

Bus System Design Rules
for the
the MTA's Proposed Restructuring of Baltimore's Bus System
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The purpose of the system design rules is to guarantee the implementation of the following guidelines: The organization of the bus system must

- a. minimize average trip time.
- b. maximize ridership, and
- c. optimize asset utilization.

There are six components of our planned restructuring:

1. bus stop and shelter location
2. downtown routing
3. hub locations
4. the owl system
5. the fare structure
6. eight radial sectors: N.W., N., N.E., E., S.E., S., S.W., and W.

The proposed sectors are:

- N.W. Sector - North Avenue and Leakin Park to, but not including, the JFX
- N. Sector - JFX to Hillen Rd., Perring Pkwy, and McClean Blvd.
- N.E. Sector - Hillen Rd., Perring Pkwy., and McClean Blvd. to, but not including, Sinclair Ln., Cedonia Ave., Hazelwood Ave., and I-95
- E. Sector - Cedonia Ave., Sinclair Ln., Hazelwood Ave., and I-95 to Eastern Ave.
- S.E. Sector - Eastern Ave. to the Patapsco River
- S. Sector - Patapsco River to the Camden Line and the Anne Arundel/Howard County line
- S.W. Sector - Camden Line up to and including Wilkens Ave.
- W. Sector - Wilkens Ave. to North Ave., Leakin Park, and Windsor Mill Rd.

During any restructuring, our goal is to neither increase nor decrease the weekly vehicle service miles, though, as the first phases of a restructuring are implemented, weekly vehicle service miles may increase or decrease temporarily.

System Design Rules:

We have created these rules because we acknowledge that the system will change over time, but we believe that if these rules are followed, it will change well. We recommend that restructuring of the system be considered at least every decade, so as to prevent the system from falling behind the times, as has happened in the past.

- Overall System
 - The loads of lines that pass through downtown should be balanced, so as not to create a line with heavy ridership on one end and light ridership on the other.
 - Every bus line must connect with at least one rail line.
 - All forced triple transfers should be eliminated except those in which the middle transfer is rail-to-rail.
 - Every branch and level of service should have its own number, except for short service.
 - Where lines have a common terminus, blocks may switch lines.
 - Every bus line operating in Baltimore City must have a direct transfer to a downtown radial bus line.

- Every bus line must connect to a circumferential bus line.
- Downtown System Organization
 - The east-west corridors are:
 - Pratt/Lombard
 - Baltimore/Fayette
 - Saratoga/Lexington
 - Madison/Centre and Monument
 - Any north-south bus that comes into downtown west of Park Avenue and the Arena must go east, any north-south bus that comes in east of Park Avenue and the Arena must go west.
 - All Pratt/Lombard Corridor buses must turn north at some point in downtown, and all Saratoga Street buses must turn south at some point, while in downtown. The central downtown zone extends from Central Ave. on the east to Martin Luther King, Jr. Blvd. on the west and from Madison St. to the north to Montgomery St. to the South.
- Radial Routes
 - Radial routes travel from outer areas through the heart of downtown.
 - Every downtown radial must connect with both light rail lines, the subway, and with all other downtown radials.
 - All urban areas in Metropolitan Baltimore should be served.
 - There should be connections to all adjacent transit systems on all major transit corridors, with timed overlapping layovers or guaranteed double transfers; no gaps in route coverage should exist.
 - There should be no more than one through radial bus line in a rail corridor.
 - Classes of Service
 - The classes of bus lines are locals, limiteds, expresses, and contract commuters.
 - Locals should travel from one side of the dense portion of the city/county to the other side, during all daytime hours.
 - Limiteds should stop at all transfer and high-volume stops, until they get beyond the limited zone, where they would make at all stops.
 - Limiteds and expresses can operate in the following corridors:
 - Eastern/Madison Monument
 - Bel Air Road/Walther
 - Bel Air Road/I-95
 - Harford Road/Hillen
 - Loch Raven/Hillen
 - Charles/St. Paul/York
 - Edmondson
 - Fredrick Avenue/I-95
 - Wilkens/Southwestern/Washington Boulevard
 - Washington Boulevard/I-95
 - Ritchie/Crain
 - Ritchie/I-97
 - Sinclair/Edison
 - I-95/Eastern/North Point Boulevard

- Locals would be extended to serve limited stops during evenings, when limiteds would not operate.
 - Expresses should operate from the county into the city and through to the other side of downtown. They would operate during rush hours with some mid-day runs.
 - Limiteds and expresses should operate on roadways with good traffic flow.
 - Contract commuter buses should run express from suburban counties with locally operated transit systems into downtown. Contract commuters would operate during rush hours, with some mid-day runs.
- Targeted Destination Lines
 - Downtown routes that do not serve the central core.
 - Target lines are not circumferential.
- Shuttles
 - A circuit route that connects to both radial and circumferential lines, but is not one itself.
 - Shuttles should connect to at least one rail line, at least two radials, and should connect to a circumferential.
- Jerkwaters
 - A line that serves outlying areas and connects to few radials.
 - Such routes should be eliminated and merged into branch lines.
- Circumferentials
 - A line that operates perpendicular to radials.
 - All circumferential lines should be in circular shells that connect to all other circumferentials in that shell. Thus, in general, there should be no more than three circumferentials in a single arc. Circular shells should form a complete circle. A circumferential may belong to more than one shell, and shells need not be concentric.
 - Circumferentials should connect to both the subway and light rail where possible.
- Connectors
 - Connectors are non-circuit routes that connect to a rail line and are not radial or circumferential.
 - Connectors to the subway should be maximized.
 - Connectors can be linked so as to increase connectivity.
- Owl Service
 - Owl service is all night service.
 - Owl service should be a separate system with its own routes and numbering system.
 - All Owl lines should have one or two service blocks operating at a time.
 - The only non-radial owl lines should be circumferential lines, which currently would include the #13 Canton line and the #22 line.
 - Owl service should begin from an outlying terminal.
 - The inbound service should be using a block of terminating evening service that changes its route designation for the inbound owl service.
 - All radial owl service should terminate downtown at the arena.
 - All radial owl buses should have a common layover to guarantee transfers.

- All owl radials should depart the arena at 1 am, 2:30 am, and 4 am, with their final run being inbound.
- There should be through service to downtown for owl service, with no connection or shuttle routes.
- All Owl passengers would be entitled to stay on board through one layover to avoid standing on the street for long periods of time. If an owl bus is late, and it misses the common layover and transfer at the arena, all passengers onboard may remain onboard for another round trip at no charge.
- Hubs
 - Hubs are terminals where many bus lines converge.
 - Hubs should be concentrated at the edges of downtown, suburban sector reconvergence points, government centers, and/or at rail stations.
 - Buses can change bus blocks at hubs.
 - All lines that serve Towson should connect. There must be bus lines serving Towson coming from the east, coming from the west, coming from the north along the York Road Corridor, and coming from the south along the York Road Corridor, Loch Raven Boulevard Corridor, and Charles Street Corridor.
 - Bus lines serving Pennsylvania Station must come from the Bel Air Road Corridor, Mondawmin, North Avenue, the southeast waterfront, the Wilkens Avenue Corridor, and the Charles Street Corridor.
 - There must be a bus line connecting Pennsylvania Station, Camden Station, and the inner city bus station.
- Bus Stops
 - Bus stops should exist at all points where lines intersect, to facilitate transfers.
 - At transfer points, pedestrian street crossings should be minimized.
 - Where buses make left-hand turns, the first stop after the turn should be located as close to the intersection of the turn as possible.
 - In Baltimore City, where buses make a left-hand turn, bus stops should be no more than 1,500 feet or three blocks apart, whichever is less, except when there is some physical constraint preventing this.
 - In Baltimore City, along a line, bus stops should be no more than 1,000 feet apart or two blocks, whichever is less, except (a) where some physical constraint prevents a bus stop from being located at that location or (b) where a bus is preparing to make a left hand turn.
- Transfers
 - Transfers are one block or less from the stop of one line to another and should be located to minimize pedestrian street crossings.
 - Where bus lines cross each other and both lines are on one-way streets, the bus stops for both lines should be at a common corner.

Fare Structure Rules:

- Locals/Limiteds/Expresses
 - Passes
 - The monthly pass must cost less than 38 single fares.
 - The weekly pass must cost less than 10 single fares.
 - The day pass must cost more than 2.5 single fares, but less than 3.

- Fare receipts should be available upon request for cash payment for a pass.
- A single use transfer approximately equal to 0.5 single fare should be available. The transfer must be surrendered to the operator of the connecting bus or the subway attendant.
- Expresses buses require a surcharge.
- Commuters
 - Zone fares apply on commuter service only beyond the local service area.
 - Transfers and local passes allow applicable cash fare credit on commuter-contract buses, within the Metropolitan Planning Organization's boundaries.