**METROPOLITAN WASHINGTON COUNCIL OF GOVERNMENTS**
**777 North Capitol Street, N.E.**
**Suite 300**
**Washington, D.C. 20002-4290**

**MEMORANDUM**

**TO:**   Regional Bus Subcommittee

**FROM:**   Robert L. Snead and Mark Moran,
Transportation Engineers

**SUBJECT:**   Streamlining the Transfer of Bus Transit Data between Transit Providers
and TPB Staff

**Date:**   November 27, 2007

The development of bus and rail inputs for CLRP networks begins with the compilation of local and commuter bus and rail service data for all regional transit providers in the Metropolitan Washington region.  Although the real-world transit service is changing throughout the year, we update our transit networks once a year.  This updated information informs both our base-year networks (e.g., 2006, 2007) and our future-year networks (e.g. 2010, 2020, and 2030).

We need two types of data to model transit service: schedule data and spatial data (the path each route takes).  Historically, we have obtained these two types of data by collecting paper schedules provided by the transit providers and manually processing the data.  Since 1999, we have obtained schedule information from WMATA (and later Ride On) in a computer-readable format.  Although the data provided contains more detail than we need, we use SAS programs to calculate, for each route, the average headway and average run time during the AM peak period and the off peak period.  Examples of WMATA's Braille file, Ride On's text file, and a paper schedule for Fairfax Connector are presented on pages 2-4 of this memorandum.

In the future, we would like to obtain this data as computer-readable files from all transit providers.  Furthermore, to our knowledge, we do not get annual updates of the spatial data (i.e. the routes or paths of the bus lines).

Streamlining the transfer of information from transit providers to COG/TPB revolves around the following topics:

- What GIS systems are used by the transit providers?
- What software is used to manage bus routes and schedule information (e.g. Trapeze, www.trapezegroup.co.uk)?
- Are there or could we develop standards for transmitting schedule data and spatial data about transit routes?

# Example of WMATA's Braille Text File

| DAY OF | THE WEEK: WEEKDY HUNTING TOWERS | KING & WASHINGTON STS | PENDLETON & COLUMBUS |
|---|---|---|---|
| ?10A*2A | - | - | 4:54 |
| ?10A*2A | - | - | 5:24 |
| ?10A*2A | - | - | 5:54 |
| ?10A*2A | - | - | 6:15 |
| 10E  A | - | - | - |
| ?10E  A | - | - | - |
| ?10A  A | 6:38 | 6:42 | 6:45 |
| ?10E  A | - | - | - |
| 10E  A | - | - | - |
| ?10A  A | 7:08 | 7:12 | 7:15 |
| ?10E  A | - | - | - |
| ?10E  A | - | - | - |
| ?10A  A | 7:38 | 7:42 | 7:45 |
| 10E  A | - | - | - |
| ?10A  A | 7:56 | 8:01 | 8:05 |
| ?10E  A | - | - | - |
| ?10A  A | 8:30 | 8:35 | 8:39 |
| ?10A  A | 9:00 | 9:05 | 9:09 |
| ?10A  A | 9:30 | 9:35 | 9:39 |
| ?10A  A | 10:00 | 10:05 | 10:09 |
| ?10A  A | 10:29 | 10:34 | 10:38 |
| ?10A  A | 11:00 | 11:05 | 11:09 |
| ?10A  A | 11:30 | 11:35 | 11:39 |
| ?10A  P | 12:00 | 12:05 | 12:09 |
| ?10A  P | 12:30 | 12:35 | 12:39 |
| ?10A  P | 1:00 | 1:05 | 1:09 |
| ?10A  P | 1:30 | 1:35 | 1:39 |
| ?10A  P | 2:00 | 2:05 | 2:09 |
| ?10A  P | 2:32 | 2:37 | 2:41 |
| ?10A  P | 3:00 | 3:05 | 3:09 |
| ?10A  P | 3:30 | 3:35 | 3:39 |
| ?10A  P | 4:00 | 4:05 | 4:09 |
| ?10A  P | 4:30 | 4:34 | 4:39 |
| ?10A  P | 5:00 | 5:04 | 5:09 |
| ?10A  P | 5:31 | 5:35 | 5:41 |
| ?10A  P | 6:00 | 6:04 | 6:10 |
| ?10A  P | 6:30 | 6:34 | 6:39 |
| ?10A  P | 7:00 | 7:04 | 7:09 |
| ?10A  P | 7:30 | 7:34 | 7:39 |
| ?10A  P | 8:00 | 8:04 | 8:09 |
| ?10A  P | 9:00 | 9:04 | 9:07 |
| ?10A  P | 10:00 | 10:04 | 10:07 |
| ?10A  P | 11:00 | 11:04 | 11:07 |
| ?10A  X | 12:00 | 12:04 | 12:07 |

Example of RideOn's Text File

| Block Name | Departure Terminal | Route Number | Departure Time | Arrival Time | Arrival Terminal | Direction Code | Run Number |
|---|---|---|---|---|---|---|---|
| A6, | SS, | 1C, | 507, | 526, | FH, | I, | 16 X |
| E5, | SS, | 1C, | 537, | 556, | FH, | I, | 23 X |
| A7, | SS, | 11 , | 552, | 609, | FH, | I, | 8 X |
| A3, | SS, | 1C, | 603, | 624, | FH, | I, | 21 X |
| D9, | SS, | 11 , | 613, | 630, | FH, | I, | 403 X |
| B6, | SS, | 1C, | 623, | 646, | FH, | I, | 11 X |
| C4, | SS, | 11 , | 633, | 652, | FH, | I, | 12 X |
| B1, | SS, | 11 , | 640, | 659, | FH, | I, | 3 X |
| H3, | SS, | 11 , | 646, | 705, | FH, | I, | 54SX |
| D8, | SS, | 1 , | 652, | 718, | FH, | I, | 40SX |
| D4, | SS, | 11 , | 658, | 720, | FH, | I, | 38 X |
| B5, | SS, | 11 , | 704, | 726, | FH, | I, | 14 X |
| E9, | SS, | 11 , | 710, | 732, | FH, | I, | 42SX |
| E4, | SS, | 1 , | 716, | 744, | FH, | I, | 68SX |
| I4, | SS, | 11 , | 722, | 747, | FH, | I, | 408 X |
| C7, | SS, | 11 , | 728, | 754, | FH, | I, | 1 X |
| A1, | SS, | 11 , | 734, | 801, | FH, | I, | 20 X |
| J9, | SS, | 1 , | 740, | 811, | FH, | I, | 76SX |
| D3, | SS, | 11 , | 746, | 813, | FH, | I, | 13 X |
| A7, | SS, | 11 , | 752, | 819, | FH, | I, | 8 X |
| I8, | SS, | 11 , | 759, | 826, | FH, | I, | 74SX |
| G3, | SS, | 1 , | 807, | 838, | FH, | I, | 52SX |
| B2, | SS, | 11 , | 815, | 842, | FH, | I, | 25 X |
| F4, | SS, | 11 , | 823, | 850, | FH, | I, | 48SX |
| I3, | SS, | 1 , | 832, | 901, | FH, | I, | 79SX |
| J7, | SS, | 11 , | 841, | 907, | FH, | I, | 81SX |
| J2, | SS, | 1 , | 850, | 917, | FH, | I, | 78SX |
| J4, | SS, | 11 , | 900, | 922, | FH, | I, | 80SX |
| K2, | SS, | 1 , | 910, | 936, | FH, | I, | 89SX |
| A6, | SS, | 11 , | 920, | 942, | FH, | I, | 16 X |
| H4, | SS, | 1 , | 930, | 956, | FH, | I, | 71SX |
| F5, | SS, | 11 , | 940, | 1002, | FH, | I, | 84 X |
| C1, | SS, | 1 , | 951, | 1017, | FH, | I, | 15 X |
| B4, | SS, | 1 , | 1005, | 1031, | FH, | I, | 93 X |
| H7, | SS, | 1 , | 1021, | 1047, | FH, | I, | 65SX |
| E6, | SS, | 1 , | 1041, | 1107, | FH, | I, | 43 X |
| I5, | SS, | 1 , | 1101, | 1127, | FH, | I, | 61 X |
| A6, | SS, | 1 , | 1121, | 1147, | FH, | I, | 16 X |
| K3, | SS, | 1 , | 1151, | 1217, | FH, | I, | 96 X |
| B2, | SS, | 1 , | 1221, | 1247, | FH, | I, | 25 X |
| F1, | SS, | 1 , | 1251, | 1317, | FH, | I, | 97 X |
| A8, | SS, | 1 , | 1321, | 1347, | FH, | I, | 10 X |
| D6, | SS, | 1 , | 1351, | 1417, | FH, | I, | 32 / |
| D5, | SS, | 1 , | 1421, | 1447, | FH, | I, | 37 X |
| C8, | SS, | 1 , | 1451, | 1520, | FH, | I, | 422 X |
| K4, | SS, | 1C, | 1521, | 1549, | FH, | I, | 101 X |

Fairfax Connector Schedule (Internet)



| Route 402 | | | Weekday Eastbound | | | Route 402 | | | Weekday Westbound | |
|---|---|---|---|---|---|---|---|---|---|---|
| Vienna Station (South Side) | Moore Ave & Park St | Park St & Cedar Ln | Dunn Loring Station | Old Lee Hwy & Hilltop Rd | | Old Lee Hwy & Hilltop Rd | Dunn Loring Station | Park St & Cedar Ln | Park St & Moore Ave | Vienna Station (South Side) |
| **AM SERVICE** | | | | | | **PM SERVICE** | | | | |
| 6:27 | 6:36 | 6:39 | 6:44 | 6:49 | | 4:37 | 4:42 | 4:48 | 4:51 | 4:58 |
| 7:02 | 7:11 | 7:14 | 7:19 | 7:24 | | 5:15 | 5:20 | 5:27 | 5:30 | 5:38 |
| 7:37 | 7:46 | 7:49 | 7:54 | 7:59 | | 5:50 | 5:55 | 6:03 | 6:06 | 6:14 |
| | | | | | | 6:26 | 6:31 | 6:39 | 6:42 | 6:50 |