

METRO University Line scoping comments

Christof Spieler – 7/14/06

Creating effective connections is key to a successful transit system. This is especially true for the proposed University line, which will become a major east-west spine. The success of this line, and, more importantly, its utility to the city, is dependent to a considerable degree on how well it is connected to other transit lines.

Houston has two separate but complementary high-quality transit systems. One is the LRT/BRT, which currently consists of one line but will be expanded to 6 by 2012. The other is the HOV lane commuter bus system (since METRO has no official name for it, I will call it “METROExpress”), which serves 7 corridors.

The University corridor intersects with 3 LRT/BRT lines: the proposed Uptown Line at its west end, the existing Main Street line at its center, and the proposed Southeast Line at its east end. It also runs parallel to two METROExpress corridors -- the Southwest Freeway service and the Westpark service -- which combine inside 610. A further METROExpress service – Gulf Freeway – and a further proposed BRT line – East End – lie just beyond the corridor’s east end.

I believe that these connections must be made as convenient and flexible as possible. This is key to providing quality service and maximizing ridership in the short terms. It is also key to building a transit system that will continue to be useful in the long term.

There is an obvious hierarchy of quality connections:

- The best connection is through-running of vehicles from one line onto another, when the passenger doesn’t have to change trains at all and gets a one-seat ride.
- Next best is a cross-platform connection.
- Next best is a short walk from one platform to another.
- Next comes an overpass accessed by stair, escalator, and/or elevator.

A more complicated connection – one that involves waiting for traffic lights or walking longer than a city block – may be required by site conditions. Complicated connections are common in places where transit systems have developed over decades, often under multiple ownership. But in Houston, where we are building a new system under the control of a single transit agency, we can do better.

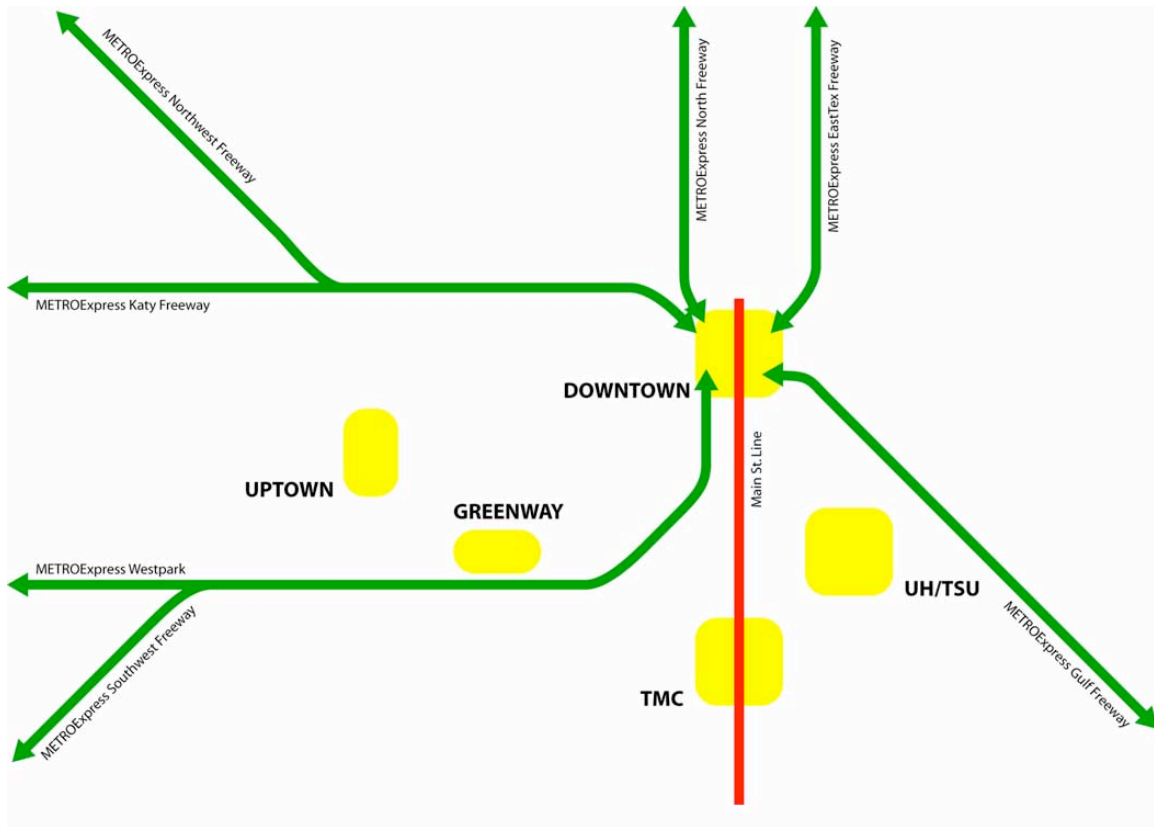
Once built, inconvenient connections are hard to undo. Passengers may suffer for decades for expedient decisions made today. Thus, we have to do things right now. And we have to plan for the future. In some cases, demand or funding or service levels may not make a connection feasible today. But it is still desirable to plan for its implementation in the

future. This is particularly true of track connections between lines to enable through-running. These are usually difficult and sometimes impossible to retrofit; it makes sense to build them (or at least design so as not to preclude them) now if there is a reasonable possibility that direct service may be desired in the future.

In the end, the success of the transit system METRO is building will be based on whether it meets riders' needs. Connecting different transit lines and modes will make METRO an option for more people's daily trips. And making those connections simple will not only mean that people are more likely to ride transit; it will mean that tens of thousands of people who do ride transit will have a better day every day.

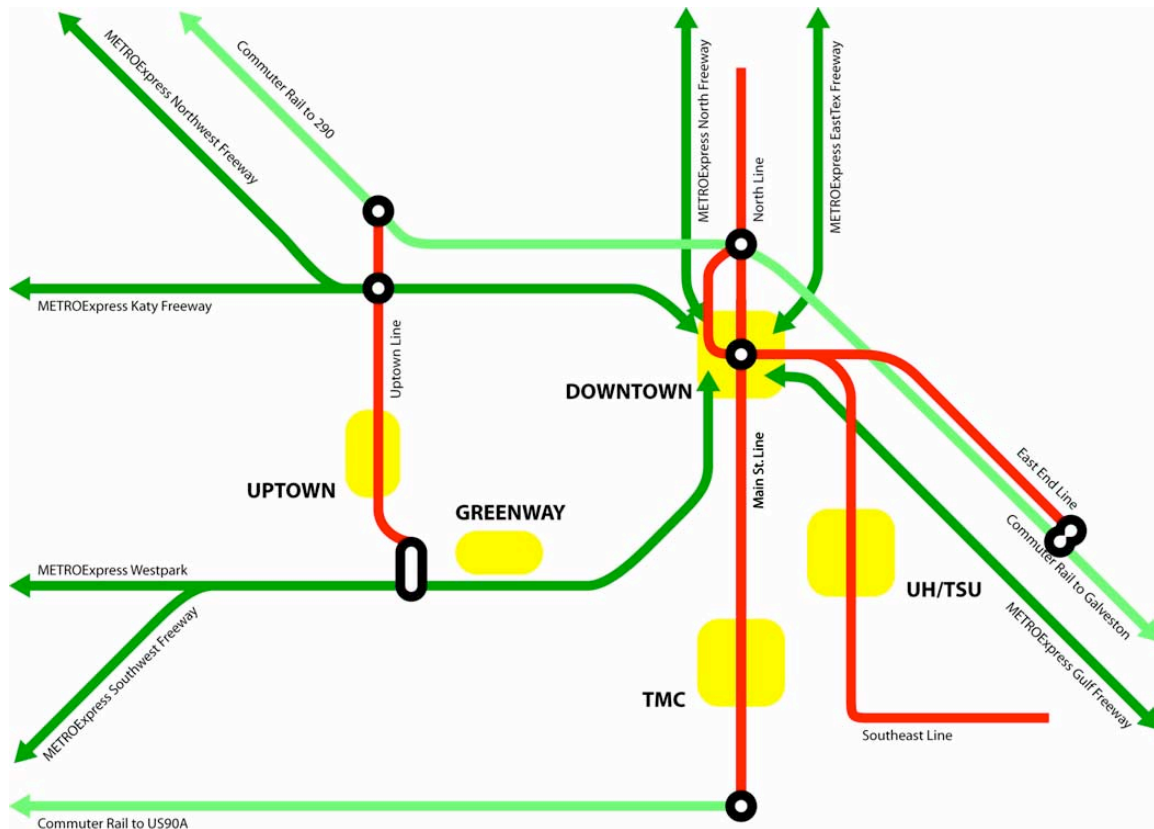
Today:

One METRORail line links Downtown and the Texas Medical Center. 7 METROExpress lines provide excellent service from suburban areas to Downtown. Of the 5 major activity centers in the urban core, though, 3 have no high-quality transit links at all.



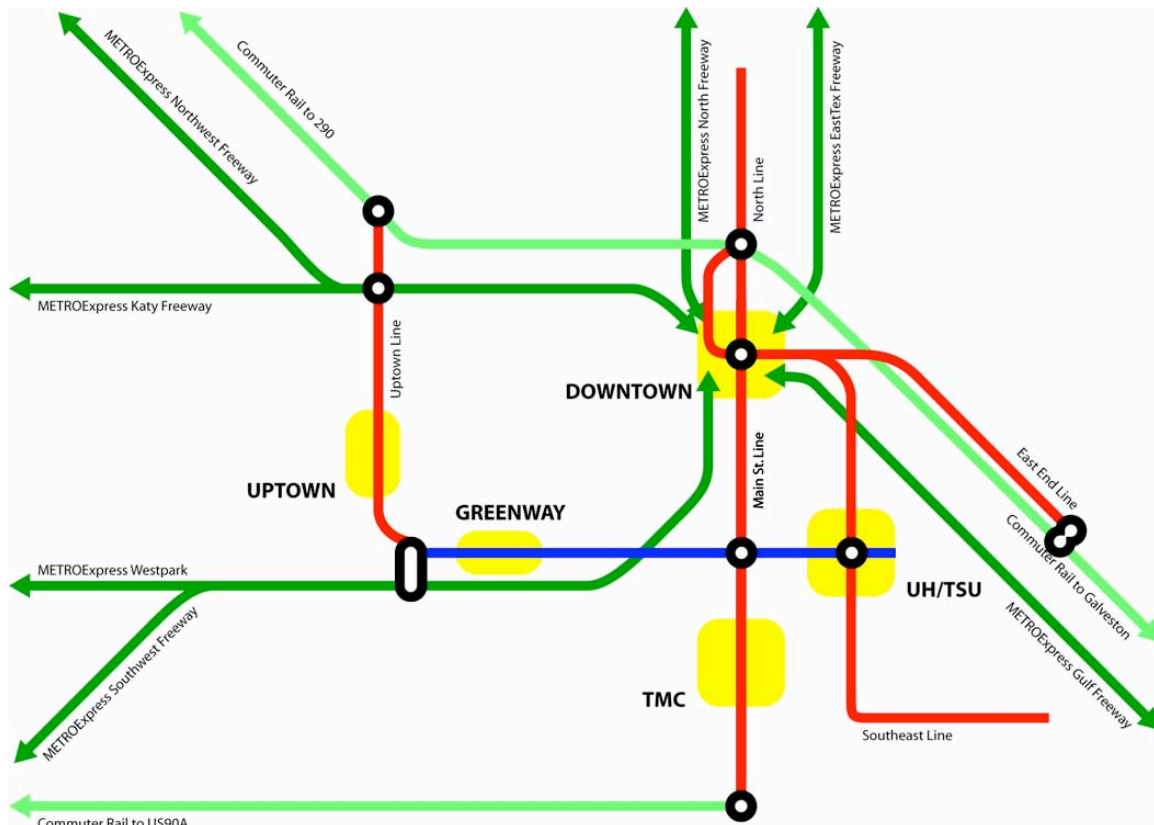
The beginning of an urban system:

METRO Solutions BRT service promises will begin to build an urban network, linking UH/TSU as well as several neighborhoods to Downtown. The Uptown line connects the Uptown area to 4 Westside METROExpress lines. New commuter rail lines augment METROExpress. But without an east-west line, there's no service to Greenway Plaza and no link between Post Oak and the other activity centers.



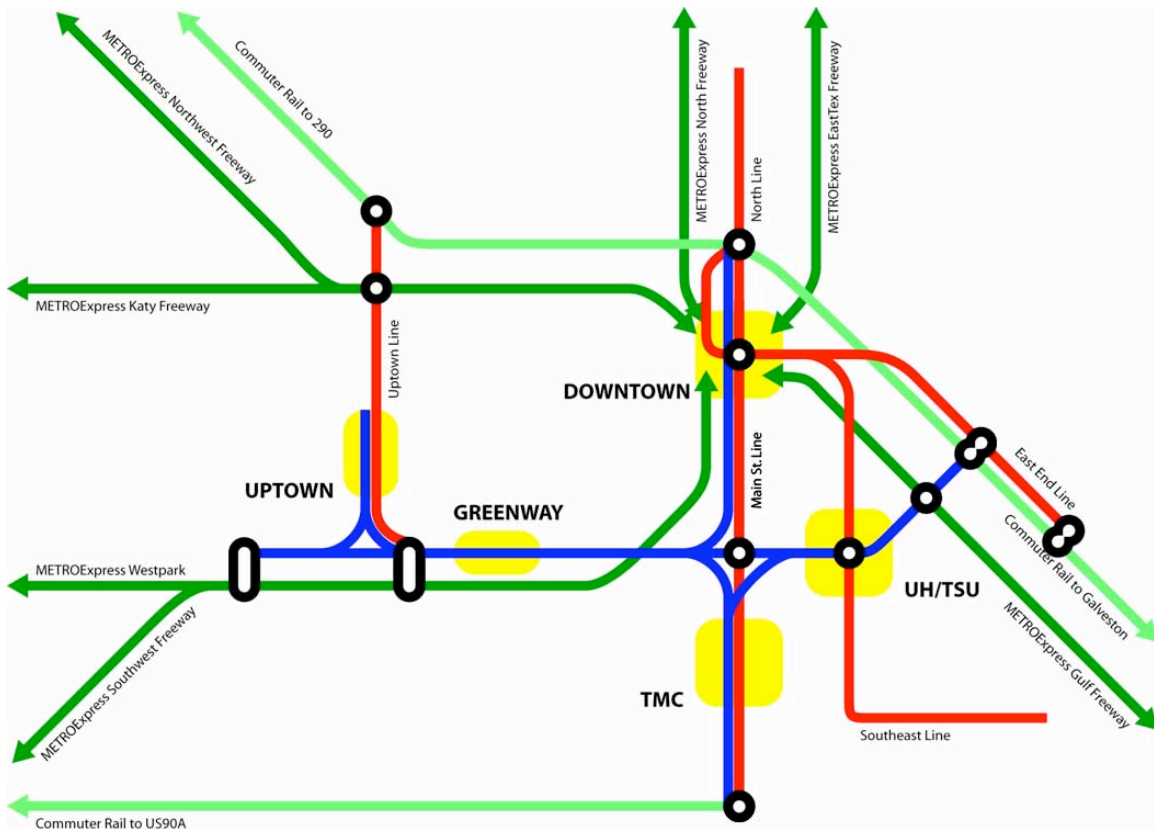
A key link:

The University Line provides a key east-west connection, connecting Uptown to the system, adding service to Greenway Plaza, and better linking UH/TSU. But this system involves a great many transfers – two between Downtown and Post Oak, for example – and it misses some potential connections.



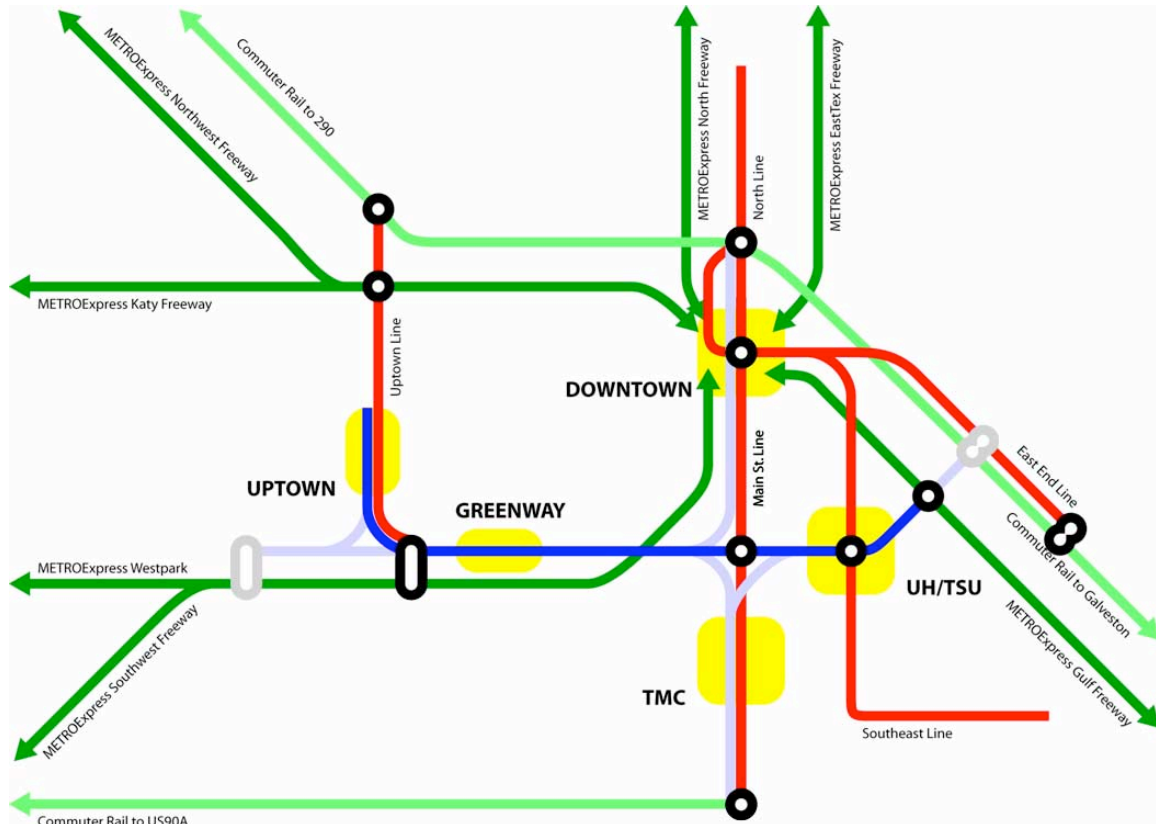
The “connected” University Line:

The connectivity of the University line is greatly enhanced with 4 key upgrades: through-running onto the Uptown line (for nonstop service to Uptown), track connections to the Main Street line (for nonstop service to Downtown and the TMC), an eastern extension (for connections to METROExpress, commuter rail, and the East End line), and a western extension (for future expansion and for better bus connections). These enable more convenient trips between activity centers (Downtown-Post Oak is now a 1-seat ride), better connections between lines (East End to Uptown, for example), more suburb-activity center commute possibilities (Gulf Freeway to UH or Greenway), and additional circulator service (within Uptown).



An interim step:

It is possible that funding constraints will preclude construction or operation of the full “connected” University Line. But it is important not to let such constraints hobble the system permanently. By implementing the connections that give the “highest bang for the buck” and designing the system so as to allow future construction and operation of the others (by adding track connections even if they will not yet carry service, by designing terminal stations so as to allow expansion, and by planning and reserving right-of-way for extensions), we can make sure the system will be able to meet future demands.



I have neither the ridership data nor the cost estimates to determine which connections make the most sense. But I expect METRO to include these options within the scope of the University Line study to produce such information. These options, in other words, must be on the table.

I do know that the decisions that are being made now and the concrete that will be poured shortly will shape the future of transit in Houston for decades. We are building a system, not a cluster of individual lines. Systems are measured by their connectivity. The University Line must be design to effectively connect to other transit corridors to enable the maximum number of trips, maximize the potential of other transit investments, and make service as convenient as possible for the public.

Appendix 1: proposed connections

Connections from the University light rail line and the Uptown BRT line to the Southwest Freeway METROExpress service, the Westpark METROExpress service, and local buses.

Current METROExpress bus service to Greenway and Uptown is infrequent and unreliable due to congestion on surface streets. Providing a transfer between METROExpress buses bound for Downtown and the University and Uptown lines will provide a much better transit options for people living in Southwest Houston and working in these two major activity centers.

This connection could take place at the Hillcroft Transit Center or at a new transit center further east. I believe both alternatives should be studied. It is important that the connection be convenient and that it include all four lines.

Either transit center location would also be useful for improving local bus service, particularly to Gulfton, the densest area in Houston. This area would benefit greatly from frequent bus service with a direct connection to rail and BRT.

Through service from the University Line onto the Uptown line.

It is clear that the most important destination at the West end of the University Line is Uptown, a major employment and retail center that also has an increasing number of high-density residential developments and the highest concentration of hotel rooms in Houston. Many riders from all over the METRO system will want to travel to Uptown. It would be short-sighted to force them all to transfer. But Uptown is too large to be served by a single station.

The best way to serve Uptown with transit is what METRO is already planning for the Uptown line: a north-south alignment along Post Oak Boulevard. And the best way to connect the University Line to Uptown is for University Line trains to follow the same alignment.

At a future point when the Uptown line is converted from BRT to LRT, the two lines should be operated as one, with through service. This must be accommodated now in designing station geometry. Furthermore, the western extension of the University line – either now or in the future – must be accommodated. The proper connection here is a three-way “wye” so that trains would be able to operate between any combination of Uptown to the north, University to the west, and University to the east.

I do not feel, however, that it is necessary to wait for through service between the University line and Uptown. It is technically feasible to operate LRT in the same lane as BRT on tracks embedded in concrete. If METRO procures BRT vehicles with floor heights that match its LRT vehicles, the two types of vehicle could operate from the same station platforms. Riders would not need to care whether they were boarding BRT or LRT. And no additional right of way would be required over that required for BRT or LRT alone.

My proposal is that the Uptown line be equipped for LRT service at least as far north as San Felipe and that University Line trains operate on this segment. The result would be two overlaid services – Uptown BRT service from Westpark to Northwest Mall and University LRT service from UH to San Felipe – sharing a section of line in Post Oak between Westpark/Richmond and San Felipe. At rush hour, a passenger on a northbound platform would get a Northwest Mall bound BRT every six minutes alternating with a San Felipe bound LRT every six minutes. Uptown travelers connecting to Northwest Mall and the Northwest Transit Center would get one-seat service every six minutes, as would Uptown travelers bound for Greenway, Downtown, Medical Center, or UH. People traveling within Uptown could take either service and would wait no more than 3 minutes.

The cost in implementing this service is not huge – according to METRO’s figures, the cost differential between LRT and “rail-ready” BRT as intended for the Uptown corridor is 20-30 million a mile; Westpark to San Felipe is less than 2 miles. That’s a small cost for much superior service and likely higher ridership. There are obviously scheduling issues involved in combing two lines. However, these issues have been successfully dealt with by more than three quarters of light rail systems operating in the US. I can see no compelling reason not to do this.

Track connections with METRORail Main Street

The University Line will cross the Main Street line at Wheeler. This is a crucial connection since it will connect University Line riders to Downtown and the Texas Medical Center.

The station must be designed with track connections to accommodate through service from line to line. Significant demand exists now or may exist in the future direct Uptown-Downtown, Uptown-Medical Center, and UH- Medical Center service (Direct UH-Downtown service is already served by the Southeast Line). Such service may not run all day, and it may not be implemented immediately, but it should be accommodated.

Connection to the METROExpress Gulf Freeway Line (Eastwood Transit Center)

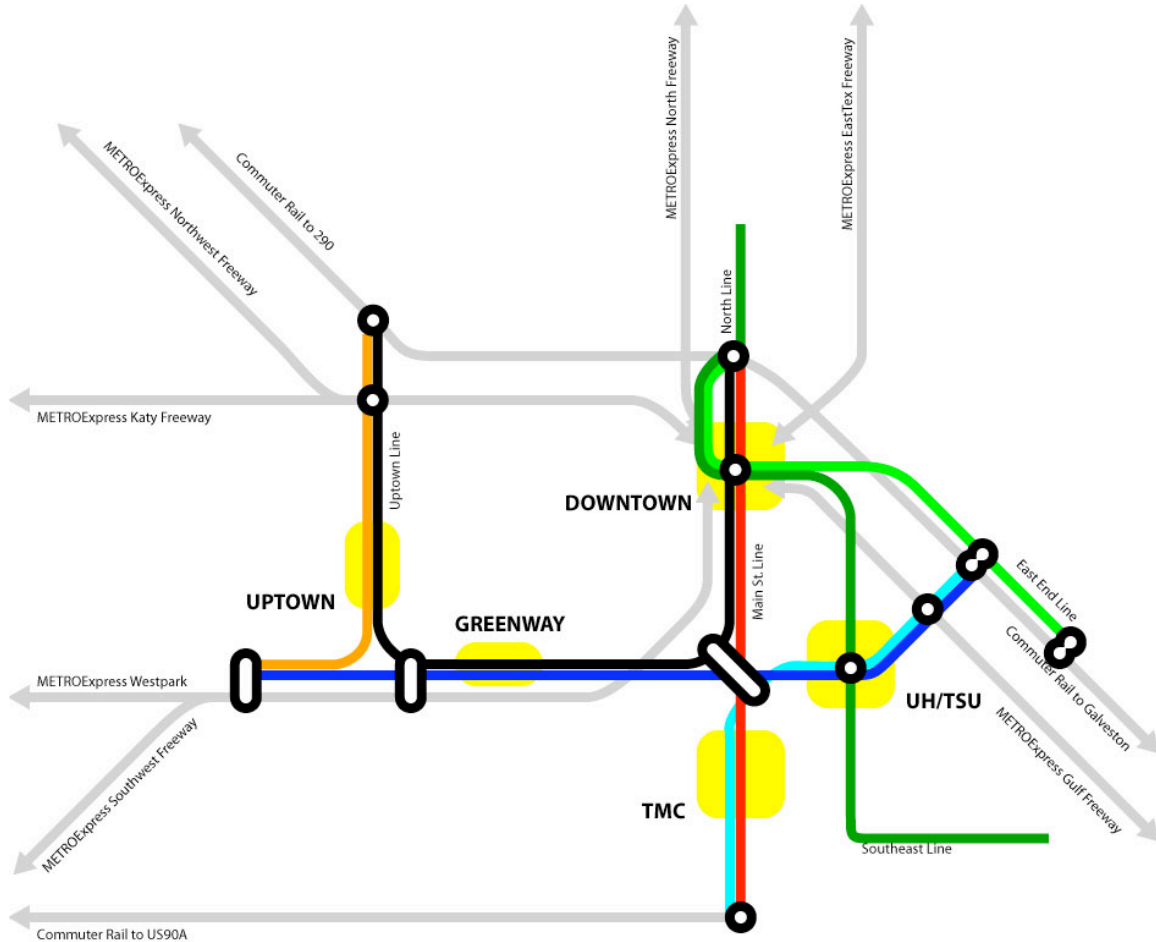
The planned destination of the University Line, UH, is only a few hundred feet from I-45 and its METROExpress service. Linking the two transit lines would enable commuters from Southeast Houston to access UH, TSU, Midtown, the Medical Center, and Greenway Plaza. Conveniently, there is already an existing transit center just across I-45, and, conveniently, there is a road underpass under both the freeway and the railroad tracks that leads there. In addition to connecting the University line to the commuter buses, an Eastwood extension would also provide a convenient link to buses on the East Side. This could be a relatively low-cost way to add significant connectivity to the METRO system.

Extension to the East End Line

From the Eastwood Transit Center it's a straight shot about 1 mile up Lockwood to Harrisburg, the community-preferred alignment for the East End line. This would plug another gap in the METRO system, letting riders from the East Side bound for UH, the Medical Center, Greenway Plaza, or Uptown avoid a detour through Downtown. To further improve connectivity, some of the bus routes that go through the Magnolia Transit Center could be extended here as well. If future Houston-Galveston commuter rail uses the UP railroad tracks along Harrisburg, a commuter rail station could be built here also, creating connections between Galveston and Midtown, TMC, Greenway, and Uptown.

Appendix 2: possible routings

Some of the routings that would be possible with the tracks connections noted above (assuming eventual conversion of the entire Uptown line to LRT):



This would offer direct service:

- From Downtown to all 4 other activity centers
- From Uptown to Greenway and Downtown
- From TMC to Downtown and UH/TSU
- From Greenway to Uptown, Downtown, and UH/TSU
- From UH/TSU to Downtown, Greenway, and TMC

And one-transfer service between any points on the system.

Once again, not all of these routings may make sense in terms of today's ridership demand or tomorrow's ridership demand. But it makes sense to enable them.