

## Appendix B-Passenger demand & Train information

**Table B.1 Hour-dependent passenger demand**

OD	Period																	
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1-2	25	29	38	40	64	56	47	48	46	39	40	44	50	30	42	36	15	20
1-3	28	48	57	32	51	64	40	45	30	56	42	68	46	34	35	32	38	30
1-4	32	40	38	40	52	61	24	35	37	30	44	48	34	20	24	37	32	20
1-5	19	28	28	33	34	33	44	48	34	43	41	42	47	32	22	42	32	18
1-6	17	51	43	72	70	91	65	36	56	35	56	64	86	71	48	56	41	64
1-7	17	32	30	54	46	51	48	36	31	39	56	45	75	28	48	46	22	40
1-8	24	20	44	41	44	42	45	36	30	48	32	61	60	25	28	30	28	43
1-9	35	51	60	60	81	51	34	53	40	27	51	58	46	48	58	20	20	20
1-10	28	17	25	45	48	60	24	22	29	35	28	61	52	42	48	38	17	14
1-11	28	38	38	30	36	55	29	32	38	34	25	44	60	32	34	37	25	28
1-12	20	16	37	40	60	58	27	38	38	40	25	40	32	30	36	38	36	32
1-13	12	17	36	44	58	48	25	44	32	42	25	47	43	28	33	38	13	41
1-14	28	40	37	24	64	34	43	42	22	22	35	42	54	30	47	41	21	47
1-15	28	29	32	22	53	62	42	28	42	39	43	44	45	25	44	34	0	35
1-16	13	24	30	57	66	53	52	60	58	34	36	76	60	35	38	51	30	44
1-17	48	48	65	70	57	86	63	44	42	52	58	54	92	34	57	51	54	28
2-3	13	0	15	12	32	35	22	17	25	15	25	26	31	28	31	23	0	22
2-4	0	0	15	12	13	20	0	0	12	12	17	22	16	0	10	0	0	0
2-5	0	0	0	12	22	16	0	17	0	15	16	15	22	0	0	13	0	0
2-6	0	28	22	29	58	44	30	45	29	32	42	54	60	48	32	29	28	14
2-7	16	25	17	12	26	31	28	22	29	22	22	35	20	15	25	13	10	27
2-8	0	13	0	0	20	17	12	0	0	0	17	0	12	0	12	14	0	0
2-9	12	16	16	22	28	33	18	16	22	12	12	24	24	16	17	12	21	17
2-10	0	15	15	0	22	15	0	14	0	0	17	17	13	0	12	0	0	0
2-11	11	0	0	0	22	13	0	0	11	16	0	19	20	0	0	0	0	15
2-12	0	0	0	12	0	17	0	17	12	14	0	16	17	17	0	0	0	0
2-13	0	0	0	0	17	12	11	0	0	15	0	13	12	0	12	0	0	12
2-14	0	0	0	0	19	13	12	0	0	0	12	20	22	0	16	0	0	0
2-15	0	0	0	12	12	19	12	16	17	0	10	16	13	12	0	0	0	0
2-16	20	12	13	21	23	32	19	30	18	24	20	35	38	20	25	27	20	20
2-17	32	38	33	25	41	44	21	38	32	30	24	60	63	28	38	36	17	35
3-4	13	16	12	12	29	35	19	32	17	22	19	23	31	25	19	23	12	10
3-5	0	27	16	17	36	40	22	17	17	30	12	30	28	17	31	0	22	24
3-6	16	22	53	60	79	64	58	54	46	51	38	64	75	34	44	28	25	30
3-7	19	25	28	36	33	48	35	36	20	38	42	45	32	34	20	35	16	20
3-8	12	0	25	31	38	25	22	13	12	16	24	29	28	12	21	16	0	0
3-9	27	28	30	38	38	32	19	42	29	32	42	30	33	33	24	24	0	16
3-10	18	19	20	29	22	32	30	25	22	28	25	32	28	18	12	10	0	22
3-11	12	25	28	28	34	22	12	20	22	23	32	28	25	32	15	25	12	24

OD	Period																	
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
3-12	22	16	12	25	27	35	19	17	13	19	20	40	35	26	32	18	0	24
3-13	10	25	16	20	25	30	31	25	15	19	18	22	32	28	17	12	20	22
3-14	17	16	25	28	38	36	25	27	25	27	22	25	22	16	25	25	0	0
3-15	0	24	22	25	35	36	25	28	22	16	24	30	25	32	20	20	0	12
3-16	0	32	38	24	33	48	35	16	17	24	36	32	40	33	24	20	31	32
3-17	28	28	30	54	68	56	32	28	46	44	54	73	64	44	41	44	20	34
4-5	12	0	15	15	0	22	12	10	13	17	10	19	17	0	0	12	0	0
4-6	20	30	34	47	44	37	48	48	34	20	21	48	50	25	0	30	0	41
4-7	18	16	12	28	29	20	23	17	12	28	22	32	24	21	0	15	16	0
4-8	0	0	0	0	12	12	13	0	17	0	17	0	22	0	0	13	0	0
4-9	0	15	25	25	39	22	14	25	26	14	29	37	37	16	0	23	23	20
4-10	0	0	0	0	20	20	12	0	0	0	16	13	17	12	0	0	0	0
4-11	0	0	0	0	22	21	0	14	0	15	0	16	22	17	0	0	0	0
4-12	12	0	0	16	20	0	17	11	0	12	0	17	22	12	0	0	0	0
4-13	0	0	16	15	12	12	0	0	0	12	16	20	23	13	0	0	10	0
4-14	0	0	0	0	17	19	0	17	17	0	0	13	24	16	0	12	0	0
4-15	12	12	0	12	19	22	12	10	17	14	0	12	12	10	0	0	0	0
4-16	22	25	19	22	35	32	15	13	20	24	30	38	28	30	0	14	14	28
4-17	29	28	24	48	32	53	28	28	34	29	22	55	53	25	0	39	15	36
5-6	24	41	22	44	52	54	41	48	44	44	46	60	45	42	0	32	17	16
5-7	0	16	20	20	35	25	32	12	12	24	13	40	28	25	0	18	20	25
5-8	0	0	0	17	12	12	17	12	16	0	0	19	17	0	0	0	0	0
5-9	0	26	14	17	32	38	22	16	25	28	22	37	40	22	0	17	0	0
5-10	0	0	12	13	16	17	0	0	0	17	0	21	15	0	0	0	0	16
5-11	0	0	12	16	13	13	13	17	0	0	17	0	22	0	0	0	0	0
5-12	0	0	0	13	14	12	12	17	16	15	0	24	22	0	0	13	0	12
5-13	0	0	17	0	24	21	0	12	13	0	10	18	22	12	0	0	0	0
5-14	0	12	0	0	12	22	0	16	0	0	0	22	20	12	0	0	0	0
5-15	10	12	0	0	19	16	12	15	12	0	12	17	17	0	0	10	0	0
5-16	20	20	28	29	32	32	15	18	28	16	30	38	22	12	0	20	17	13
5-17	30	38	28	44	52	55	27	44	47	41	28	64	64	21	0	20	13	44
6-7	28	34	51	28	76	44	54	28	60	56	51	68	48	40	53	0	34	22
6-8	34	28	38	40	58	39	27	24	42	34	28	32	60	40	32	0	12	12
6-9	20	49	60	34	51	61	44	37	31	54	53	54	56	27	43	0	20	40
6-10	33	20	38	28	48	33	25	45	28	28	48	40	38	38	36	0	28	43
6-11	34	30	40	27	47	32	45	32	39	42	44	46	48	48	29	0	20	20
6-12	11	24	31	20	34	32	37	22	38	25	24	38	48	37	32	0	17	32
6-13	16	16	24	48	35	34	33	28	20	24	33	50	57	31	34	0	12	24
6-14	12	42	36	24	60	64	39	48	32	33	24	64	48	42	45	0	17	24
6-15	36	25	47	35	32	53	45	42	37	37	45	56	64	25	48	0	17	44
6-16	17	34	44	28	64	48	31	35	32	60	51	49	67	36	51	0	46	43
6-17	25	38	48	38	79	77	54	32	64	54	38	86	60	73	60	0	24	56

OD	Period																	
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
7-8	12	17	30	13	26	27	22	14	25	25	24	22	30	16	14	0	20	20
7-9	19	24	36	21	44	42	28	28	22	20	34	35	52	24	24	0	0	40
7-10	0	17	16	13	34	30	12	19	31	20	31	32	28	18	17	0	20	14
7-11	0	17	26	20	40	28	16	25	30	32	28	33	36	25	22	0	10	26
7-12	15	22	16	20	24	22	13	32	14	13	25	32	39	14	28	0	0	16
7-13	11	16	17	30	32	25	12	15	25	12	16	20	40	25	19	0	0	22
7-14	20	28	15	19	31	32	17	16	25	20	17	35	24	28	17	0	11	0
7-15	18	0	19	20	32	34	12	18	15	17	32	20	36	29	28	0	19	14
7-16	25	36	32	32	48	40	22	40	31	25	40	51	40	20	20	0	12	14
7-17	38	51	58	38	49	56	39	31	37	53	56	71	79	52	52	0	16	52
8-9	20	12	24	12	35	36	21	28	12	12	16	22	32	15	22	17	0	17
8-10	0	12	0	12	20	22	13	0	17	0	15	22	12	15	0	0	0	0
8-11	0	0	16	12	12	0	10	14	10	17	0	19	12	16	0	0	0	0
8-12	12	12	16	0	13	22	11	12	17	0	0	0	0	12	0	0	0	0
8-13	0	0	0	14	22	16	0	16	0	0	12	19	22	0	12	13	0	0
8-14	0	0	17	0	12	13	12	0	16	16	0	15	20	16	16	0	0	0
8-15	0	0	0	12	15	19	12	0	12	16	16	12	20	12	11	0	0	12
8-16	0	16	28	22	30	30	12	16	13	22	21	38	36	15	12	16	10	16
8-17	24	39	22	22	54	36	33	28	32	38	40	38	35	36	30	22	14	13
9-10	16	25	17	13	36	25	32	26	12	16	18	22	36	32	25	17	0	0
9-11	0	21	21	20	21	20	16	30	12	16	30	40	38	17	12	12	0	0
9-12	20	25	12	28	22	34	31	28	30	32	30	40	36	20	27	17	0	0
9-13	21	19	28	30	37	21	24	30	25	12	22	25	35	12	28	10	0	0
9-14	0	22	30	21	35	38	20	18	13	24	20	26	36	25	12	19	0	0
9-15	0	0	13	20	36	22	13	17	30	12	17	35	27	30	24	13	0	0
9-16	17	32	38	19	32	44	42	24	40	27	20	28	33	42	17	31	0	0
9-17	32	22	54	52	76	42	52	56	52	52	51	80	71	25	31	38	0	0
10-11	0	0	10	12	13	12	0	17	12	0	0	17	19	13	16	0	0	0
10-12	0	0	15	0	17	0	16	0	0	0	0	0	12	0	0	10	0	0
10-13	0	12	17	0	16	16	0	0	0	16	16	20	17	0	12	0	0	0
10-14	0	0	0	16	21	22	12	0	0	13	0	21	12	0	0	0	0	0
10-15	0	0	0	17	15	22	0	12	16	0	12	18	17	0	17	12	0	0
10-16	0	18	23	20	23	22	30	27	15	25	15	32	26	20	31	13	0	0
10-17	33	39	38	41	62	42	27	27	40	32	44	35	47	35	37	42	0	0
11-12	0	0	0	0	0	12	17	0	0	0	15	22	0	16	0	13	0	0
11-13	0	0	0	16	22	12	12	0	16	0	0	12	20	16	12	0	0	0
11-14	10	15	0	12	12	20	16	0	12	0	16	21	22	12	0	0	0	0
11-15	0	10	12	0	15	0	16	17	14	17	16	20	12	0	12	0	12	0
11-16	0	20	16	13	21	39	28	22	13	24	16	28	20	13	12	17	0	0
11-17	13	28	44	36	48	62	25	24	24	33	32	56	52	44	22	24	33	0
12-13	0	0	10	0	17	17	0	0	0	0	11	12	20	0	16	0	0	0
12-14	0	0	0	0	19	16	16	15	17	0	12	15	16	0	0	12	0	0

OD	Period																	
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
12-15	0	0	0	13	24	0	0	0	16	15	17	22	15	10	16	12	0	0
12-16	13	0	25	17	28	25	12	28	17	22	27	33	30	22	22	20	16	0
12-17	25	22	24	42	51	50	47	40	33	32	38	60	47	40	32	20	34	0
13-14	0	0	0	13	12	18	12	12	11	12	12	16	17	0	13	0	0	0
13-15	12	15	16	0	19	15	15	0	16	0	17	22	13	0	0	15	0	0
13-16	20	25	12	25	24	35	17	22	26	14	24	32	25	19	27	12	17	0
13-17	12	17	31	24	60	45	44	30	25	36	44	47	38	44	38	28	16	0
14-15	12	0	0	0	16	16	13	10	13	14	13	19	20	0	13	0	0	0
14-16	22	11	17	18	29	24	32	29	19	17	31	38	36	12	15	0	0	0
14-17	36	28	35	47	53	58	28	47	22	31	36	38	33	32	40	17	19	0
15-16	17	25	25	22	34	34	21	17	20	12	12	40	38	30	17	17	0	0
15-17	28	40	21	38	63	38	45	32	25	24	27	41	38	25	27	30	30	0
16-17	16	48	45	45	76	48	42	40	51	43	51	71	80	32	56	25	22	25

**Table B.2 Train information**

Train ID	Earliest departure times	Latest departure times	Starting station	Ending station	Train capacity
0	2	22	Changsha	Guangzhou South	500
1	5	25	Wuhan	Guangzhou South	1000
2	13	33	Wuhan	Guangzhou South	1000
3	20	40	Changsha	Guangzhou South	500
4	26	46	Wuhan	Changsha	500
5	30	50	Changsha	Guangzhou South	500
6	36	56	Changsha	Guangzhou South	500
7	42	62	Wuhan	Guangzhou South	1000
8	48	68	Changsha	Guangzhou South	500
9	53	73	Changsha	Guangzhou South	500
10	57	77	Wuhan	Guangzhou South	1000
11	69	89	Changsha	Guangzhou South	500
12	75	95	Changsha	Guangzhou South	500
13	80	100	Changsha	Guangzhou South	500
14	89	109	Changsha	Guangzhou South	500
15	92	112	Wuhan	Guangzhou South	1000
16	140	160	Wuhan	Guangzhou South	1000
17	140	160	Changsha	Guangzhou South	500
18	145	165	Wuhan	Guangzhou South	1000
19	146	166	Changsha	Guangzhou South	500
20	157	177	Changsha	Guangzhou South	500
21	164	184	Wuhan	Guangzhou South	1000
22	170	190	Wuhan	Guangzhou South	1000
23	176	196	Changsha	Guangzhou South	500
24	185	205	Wuhan	Guangzhou South	1000
25	192	212	Changsha	Guangzhou South	500
26	198	218	Wuhan	Guangzhou South	1000
27	204	224	Changsha	Guangzhou South	500
28	207	227	Wuhan	Guangzhou South	1000
29	210	230	Changsha	Guangzhou South	500
30	222	242	Wuhan	Guangzhou South	1000
31	227	247	Wuhan	Guangzhou South	1000
32	235	255	Changsha	Guangzhou South	500
33	245	265	Wuhan	Changsha	500
34	250	270	Changsha	Guangzhou South	500
35	260	280	Changsha	Guangzhou South	500
36	266	286	Wuhan	Changsha	500
37	272	292	Wuhan	Guangzhou South	1000
38	278	298	Wuhan	Changsha	500
39	286	306	Wuhan	Guangzhou South	1000
40	294	314	Wuhan	Guangzhou South	1000

Train ID	Earliest departure times	Latest departure times	Starting station	Ending station	Train capacity
41	296	316	Changsha	Guangzhou South	500
42	299	319	Wuhan	Changsha	500
43	305	325	Wuhan	Guangzhou South	1000
44	310	330	Wuhan	Changsha	500
45	315	335	Changsha	Guangzhou South	500
46	326	346	Wuhan	Guangzhou South	1000
47	335	355	Changsha	Guangzhou South	500
48	340	360	Wuhan	Changsha	500
49	345	365	Wuhan	Guangzhou South	1000
50	347	367	Changsha	Guangzhou South	500
51	352	372	Changsha	Guangzhou South	500
52	353	373	Wuhan	Changsha	500
53	357	377	Changsha	Guangzhou South	500
54	358	378	Wuhan	Changsha	500
55	362	382	Changsha	Guangzhou South	500
56	367	387	Wuhan	Changsha	500
57	376	396	Wuhan	Guangzhou South	1000
58	378	398	Changsha	Guangzhou South	500
59	394	414	Wuhan	Guangzhou South	1000
60	404	424	Wuhan	Changsha	500
61	409	429	Wuhan	Changsha	500
62	410	430	Changsha	Guangzhou South	500
63	414	434	Wuhan	Changsha	500
64	420	440	Wuhan	Guangzhou South	1000
65	421	441	Changsha	Guangzhou South	500
66	425	445	Wuhan	Changsha	500
67	436	456	Wuhan	Guangzhou South	1000
68	443	463	Wuhan	Guangzhou South	1000
69	447	467	Changsha	Guangzhou South	500
70	448	468	Wuhan	Changsha	500
71	460	480	Wuhan	Guangzhou South	1000
72	474	494	Changsha	Guangzhou South	500
73	479	499	Wuhan	Guangzhou South	1000
74	484	504	Wuhan	Changsha	500
75	489	509	Wuhan	Changsha	500
76	490	510	Changsha	Guangzhou South	500
77	494	514	Wuhan	Guangzhou South	1000
78	500	520	Wuhan	Changsha	500
79	500	520	Changsha	Guangzhou South	500
80	505	525	Wuhan	Guangzhou South	1000
81	511	531	Wuhan	Guangzhou South	1000
82	529	549	Wuhan	Guangzhou South	1000

Train ID	Earliest departure times	Latest departure times	Starting station	Ending station	Train capacity
83	530	550	Changsha	Guangzhou South	500
84	540	560	Changsha	Guangzhou South	500
85	550	570	Wuhan	Guangzhou South	1000
86	555	575	Changsha	Guangzhou South	500
87	560	580	Wuhan	Guangzhou South	1000
88	572	592	Changsha	Guangzhou South	500
89	581	601	Wuhan	Guangzhou South	1000
90	586	606	Wuhan	Guangzhou South	1000
91	591	611	Wuhan	Guangzhou South	1000
92	603	623	Wuhan	Guangzhou South	1000
93	605	625	Changsha	Guangzhou South	500
94	608	628	Wuhan	Guangzhou South	1000
95	613	633	Wuhan	Guangzhou South	1000
96	618	638	Wuhan	Guangzhou South	1000
97	624	644	Wuhan	Guangzhou South	1000
98	629	649	Wuhan	Changsha	500
99	637	657	Wuhan	Changsha	500
100	643	663	Wuhan	Changsha	500
101	644	664	Changsha	Guangzhou South	500
102	648	668	Wuhan	Guangzhou South	1000
103	660	680	Wuhan	Guangzhou South	1000
104	665	685	Wuhan	Guangzhou South	1000
105	667	687	Changsha	Guangzhou South	500
106	677	697	Wuhan	Guangzhou South	1000
107	683	703	Wuhan	Changsha	500
108	688	708	Wuhan	Guangzhou South	1000
109	695	715	Wuhan	Guangzhou South	1000
110	701	721	Wuhan	Guangzhou South	1000
111	708	728	Wuhan	Guangzhou South	1000
112	680	700	Changsha	Guangzhou South	500
113	718	738	Wuhan	Guangzhou South	1000
114	724	744	Wuhan	Guangzhou South	1000
115	732	752	Wuhan	Changsha	500
116	740	760	Changsha	Guangzhou South	500
117	775	795	Changsha	Guangzhou South	500
118	745	765	Wuhan	Guangzhou South	1000
119	750	770	Wuhan	Guangzhou South	1000
120	790	810	Changsha	Guangzhou South	500
121	789	809	Wuhan	Changsha	500
122	799	819	Wuhan	Changsha	500
123	820	845	Changsha	Guangzhou South	500
124	828	848	Changsha	Guangzhou South	500

Train ID	Earliest departure times	Latest departure times	Starting station	Ending station	Train capacity
125	850	870	Changsha	Guangzhou South	500
126	843	863	Wuhan	Changsha	500
127	860	880	Changsha	Guangzhou South	500
128	859	879	Wuhan	Changsha	500
129	670	690	Changsha	Guangzhou South	500
130	865	885	Wuhan	Changsha	500
131	879	899	Wuhan	Changsha	500