00	131	00	00	00	195	00	00	00
4	00	00	00	68	00	00	00	132	00	00	00	196	00	00	00
5	00	00	00	69	00	00	00	133	00	00	00	197	00	00	00
6	00	00	00	70	00	00	00	134	00	00	00	198	00	00	00
7	98,402	00	98,402	71	00	00	00	135	00	00	00	199	00	00	00
8	00	00	00	72	00	00	00	136	00	00	00	200	00	00	00
9	437,402,867	00	00	73	00	00	00	137	00	00	00	201	00	00	00
10	00	00	00	74	00	00	00	138	00	00	00	202	00	00	00
11	00	00	00	75	00	00	00	139	00	00	00	203	00	00	00
12	00	00	00	76	00	00	00	140	00	00	00	204	00	00	00
13	00	00	00	77	00	00	00	141	00	00	00	205	00	00	00
14	00	00	00	78	00	00	00	142	00	00	00	206	00	00	00
15	00	00	00	79	00	00	00	143	00	00	00	207	00	00	00
16	00	00	00	80	00	00	00	144	00	00	00	208	00	00	00
17	54,777	00	00	81	00	00	00	145	00	00	00	209	00	00	00
18	51,555	00	51,555	82	00	00	00	146	00	00	00	210	00	00	00
19	00	00	00	83	00	00	00	147	00	00	00	211	00	00	00
20	11,766,851	00	00	84	00	00	00	148	00	00	00	212	00	00	00
21	00	00	00	85	00	00	00	149	00	00	00	213	00	00	00
22	00	00	00	86	00	00	00	150	00	00	00	214	00	00	00
23	00	00	00	87	00	00	00	151	00	00	00	215	00	00	00
24	00	00	00	88	00	00	00	152	00	00	00	216	00	00	00
25	00	00	00	89	00	00	00	153	00	00	00	217	00	00	00
26	00	00	00	90	00	00	00	154	00	00	00	218	00	00	00
27	00	00	00	91	00	00	00	155	00	00	00	219	00	00	00
28	00	00	00	92	00	00	00	156	00	00	00	220	00	00	00
29	00	00	00	93	00	00	00	157	00	00	00	221	00	00	00
30	00	00	00	94	00	00	00	158	00	00	00	222	00	00	00
31	00	00	00	95	00	00	00	159	00	00	00	223	00	00	00
32	00	00	00	96	00	00	00	160	00	00	00	224	00	00	00
33	00	00	00	97	00	00	00	161	00	00	00	225	00	00	00
34	00	00	00	98	00	00	00	162	00	00	00	226	00	00	00
35	00	00	00	99	00	00	00	163	00	00	00	227	00	00	00
36	00	00	00	100	00	00	00	164	00	00	00	228	00	00	00
37	00	00	00	101	00	00	00	165	00	00	00	229	00	00	00
38	00	00	00	102	00	00	00	166	00	00	00	230	00	00	00
39	00	00	00	103	00	00	00	167	00	00	00	231	00	00	00
40	00	00	00	104	00	00	00	168	00	00	00	232	00	00	00
41	00	00	00	105	00	00	00	169	00	00	00	233	00	00	00
42	00	00	00	106	00	00	00	170	00	00	00	234	00	00	00
43	00	00	00	107	00	00	00	171	00	00	00	235	00	00	00
44	00	00	00	108	00	00	00	172	00	00	00	236	00	00	00
45	00	00	00	109	00	00	00	173	00	00	00	237	00	00	00
46	00	00	00	110	00	00	00	174	00	00	00	238	00	00	00
47	00	00	00	111	00	00	00	175	00	00	00	239	00	00	00
48	00	00	00	112	00	00	00	176	00	00	00	240	00	00	00
49	00	00	00	113	00	00	00	177	00	00	00	241	00	00	00
50	00	00	00	114	00	00	00	178	00	00	00	242	00	00	00
51	00	00	00	115	00	00	00	179	00	00	00	243	00	00	00
52	00	00	00	116	00	00	00	180	00	00	00	244	00	00	00
53	00	00	00	117	00	00	00	181	00	00	00	245	00	00	00
54	00	00	00	118	00	00	00	182	00	00	00	246	00	00	00
55	00	00	00	119	00	00	00	183	00	00	00	247	00	00	00
56	00	00	00	120	00	00	00	184	00	00	00	248	00	00	00
57	00	00	00	121	00	00	00	185	00	00	00	249	00	00	00
58	00	00	00	122	00	00	00	186	00	00	00	250	00	00	00
59	00	00	00	123	00	00	00	187	00	00	00	251	00	00	00
60	00	00	00	124	00	00	00	188	00	00	00	252	00	00	00
61	00	00	00	125	00	00	00	189	00	00	00	253	00	00	00
62	00	00	00	126	00	00	00	190	00	00	00	254	00	00	00
63	00	00	00	127	00	00	00	191	00	00	00	255	00	00	00

**Bold** – point counts in 'Minimum classified point cloud classification scheme' (see table on previous page)

**##** – point counts in Classes beyond the minimum

**##** – disallowed point counts or bit flags per USGS spec

**##** – not all Class 0, Class 7, and Class 18 points flagged as Withheld