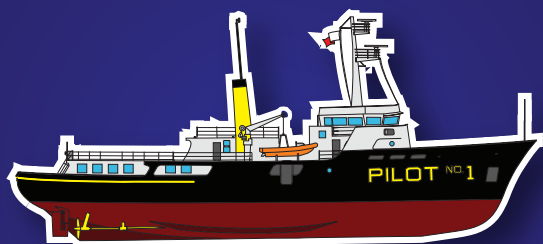


BATTERY



SANDY HOOK PILOTS

2018
TIDE BOOK

The Battery— January 2018

Times and Heights of High and Low Waters

1 00:58 -0.9 07:01 5.8 M 13:50 -1.0 19:36 4.8	9 02:09 4.5 08:30 0.4 Tu 14:23 4.1 20:57 0.0	17 02:14 0.0 08:20 4.8 W 14:51 -0.3 ● 20:47 4.0	25 01:32 4.3 08:41 0.5 Th 14:01 4.0 20:47 0.1
2 01:52 -1.0 07:53 5.9 Tu 14:41 -1.2 ○ 20:30 4.9	10 03:03 4.4 09:31 0.4 W 15:20 3.8 21:49 0.1	18 02:53 0.0 08:55 4.8 Th 15:28 -0.3 21:23 4.0	26 02:33 4.5 09:47 0.3 F 15:10 3.9 21:51 -0.1
3 02:45 -1.0 08:46 5.8 W 15:32 -1.2 21:26 4.8	11 03:59 4.4 10:25 0.3 Th 16:19 3.7 22:37 0.1	19 03:30 0.1 09:28 4.7 F 16:04 -0.2 21:58 3.9	27 03:41 4.7 10:47 -0.1 Sa 16:23 4.1 22:50 -0.3
4 03:37 -0.9 09:42 5.6 Th 16:22 -1.1 22:25 4.8	12 04:53 4.5 11:15 0.2 F 17:15 3.8 23:23 0.1	20 04:04 0.1 10:01 4.6 Sa 16:38 -0.2 22:32 3.9	28 04:51 5.0 11:44 -0.4 Su 17:31 4.3 23:47 -0.6
5 04:29 -0.7 10:40 5.4 F 17:13 -0.9 23:24 4.7	13 05:42 4.6 12:02 0.1 Sa 18:05 3.8	21 04:38 0.3 10:37 4.4 Su 17:10 -0.1 23:09 4.0	29 05:54 5.3 12:39 -0.8 M 18:31 4.6
6 05:23 -0.4 11:38 5.0 Sa 18:06 -0.6	14 00:08 0.1 06:26 4.7 Su 12:47 -0.1 18:50 3.9	22 05:15 0.4 11:19 4.3 M 17:46 0.0 23:51 4.1	30 00:44 -0.8 06:50 5.6 Tu 13:32 -1.0 19:25 4.8
7 00:20 4.6 06:22 0.0 Su 12:34 4.7 19:02 -0.3	15 00:51 0.1 07:07 4.8 M 13:30 -0.2 19:31 4.0	23 06:04 0.5 12:07 4.2 Tu 18:32 0.1	31 01:38 -1.0 07:43 5.7 W 14:23 -1.2 ○ 20:17 5.0
8 01:15 4.5 07:26 0.2 M 13:28 4.4 ● 20:00 -0.1	16 01:34 0.0 07:45 4.8 Tu 14:12 -0.3 20:10 4.0	24 00:39 4.2 07:21 0.6 W 13:01 4.1 ● 19:36 0.2	

East River Constant
North River Constant

HWS Batt. + 1:30
HWS Batt. + 2:20

LWS Batt. + 1:20
LWS Batt. + 2:40

East River slack water lasts from 4 to 8 minutes. North River about 35 minutes. North River is running flood 15 feet below the surface 1 hour before turning from ebb to flood at surface. High water slack occurs in the Narrows 15 minutes before the H.W.S. East River and low water slack occurs about 20 minutes before the L.W.S. North River.

The Battery— February 2018

Times and Heights of High and Low Waters

1 Th 02:31 -1.1 08:34 5.7 15:12 -1.3 21:09 5.0	9 F 03:18 4.2 09:53 0.6 15:44 3.6 22:04 0.6	17 Sa 03:09 -0.1 09:03 4.8 15:35 -0.4 21:23 4.4	25 Su 03:21 4.7 10:29 0.0 16:11 4.1 22:35 -0.1
2 F 03:22 -1.0 09:26 5.5 15:59 -1.2 22:03 5.0	10 Sa 04:15 4.2 10:45 0.5 16:45 3.6 22:53 0.5	18 Su 03:46 -0.1 09:36 4.7 16:09 -0.3 21:55 4.4	26 M 04:37 4.9 11:26 -0.3 17:20 4.4 23:34 -0.4
3 Sa 04:11 -0.8 10:19 5.3 16:46 -0.9 22:57 4.9	11 Su 05:10 4.3 11:33 0.3 17:39 3.7 23:40 0.4	19 M 04:23 0.0 10:13 4.6 16:41 -0.2 22:33 4.5	27 Tu 05:43 5.2 12:21 -0.6 18:19 4.8
4 Su 05:01 -0.5 11:13 4.9 17:34 -0.6 23:49 4.8	12 M 06:00 4.5 12:18 0.1 18:26 3.9	20 Tu 05:03 0.1 10:57 4.5 17:16 -0.1 23:18 4.6	28 W 00:30 -0.6 06:40 5.5 13:13 -0.9 19:11 5.1
5 M 05:54 -0.1 12:05 4.6 18:24 -0.2	13 Tu 00:25 0.3 06:43 4.6 13:02 0.0 19:07 4.1	21 W 05:51 0.3 11:48 4.3 18:00 0.1	
6 Tu 00:41 4.6 06:52 0.2 12:56 4.2 19:18 0.1	14 W 01:09 0.1 07:22 4.8 13:43 -0.2 19:45 4.2	22 Th 00:09 4.6 06:59 0.4 12:44 4.1 19:02 0.2	
7 W 01:31 4.4 07:55 0.5 13:49 3.9 20:16 0.4	15 Th 01:51 0.0 07:57 4.9 14:23 -0.3 20:20 4.3	23 F 01:05 4.6 08:18 0.5 13:46 4.0 20:21 0.3	
8 Th 02:23 4.3 08:56 0.6 14:44 3.7 21:12 0.5	16 F 02:31 -0.1 08:31 4.9 15:00 -0.3 20:52 4.3	24 Sa 02:09 4.7 09:28 0.3 14:56 4.0 21:33 0.2	

East River Constant
North River Constant

HWS Batt. + 1:30
HWS Batt. + 2:20

LWS Batt. + 1:20
LWS Batt. + 2:40

East River slack water lasts from 4 to 8 minutes. North River about 35 minutes. North River is running flood 15 feet below the surface 1 hour before turning from ebb to flood at surface. High water slack occurs in the Narrows 15 minutes before the H.W.S. East River and low water slack occurs about 20 minutes before the L.W.S. North River.

TIMES ADJUSTED FOR DAYLIGHT SAVINGS TIME

The Battery— March 2018

Times and Heights of High and Low Waters

1 01:24 -0.8 07:31 5.6 Th 14:02 -1.0 20:00 5.3	9 01:40 4.3 08:17 0.8 F 14:10 3.7 ☉ 20:31 1.0	17 03:07 -0.1 09:03 5.0 Sa 15:28 -0.3 ● 21:18 4.9	25 02:57 4.8 10:10 0.3 Su 15:51 4.2 22:19 0.4
2 02:15 -0.9 08:19 5.6 F 14:49 -1.1 ○ 20:49 5.3	10 02:33 4.1 09:16 0.8 Sa 15:08 3.6 21:29 1.0	18 03:48 -0.2 09:37 5.0 Su 16:05 -0.3 21:49 5.0	26 04:10 4.8 11:11 0.1 M 17:02 4.4 23:23 0.2
3 03:04 -0.9 09:07 5.4 Sa 15:34 -0.9 21:37 5.3	11 04:32 4.1 11:10 0.7 Su 17:10 3.6 23:22 0.9	19 04:28 -0.3 10:13 4.9 M 16:40 -0.3 22:24 5.1	27 05:25 4.9 12:07 -0.2 Tu 18:08 4.7
4 03:52 -0.7 09:55 5.2 Su 16:17 -0.7 22:26 5.2	12 05:32 4.2 11:59 0.6 M 18:07 3.8	20 05:09 -0.2 10:54 4.8 Tu 17:17 -0.2 23:05 5.1	28 00:21 -0.1 06:30 5.1 W 13:00 -0.4 19:05 5.0
5 04:38 -0.4 10:45 4.9 M 17:00 -0.3 23:15 5.0	13 00:10 0.7 06:26 4.4 Tu 12:45 0.4 18:56 4.0	21 05:53 -0.1 11:43 4.6 W 17:56 0.0 23:54 5.1	29 01:16 -0.4 07:25 5.3 Th 13:50 -0.6 19:55 5.3
6 05:26 -0.1 11:35 4.5 Tu 17:44 0.1	14 00:57 0.5 07:12 4.6 W 13:28 0.2 19:38 4.3	22 06:44 0.1 12:38 4.4 Th 18:43 0.2	30 02:08 -0.5 08:14 5.4 F 14:38 -0.7 20:41 5.5
7 00:03 4.7 06:17 0.3 W 12:25 4.2 18:33 0.5	15 01:42 0.3 07:53 4.8 Th 14:10 0.0 20:14 4.5	23 00:50 5.0 07:48 0.3 F 13:38 4.3 19:47 0.4	31 02:58 -0.6 09:00 5.4 Sa 15:23 -0.7 ○ 21:25 5.6
8 00:51 4.5 07:15 0.6 Th 13:16 3.9 19:30 0.8	16 02:25 0.1 08:29 4.9 F 14:50 -0.2 20:47 4.7	24 01:50 4.9 09:01 0.4 Sa 14:42 4.2 ☾ 21:07 0.5	

East River Constant
North River Constant

HWS Batt. + 1:30
HWS Batt. + 2:20

LWS Batt. + 1:20
LWS Batt. + 2:40

East River slack water lasts from 4 to 8 minutes. North River about 35 minutes. North River is running flood 15 feet below the surface 1 hour before turning from ebb to flood at surface. High water slack occurs in the Narrows 15 minutes before the H.W.S. East River and low water slack occurs about 20 minutes before the L.W.S. North River.

TIMES ADJUSTED FOR DAYLIGHT SAVINGS TIME

The Battery— April 2018 — Eastern Standard Time

Times and Heights of High and Low Waters

1 03:46 -0.6 09:45 5.2 Su 16:06 -0.5 22:09 5.5	9 03:44 4.1 10:31 0.9 M 16:29 3.8 22:46 1.2	17 04:10 -0.4 09:52 5.0 Tu 16:15 -0.3 22:00 5.6	25 05:08 4.9 11:45 -0.1 W 17:51 5.0
2 04:31 -0.5 10:31 5.0 M 16:47 -0.3 22:53 5.4	10 04:44 4.2 11:20 0.8 Tu 17:26 4.0 23:37 1.0	18 04:55 -0.4 10:40 4.9 W 16:56 -0.2 22:46 5.6	26 00:06 0.1 06:11 5.0 Th 12:36 -0.2 18:46 5.3
3 05:15 -0.3 11:18 4.7 Tu 17:27 0.1 23:38 5.1	11 05:42 4.3 12:06 0.6 W 18:17 4.2	19 05:43 -0.3 11:35 4.7 Th 17:42 0.0 23:40 5.5	27 00:59 -0.1 07:06 5.1 F 13:24 -0.3 19:35 5.5
4 05:58 0.0 12:07 4.4 W 18:07 0.4	12 00:25 0.7 06:32 4.5 Th 12:49 0.4 19:00 4.5	20 06:35 -0.1 12:35 4.6 F 18:34 0.3	28 01:50 -0.2 07:54 5.1 Sa 14:11 -0.3 20:19 5.7
5 00:24 4.9 06:44 0.4 Th 12:56 4.2 18:49 0.8	13 01:11 0.4 07:16 4.7 F 13:31 0.2 19:37 4.8	21 00:40 5.3 07:37 0.1 Sa 13:37 4.5 19:40 0.5	29 02:39 -0.3 08:39 5.1 Su 14:55 -0.3 21:00 5.7
6 01:10 4.6 07:35 0.7 F 13:47 4.0 19:40 1.2	14 01:57 0.2 07:55 4.9 Sa 14:13 0.0 20:11 5.1	22 01:44 5.1 08:45 0.2 Su 14:39 4.5 ☉ 20:56 0.6	30 03:25 -0.3 09:23 5.0 M 15:37 -0.1 ○ 21:41 5.6
7 01:58 4.4 08:34 0.9 Sa 14:38 3.8 20:45 1.4	15 02:42 -0.1 08:32 5.0 Su 14:54 -0.2 20:44 5.4	23 02:50 5.0 09:51 0.2 M 15:44 4.6 22:06 0.5	
8 02:49 4.2 09:35 1.0 Su 15:32 3.8 ☉ 21:49 1.4	16 03:26 -0.3 09:10 5.0 M 15:34 -0.3 ● 21:20 5.5	24 03:59 4.9 10:51 0.1 Tu 16:49 4.7 23:09 0.3	

East River Constant
North River Constant

HWS Batt. + 1:30
HWS Batt. + 2:20

LWS Batt. + 1:20
LWS Batt. + 2:40

East River slack water lasts from 4 to 8 minutes. North River about 35 minutes. North River is running flood 15 feet below the surface 1 hour before turning from ebb to flood at surface. High water slack occurs in the Narrows 15 minutes before the H.W.S. East River and low water slack occurs about 20 minutes before the L.W.S. North River.

TIMES ADJUSTED FOR DAYLIGHT SAVINGS TIME

The Battery— May 2018

Times and Heights of High and Low Waters

1 04:09 -0.3 10:06 4.8 Tu 16:18 0.1 22:21 5.4	9 03:48 4.2 10:36 0.8 W 16:36 4.1 23:01 1.2	17 04:41 -0.6 10:27 4.9 Th 16:40 -0.2 22:33 5.9	25 05:48 4.7 12:10 -0.1 F 18:23 5.3
2 04:51 -0.1 10:52 4.6 W 16:57 0.4 23:03 5.2	10 04:45 4.3 11:23 0.7 Th 17:27 4.4 23:51 0.9	18 05:31 -0.5 11:27 4.9 F 17:31 0.0 23:32 5.7	26 00:40 0.1 06:43 4.7 Sa 12:57 0.0 19:12 5.5
3 05:32 0.1 11:40 4.4 Th 17:34 0.7 23:47 5.0	11 05:40 4.4 12:07 0.4 F 18:13 4.7	19 06:24 -0.3 12:29 4.8 Sa 18:26 0.2	27 01:30 0.0 07:32 4.7 Su 13:42 0.0 19:55 5.6
4 06:14 0.4 12:30 4.2 F 18:13 1.0	12 00:40 0.6 06:31 4.6 Sa 12:50 0.2 18:54 5.1	20 00:35 5.5 07:22 -0.1 Su 13:31 4.8 19:31 0.4	28 02:18 -0.1 08:17 4.7 M 14:27 0.1 20:36 5.6
5 00:33 4.7 06:59 0.6 Sa 13:19 4.0 18:55 1.3	13 01:28 0.2 07:17 4.8 Su 13:34 0.0 19:34 5.5	21 01:38 5.3 08:25 0.0 M 14:30 4.8 20:41 0.6	29 03:04 -0.1 09:01 4.6 Tu 15:09 0.2 O 21:15 5.5
6 01:19 4.5 07:51 0.9 Su 14:07 3.9 19:54 1.5	14 02:16 -0.1 08:02 4.9 M 14:20 -0.1 20:13 5.7	22 02:40 5.1 09:28 0.1 Tu 15:30 4.9 O 21:50 0.6	30 03:47 -0.1 09:44 4.5 W 15:50 0.4 21:53 5.4
7 02:06 4.3 08:49 1.0 M 14:55 3.9 21:04 1.5	15 03:04 -0.3 08:46 5.0 Tu 15:06 -0.3 ● 20:55 5.9	23 03:43 4.9 10:27 0.0 W 16:30 5.0 22:52 0.5	31 04:28 0.0 10:28 4.4 Th 16:29 0.6 22:33 5.2
8 02:55 4.2 09:45 1.0 Tu 15:45 4.0 ● 22:06 1.4	16 03:53 -0.5 09:34 5.0 W 15:53 -0.3 21:41 6.0	24 04:46 4.7 11:20 0.0 Th 17:29 5.2 23:48 0.3	

East River Constant
North River Constant

HWS Batt. + 1:30
HWS Batt. + 2:20

LWS Batt. + 1:20
LWS Batt. + 2:40

East River slack water lasts from 4 to 8 minutes. North River about 35 minutes. North River is running flood 15 feet below the surface 1 hour before turning from ebb to flood at surface. High water slack occurs in the Narrows 15 minutes before the H.W.S. East River and low water slack occurs about 20 minutes before the L.W.S. North River.

TIMES ADJUSTED FOR DAYLIGHT SAVINGS TIME

The Battery— June 2018

Times and Heights of High and Low Waters

1 05:08 0.1 11:15 4.3 F 17:07 0.8 23:15 5.0	9 04:44 4.3 11:23 0.4 Sa 17:20 4.9	17 06:08 -0.6 12:17 5.0 Su 18:15 0.0	25 01:08 0.3 07:09 4.4 M 13:14 0.3 19:31 5.4
2 05:47 0.3 12:03 4.2 Sa 17:44 1.0 23:58 4.8	10 00:09 0.6 05:45 4.4 Su 12:11 0.2 18:11 5.3	18 00:26 5.6 07:03 -0.4 M 13:16 5.0 19:16 0.3	26 01:55 0.2 07:56 4.4 Tu 13:59 0.4 20:12 5.4
3 06:28 0.5 12:49 4.1 Su 18:21 1.2	11 01:00 0.2 06:42 4.6 M 12:59 0.0 19:00 5.6	19 01:26 5.3 08:01 -0.2 Tu 14:13 5.1 20:22 0.5	27 02:40 0.1 08:39 4.4 W 14:43 0.5 20:51 5.4
4 00:42 4.6 07:11 0.7 M 13:33 4.0 19:06 1.4	12 01:52 -0.1 07:35 4.8 Tu 13:50 -0.1 19:48 5.9	20 02:23 5.0 09:01 0.0 W 15:09 5.1 ☉ 21:29 0.6	28 03:23 0.1 09:22 4.4 Th 15:25 0.5 ○ 21:29 5.3
5 01:24 4.5 07:59 0.8 Tu 14:15 4.0 20:11 1.5	13 02:44 -0.4 08:26 4.9 W 14:42 -0.3 ● 20:36 6.1	21 03:21 4.8 09:59 0.1 Th 16:06 5.1 22:30 0.6	29 04:04 0.1 10:04 4.4 F 16:05 0.6 22:08 5.2
6 02:07 4.3 08:53 0.9 W 14:56 4.1 ☉ 21:21 1.4	14 03:35 -0.6 09:18 5.0 Th 15:34 -0.4 21:27 6.1	22 04:20 4.6 10:52 0.1 F 17:02 5.2 23:27 0.5	30 04:43 0.1 10:48 4.3 Sa 16:43 0.7 22:47 5.0
7 02:53 4.3 09:47 0.8 Th 15:40 4.3 22:22 1.2	15 04:25 -0.7 10:15 5.0 F 16:26 -0.3 22:23 6.0	23 05:20 4.4 11:41 0.2 Sa 17:56 5.3	
8 03:46 4.3 10:36 0.6 F 16:28 4.6 23:17 0.9	16 05:16 -0.7 11:15 5.0 Sa 17:19 -0.2 23:23 5.8	24 00:19 0.4 06:18 4.4 Su 12:29 0.3 18:46 5.3	

East River Constant
North River Constant

HWS Batt. + 1:30
HWS Batt. + 2:20

LWS Batt. + 1:20
LWS Batt. + 2:40

East River slack water lasts from 4 to 8 minutes. North River about 35 minutes. North River is running flood 15 feet below the surface 1 hour before turning from ebb to flood at surface. High water slack occurs in the Narrows 15 minutes before the H.W.S. East River and low water slack occurs about 20 minutes before the L.W.S. North River.

TIMES ADJUSTED FOR DAYLIGHT SAVINGS TIME

The Battery— July 2018

Times and Heights of High and Low Waters

1 05:20 0.2 11:32 4.2 Su 17:19 0.9 23:26 4.9	9 05:07 4.3 11:38 0.3 M 17:34 5.4	17 00:09 5.6 06:38 -0.5 Tu 12:54 5.3 18:56 0.2	25 01:30 0.4 07:34 4.3 W 13:33 0.6 19:49 5.3
2 05:57 0.4 12:14 4.2 M 17:55 1.0	10 00:36 0.2 06:13 4.5 Tu 12:32 0.0 18:33 5.7	18 01:06 5.3 07:32 -0.2 W 13:49 5.2 19:58 0.5	26 02:14 0.3 08:17 4.4 Th 14:17 0.6 20:29 5.3
3 00:04 4.7 06:33 0.5 Tu 12:54 4.2 18:32 1.2	11 01:30 -0.1 07:14 4.7 W 13:28 -0.2 19:29 6.0	19 02:01 5.0 08:29 0.1 Th 14:43 5.2 ● 21:03 0.6	27 02:57 0.2 08:58 4.5 F 15:00 0.6 ○ 21:07 5.3
4 00:43 4.6 07:10 0.6 W 13:30 4.2 19:21 1.3	12 02:23 -0.4 08:09 5.0 Th 14:23 -0.3 20:22 6.2	20 02:56 4.6 09:27 0.3 F 15:36 5.1 22:05 0.7	28 03:37 0.1 09:38 4.5 Sa 15:41 0.6 21:43 5.2
5 01:24 4.4 07:55 0.7 Th 14:07 4.4 20:33 1.3	13 03:16 -0.7 09:04 5.1 F 15:18 -0.4 ● 21:16 6.2	21 03:53 4.4 10:22 0.4 Sa 16:31 5.1 23:02 0.7	29 04:15 0.1 10:17 4.5 Su 16:19 0.6 22:18 5.1
6 02:09 4.4 08:49 0.7 F 14:48 4.5 ● 21:43 1.2	14 04:07 -0.8 10:00 5.2 Sa 16:12 -0.5 22:11 6.1	22 04:52 4.2 11:13 0.5 Su 17:26 5.1 23:55 0.6	30 04:51 0.2 10:55 4.4 M 16:56 0.7 22:53 5.0
7 03:01 4.3 09:48 0.6 Sa 15:37 4.8 22:45 0.9	15 04:57 -0.8 10:58 5.3 Su 17:05 -0.4 23:10 5.9	23 05:51 4.2 12:01 0.6 M 18:18 5.1	31 05:25 0.3 11:31 4.4 Tu 17:31 0.8 23:27 4.8
8 04:00 4.3 10:43 0.5 Su 16:33 5.1 23:41 0.6	16 05:47 -0.7 11:57 5.3 M 17:59 -0.1	24 00:43 0.5 06:46 4.2 Tu 12:48 0.6 19:06 5.2	

East River Constant
North River Constant

HWS Batt. + 1:30
HWS Batt. + 2:20

LWS Batt. + 1:20
LWS Batt. + 2:40

East River slack water lasts from 4 to 8 minutes. North River about 35 minutes. North River is running flood 15 feet below the surface 1 hour before turning from ebb to flood at surface. High water slack occurs in the Narrows 15 minutes before the H.W.S. East River and low water slack occurs about 20 minutes before the L.W.S. North River.

TIMES ADJUSTED FOR DAYLIGHT SAVINGS TIME

The Battery— August 2018

Times and Heights of High and Low Waters

1 05:57 0.4 12:05 4.4 W 18:07 0.9	9 01:10 -0.1 06:58 4.8 Th 13:12 -0.1 19:16 6.0	17 01:35 4.8 07:53 0.3 F 14:11 5.2 20:33 0.8	25 02:26 0.3 08:31 4.6 Sa 14:34 0.6 20:41 5.3
2 00:05 4.7 06:28 0.5 Th 12:41 4.5 18:50 1.1	10 02:04 -0.4 07:55 5.1 F 14:08 -0.3 20:10 6.1	18 02:29 4.5 08:51 0.7 Sa 15:03 5.0 ☉ 21:36 0.9	26 03:06 0.2 09:08 4.7 Su 15:16 0.5 ○ 21:16 5.3
3 00:48 4.5 07:04 0.6 F 13:21 4.7 19:52 1.1	11 02:56 -0.7 08:48 5.4 Sa 15:03 -0.5 ● 21:03 6.2	19 03:25 4.2 09:49 0.9 Su 15:57 4.9 22:34 0.9	27 03:44 0.1 09:42 4.8 M 15:55 0.5 21:48 5.2
4 01:37 4.4 07:54 0.7 Sa 14:07 4.8 ☉ 21:10 1.1	12 03:46 -0.8 09:41 5.5 Su 15:56 -0.5 21:56 6.1	20 04:24 4.1 10:43 0.9 M 16:53 4.8 23:27 0.8	28 04:19 0.1 10:13 4.8 Tu 16:33 0.5 22:20 5.0
5 02:31 4.3 09:03 0.7 Su 15:00 5.0 22:18 0.9	13 04:34 -0.8 10:36 5.6 M 16:48 -0.4 22:50 5.8	21 05:24 4.1 11:34 0.9 Tu 17:48 4.9	29 04:52 0.2 10:43 4.8 W 17:10 0.6 22:54 4.9
6 03:33 4.3 10:13 0.6 M 16:01 5.2 23:18 0.6	14 05:22 -0.7 11:31 5.6 Tu 17:39 -0.2 23:46 5.5	22 00:15 0.7 06:20 4.2 W 12:22 0.9 18:39 5.0	30 05:23 0.3 11:16 4.9 Th 17:47 0.7 23:34 4.7
7 04:44 4.3 11:15 0.4 Tu 17:09 5.4	15 06:09 -0.4 12:26 5.5 W 18:33 0.1	23 01:01 0.5 07:09 4.3 Th 13:07 0.8 19:24 5.1	31 05:54 0.4 11:55 4.9 F 18:30 0.8
8 00:15 0.2 05:55 4.5 W 12:14 0.1 18:15 5.7	16 00:41 5.2 06:59 0.0 Th 13:19 5.3 19:30 0.5	24 01:44 0.4 07:52 4.5 F 13:52 0.7 20:04 5.2	

East River Constant
North River Constant

HWS Batt. + 1:30
HWS Batt. + 2:20

LWS Batt. + 1:20
LWS Batt. + 2:40

East River slack water lasts from 4 to 8 minutes. North River about 35 minutes. North River is running flood 15 feet below the surface 1 hour before turning from ebb to flood at surface. High water slack occurs in the Narrows 15 minutes before the H.W.S. East River and low water slack occurs about 20 minutes before the L.W.S. North River.

TIMES ADJUSTED FOR DAYLIGHT SAVINGS TIME

The Battery— September 2018

Times and Heights of High and Low Waters

1 00:21 4.6 06:30 0.5 Sa 12:43 5.0 19:29 1.0	9 02:33 -0.6 08:31 5.7 Su 14:47 -0.5 ● 20:47 6.0	17 02:57 4.1 09:13 1.2 M 15:20 4.7 22:02 1.0	25 03:09 0.1 09:05 5.1 Tu 15:30 0.3 ○ 21:17 5.1
2 01:15 4.4 07:20 0.7 Su 13:36 5.0 20:45 1.0	10 03:22 -0.7 09:21 5.8 M 15:39 -0.5 21:37 5.9	18 03:54 4.0 10:12 1.3 Tu 16:16 4.6 22:56 1.0	26 03:45 0.1 09:33 5.2 W 16:10 0.3 21:50 5.0
3 02:15 4.3 08:35 0.8 M 14:35 5.1 ● 21:57 0.8	11 04:08 -0.7 10:10 5.8 Tu 16:29 -0.4 22:27 5.7	19 04:54 4.0 11:05 1.2 W 17:14 4.7 23:44 0.8	27 04:19 0.1 10:03 5.3 Th 16:50 0.3 22:27 4.9
4 03:21 4.3 09:55 0.7 Tu 15:41 5.2 23:00 0.6	12 04:54 -0.5 11:01 5.7 W 17:18 -0.2 23:20 5.3	20 05:50 4.2 11:54 1.1 Th 18:07 4.8	28 04:53 0.2 10:39 5.3 F 17:31 0.4 23:11 4.7
5 04:33 4.4 11:01 0.5 W 16:54 5.4 23:57 0.2	13 05:38 -0.2 11:53 5.6 Th 18:07 0.2	21 00:29 0.6 06:40 4.4 F 12:40 0.9 18:54 4.9	29 05:28 0.3 11:23 5.3 Sa 18:17 0.5
6 05:44 4.7 12:01 0.2 Th 18:03 5.6	14 00:14 5.0 06:24 0.2 F 12:45 5.3 19:00 0.5	22 01:11 0.5 07:23 4.6 Sa 13:24 0.7 19:35 5.1	30 00:05 4.5 06:09 0.5 Su 12:17 5.2 19:16 0.7
7 00:51 -0.1 06:46 5.0 F 12:58 -0.1 19:04 5.8	15 01:08 4.6 07:14 0.7 Sa 13:36 5.1 19:59 0.8	23 01:52 0.3 08:01 4.8 Su 14:07 0.5 20:11 5.2	
8 01:43 -0.4 07:41 5.4 Sa 13:54 -0.3 19:57 6.0	16 02:02 4.3 08:11 1.0 Su 14:27 4.9 ● 21:01 1.0	24 02:31 0.2 08:34 5.0 M 14:49 0.4 20:45 5.2	

East River Constant
North River Constant

HWS Batt. + 1:30
HWS Batt. + 2:20

LWS Batt. + 1:20
LWS Batt. + 2:40

East River slack water lasts from 4 to 8 minutes. North River about 35 minutes. North River is running flood 15 feet below the surface 1 hour before turning from ebb to flood at surface. High water slack occurs in the Narrows 15 minutes before the H.W.S. East River and low water slack occurs about 20 minutes before the L.W.S. North River.

TIMES ADJUSTED FOR DAYLIGHT SAVINGS TIME

The Battery— October 2018

Times and Heights of High and Low Waters

1 01:06 4.4 07:04 0.7 M 13:17 5.2 20:28 0.8	9 02:56 -0.6 08:59 5.9 Tu 15:21 -0.5 ● 21:16 5.5	17 03:22 3.9 09:35 1.5 W 15:36 4.4 22:18 1.0	25 03:11 -0.1 09:00 5.5 Th 15:49 -0.1 21:25 4.9
2 02:10 4.3 08:23 0.8 Tu 14:22 5.1 ● 21:39 0.7	10 03:41 -0.5 09:44 5.9 W 16:09 -0.4 22:03 5.3	18 04:18 4.0 10:32 1.4 Th 16:32 4.4 23:07 0.8	26 03:50 -0.1 09:34 5.6 F 16:32 -0.1 22:07 4.8
3 03:17 4.4 09:43 0.8 W 15:31 5.1 22:42 0.4	11 04:25 -0.3 10:30 5.8 Th 16:55 -0.2 22:53 5.0	19 05:14 4.1 11:23 1.1 F 17:27 4.5 23:52 0.6	27 04:29 -0.1 10:15 5.6 Sa 17:17 0.0 22:57 4.6
4 04:26 4.5 10:50 0.5 Th 16:44 5.2 23:38 0.1	12 05:07 0.0 11:18 5.5 F 17:42 0.1 23:45 4.7	20 06:04 4.3 12:10 0.9 Sa 18:16 4.6	28 05:11 0.1 11:04 5.5 Su 18:07 0.1 23:57 4.5
5 05:33 4.8 11:49 0.2 F 17:52 5.4	13 05:50 0.4 12:08 5.2 Sa 18:30 0.4	21 00:34 0.4 06:47 4.6 Su 12:55 0.7 18:59 4.8	29 05:59 0.3 12:03 5.3 M 19:05 0.3
6 00:31 -0.2 06:33 5.2 Sa 12:45 -0.1 18:50 5.6	14 00:39 4.4 06:35 0.8 Su 12:58 4.9 19:23 0.8	22 01:14 0.2 07:25 4.9 M 13:39 0.4 19:38 4.9	30 01:02 4.4 06:59 0.5 Tu 13:08 5.2 20:12 0.4
7 01:21 -0.4 07:25 5.6 Su 13:39 -0.3 19:42 5.7	15 01:33 4.1 07:28 1.2 M 13:50 4.7 20:22 1.0	23 01:53 0.1 07:58 5.1 Tu 14:22 0.2 20:13 5.0	31 02:06 4.4 08:15 0.7 W 14:15 5.0 ● 21:20 0.3
8 02:09 -0.6 08:13 5.8 M 14:31 -0.4 20:30 5.7	16 02:27 4.0 08:31 1.4 Tu 14:42 4.5 ● 21:23 1.1	24 02:32 0.0 08:29 5.3 W 15:06 0.0 ○ 20:48 5.0	

East River Constant
North River Constant

HWS Batt. + 1:30
HWS Batt. + 2:20

LWS Batt. + 1:20
LWS Batt. + 2:40

East River slack water lasts from 4 to 8 minutes. North River about 35 minutes. North River is running flood 15 feet below the surface 1 hour before turning from ebb to flood at surface. High water slack occurs in the Narrows 15 minutes before the H.W.S. East River and low water slack occurs about 20 minutes before the L.W.S. North River.

TIMES ADJUSTED FOR DAYLIGHT SAVINGS TIME

The Battery— November 2018

Times and Heights of High and Low Waters

1 03:11 4.4 09:31 0.6 Th 15:23 5.0 22:22 0.1	9 02:57 -0.2 09:02 5.6 F 15:33 -0.3 21:28 4.6	17 03:28 3.9 09:47 1.1 Sa 15:36 4.2 22:10 0.6	25 03:12 -0.4 09:01 5.7 Su 16:03 -0.5 21:48 4.6
2 04:16 4.6 10:37 0.4 F 16:31 5.0 23:17 -0.1	10 03:39 0.1 09:45 5.3 Sa 16:16 0.0 22:18 4.3	18 04:18 4.2 10:36 0.9 Su 16:29 4.2 22:53 0.3	26 04:00 -0.3 09:55 5.5 M 16:54 -0.4 22:50 4.5
3 05:19 4.9 11:36 0.2 Sa 17:36 5.0	11 04:19 0.4 10:32 5.0 Su 17:00 0.2 23:10 4.1	19 05:04 4.5 11:23 0.6 M 17:17 4.4 23:34 0.1	27 04:52 -0.1 10:57 5.3 Tu 17:50 -0.3 23:54 4.4
4 00:09 -0.3 05:17 5.2 Su 11:31 -0.1 17:34 5.1 23:57 -0.5	12 05:00 0.8 11:21 4.8 M 17:47 0.5	20 05:44 4.8 12:09 0.3 Tu 18:01 4.5	28 05:52 0.2 12:02 5.1 W 18:52 -0.1
5 06:08 5.5 12:23 -0.3 M 18:25 5.2	13 00:03 3.9 05:45 1.1 Tu 12:11 4.5 18:39 0.8	21 00:15 -0.1 06:20 5.1 W 12:56 0.0 18:42 4.6	29 00:56 4.4 07:02 0.3 Th 13:06 4.9 19:56 -0.1
6 00:45 -0.5 06:54 5.7 Tu 13:14 -0.4 19:12 5.2	14 00:55 3.8 06:42 1.3 W 13:01 4.3 19:37 0.9	22 00:58 -0.2 06:56 5.4 Th 13:42 -0.3 19:23 4.7	30 01:57 4.5 08:14 0.4 F 14:09 4.8 ● 20:57 -0.2
7 01:30 -0.5 07:37 5.8 W 14:02 -0.4 ● 19:57 5.0	15 01:45 3.8 07:49 1.4 Th 13:51 4.2 ● 20:33 0.9	23 01:42 -0.3 07:33 5.6 F 14:29 -0.4 ○ 20:06 4.7	
8 02:15 -0.4 08:19 5.8 Th 14:48 -0.4 20:41 4.8	16 02:36 3.8 08:52 1.3 F 14:43 4.1 21:24 0.7	24 02:26 -0.4 08:14 5.7 Sa 15:16 -0.5 20:53 4.7	

East River Constant

HWS Batt. + 1:30

LWS Batt. + 1:20

North River Constant

HWS Batt. + 2:20

LWS Batt. + 2:40

East River slack water lasts from 4 to 8 minutes. North River about 35 minutes. North River is running flood 15 feet below the surface 1 hour before turning from ebb to flood at surface. High water slack occurs in the Narrows 15 minutes before the H.W.S. East River and low water slack occurs about 20 minutes before the L.W.S. North River.

The Battery— December 2018

Times and Heights of High and Low Waters

1 02:58 4.7 09:20 0.3 Sa 15:13 4.6 21:53 -0.3	9 03:14 0.1 09:19 5.1 Su 15:52 -0.2 21:52 4.1	17 03:18 4.0 10:00 0.8 M 15:32 3.9 22:09 0.3	25 03:49 -0.7 09:48 5.5 Tu 16:38 -0.9 22:37 4.6
2 03:59 4.8 10:20 0.1 Su 16:16 4.6 22:45 -0.4	10 03:53 0.3 10:01 4.8 M 16:33 0.0 22:41 3.9	18 04:08 4.3 10:51 0.5 Tu 16:29 4.0 22:54 0.0	26 04:42 -0.5 10:49 5.3 W 17:31 -0.7 23:39 4.6
3 04:56 5.1 11:15 -0.1 M 17:15 4.6 23:33 -0.4	11 04:31 0.5 10:46 4.6 Tu 17:13 0.2 23:30 3.8	19 04:57 4.6 11:40 0.1 W 17:24 4.1 23:40 -0.2	27 05:40 -0.3 11:51 5.1 Th 18:27 -0.5
4 05:48 5.3 12:06 -0.3 Tu 18:07 4.6	12 05:10 0.8 11:32 4.4 W 17:57 0.4	20 05:44 5.0 12:30 -0.2 Th 18:14 4.3	28 00:38 4.6 06:44 0.0 F 12:50 4.8 19:28 -0.4
5 00:20 -0.4 06:34 5.4 W 12:56 -0.4 18:54 4.6	13 00:17 3.7 05:53 1.0 Th 12:17 4.2 18:45 0.6	21 00:28 -0.4 06:29 5.3 F 13:20 -0.5 19:02 4.5	29 01:36 4.6 07:53 0.1 Sa 13:49 4.5 ☉ 20:29 -0.3
6 01:06 -0.4 07:17 5.5 Th 13:43 -0.4 19:39 4.5	14 01:02 3.7 06:52 1.1 F 13:02 4.0 19:38 0.6	22 01:18 -0.6 07:14 5.6 Sa 14:10 -0.8 ☾ 19:50 4.6	30 02:35 4.6 09:00 0.2 Su 14:50 4.3 21:26 -0.3
7 01:50 -0.3 07:58 5.4 F 14:28 -0.4 ● 20:22 4.4	15 01:46 3.7 08:02 1.2 Sa 13:47 3.9 ☉ 20:32 0.6	23 02:08 -0.7 08:01 5.7 Su 14:59 -0.9 20:41 4.7	31 03:34 4.7 10:00 0.1 M 15:52 4.1 22:19 -0.3
8 02:33 -0.1 08:38 5.3 Sa 15:11 -0.4 21:06 4.3	16 02:31 3.8 09:05 1.0 Su 14:37 3.9 21:22 0.5	24 02:58 -0.8 08:52 5.7 M 15:48 -1.0 21:37 4.6	

East River Constant
North River Constant

HWS Batt. + 1:30
HWS Batt. + 2:20

LWS Batt. + 1:20
LWS Batt. + 2:40

East River slack water lasts from 4 to 8 minutes. North River about 35 minutes. North River is running flood 15 feet below the surface 1 hour before turning from ebb to flood at surface. High water slack occurs in the Narrows 15 minutes before the H.W.S. East River and low water slack occurs about 20 minutes before the L.W.S. North River.