|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Node | Into map(op\_dir)  To east and to north | Out of map(follow\_dir)  To west and to south |  |  |  |  |
| N1 (left)  Bronx-Whitestone\_Bridge\_Whitestone\_NY\_11357\_USA | 40.793164, -73.824123 | 40.793551, -73.824226 |  |  |  |  |
| N2 (right)  Throgs\_Neck\_Bridge\_Queens\_NY\_USA | 40.793994, -73.793477 | 40.794014, -73.793346 |  |  |  |  |
| W1 (up)  Robert\_F.\_Kennedy\_Bridge\_Astoria\_NY\_11105\_USA | 40.768912, -73.910238 | 40.769205, -73.910147 |  |  |  |  |
| W2 (down)  Queens\_Midtown\_Expy\_Maspeth\_NY\_11378\_USA | 40.725781, -73.900702 | 40.725919, -73.900669 |  |  |  |  |
| S1(left)  Van\_Wyck\_Expy\_Kew\_Gardens\_NY\_11415\_USA | 40.709607, -73.820145 | 40.709601, -73.820420 |  |  |  |  |
| S2(right)  Cross\_Island\_Pkwy\_Floral\_Park\_NY\_11001\_USA | 40.719537, -73.726204 | 40.719579, -73.726351 |  |  |  |  |
| E1(up)  Long\_Island\_Expy\_Little\_Neck\_NY\_11362\_USA | 40.760452, -73.732523 | 40.760346, -73.732429 |  |  |  |  |
| E2(down)  249-05\_Grand\_Central\_Pkwy\_Flushing\_NY\_11362\_USA | 40.752295, -73.725982 | 40.752161, -73.725848 |  |  |  |  |
| 1 | 40.768242, -73.905684 | 40.768582, -73.906289 |  |  |  |  |
| 2 | 40.766222, -73.890578 | 40.766626, -73.889107 |  |  |  |  |
| 3 |  |  |  |  |  |  |
| 4 | 40.760601, -73.858014 (to east, to south) | 40.758713, -73.850027 |  |  |  |  |
| 5 | 40.761924, -73.843651 (To east and north) | 40.765416, -73.839647 |  |  |  |  |
| 6 | 40.786918, -73.823803  (north) | 40.792510, -73.823751  (south) |  |  |  |  |
| 7 | 40.784662, -73.786277 (from south to north, to east, to west) |  |  |  |  |  |
| 8 | 40.737580, -73.850821  (from east to west) |  |  |  |  |  |
| 9 |  |  |  |  |  |  |
| 10 |  |  |  |  |  |  |
| 11 | 40.743288, -73.775561  (from west to east) | 40.745753, -73.768112 (From east To west, to north, to south) |  |  |  |  |
| 12 |  |  |  |  |  |  |
| 13 | 40.752528, -73.745990  (from west to east) | 40.756723, -73.739835 (from east to west, to north to south) |  |  |  |  |
| 14 | 40.741875, -73.728252  (from south to north and to east) |  |  |  |  |  |
| 15 |  |  |  |  |  |  |
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| Link\_id | Start(node) | End(node) | Direction | Free flow time | Reverse lanes |  |  |  |  |
| 001 | W1 (in) | 1(in) | w🡪e | 17 |  |  |  |  |  |
| 002 | 1(in) | 2(in) | w🡪e | 52 |  |  |  |  |  |
| 003 | 2(in) | 4(in) | w🡪e | 142 |  |  |  |  |  |
| 004 | 4(in) | 5(in) | w🡪e | 77 |  |  |  |  |  |
| 005 | 5(in) | 6(in) | s🡪n | 133 |  |  |  |  |  |
| 006 | 6(in) | N1 (out) | s🡪n | 39 |  |  |  |  |  |
| 007 | S2(in) | 14(in) | s🡪n,e | 101 |  |  |  |  |  |
| 008 | 14(in) | E2(out) | w🡪s | 57 |  |  |  |  |  |
| 009 | E1(in) | 13(out) | e🡪w | 26 | 016 |  |  |  |  |
| 010 | 13(out) | 11(out) | e🡪w | 109 |  |  |  |  |  |
| 011 | 11(out) | 7(in) | s🡪n | 206 |  |  |  |  |  |
| 012 | 7(in) | N2(out) | s🡪n | 50 |  |  |  |  |  |
| 013 | W2(in) | 8(in) | w🡪e | 178 |  |  |  |  |  |
| 014 | 8(in) | 9(in) | w->e | 36 |  |  |  |  |  |
| 015 | 11(in) | 13(in) | w->e | 109 | 010 |  |  |  |  |
| 016 | 13(in) | E1(out) | w->e | 54 | 009 |  |  |  |  |
| 017 | 7 | 13 |  | 228 |  |  |  |  |  |
| 018 | 13 | 14 |  | 60 |  |  |  |  |  |
| 019 | 4 | 8 |  | 95 |  |  |  |  |  |
| 020 | 8 | 10 |  | 138 |  |  |  |  |  |
| 021 | 10 | S1(out) |  | 42 |  |  |  |  |  |
| 022 | 5 | 9 |  | 99 |  |  |  |  |  |
| 023 | 9 | 10 |  | 138 |  |  |  |  |  |
| 024 | 7 | 6 |  | 113 |  |  |  |  |  |
| 025 | 9 | 11 |  | 233 |  |  |  |  |  |
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| Iteration number | Sequence | Free flow time | Obs\_time | Start\_dir | Destination\_dir | Distance (m) |  |
| 0 | 001,002,003,004,005,006 | 460 | 463 | w | N | 10862 |  |
| 1 | 007,008 | 158 | 198 | s | e | 3958 |  |
| 2 | 007,008 | 158 | 200 | s | e | 3958 |  |
| 3 | 016,010,011,012 | 419 | 666 | e | n | 9594 |  |
| 4 | 013,014,010,016 | 610 | 674 | w | e | 15351 |  |
| 5 | 012,017,018,007 | 439 | 479 | n | s |  |  |
| 6 | 012,017,018,007 | 439 | 482 | n | s |  |  |
| 7 | 008,007 | 158 | 239 | e | s |  |  |
| 8 | 013,014,010,016 | 610 | 787 | w | e |  |  |
| 9 | 001,002,003,019,020,021 | 486 | 940 | s | w |  |  |
| 10 | 001,002,003,019,020,021 | 486 | 999 | s | w |  |  |
| 11 | 016,010,014,013 | 610 | 2227 | e | w |  |  |
| 12 | 006,005,022,023,021 | 451 | 635 | n | s |  |  |
| 13 | 016,010,014,013 | 610 | 2200 | e | w |  |  |
| 14 | 007,018,017,012 | 439 | 1063 | s | n |  |  |
| 15 | 008,018,017,024,005,004,003,002,001 | 879 | 2096 | e | w |  |  |
| 16 | 008,018,017,024,005,004,003,002,001 | 879 | 2085 | e | w |  |  |
| 17 | 006,005,004,019,013 | 522 | 1315 | n | w |  |  |
| 18 | 013,014,010,016 | 610 | 1534 | w | e |  |  |
| 19 | 008,007 | 158 | 202 | e | s |  |  |
| 20 | 006,005,004,019,013 | 522 | 1273 | n | w |  |  |
| 21 | 007,008 | 158 | 355 | s | e |  |  |
| 22 | 013,014,010,016 | 610 | 1737 | w | e |  |  |
| 23 | 012,017,016 | 332 | 716 | n | e |  |  |
| 24 | 012,017,018,007 | 439 | 812 | n | s |  |  |
| 25 | 016,017,024,005,004,003,002,001 | 816 | 1602 | e | w |  |  |
| 26 | 016,017,012 | 332 | 349 | e | n |  |  |
| 27 | 008,007 | 158 | 205 | e | s |  |  |
| 28 | 013,020,021 | 358 | 759 | w | s |  |  |
| 29 | 007,018,017,012 | 439 | 560 | s | n |  |  |
| 30 | 008,007 | 158 | 197 | e | s |  |  |
| 31 | 021,020,013 | 358 | 1040 | s | w |  |  |
| 32 | 012,017,018,007 | 439 | 596 | n | s |  |  |
| 33 | 006,005,004,003,002,001 | 460 | 966 | n | w |  |  |
| 34 | 016,010,014,013 | 610 | 1347 | e | w |  |  |
| 35 | 012,017,016 | 332 | 385 | n | e |  |  |

