

INSTITUTE FOR RATIONAL URBAN MOBILITY, INC.

George Haikalis

President

One Washington Square Village, Suite 5D

New York, NY 10012

Tel: 212-475-3394

Fax: 212-475-5051

www.irusm.org

e-mail: geohaikalis@juno.com

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Response to MTA's Claims of Upper Level Loop Alternative Fundamental Failures

The Institute for Rational Urban Mobility, Inc. (IRUM) is a New York City-based not-for-profit corporation dedicated to advancing efficient urban transportation operations and public investment. This paper responds to MTA's criticism of IRUM's Upper Level Loop Alternative (ULLA) proposal for LIRR East Side Access (ESA) in a February 3, 2005 memorandum from MTA Capital Construction Company (CCC) President Mysore L. Nagaraja to MTA Chairman Peter S. Kalikow.

IRUM enthusiastically supports the establishment of direct LIRR access to the east side of Manhattan and Grand Central Terminal (GCT), if done in a cost-effective, timely manner. IRUM advanced ULLA for that reason and takes strong exception to MTA's critique of the proposal. A detailed analysis of ULLA was undertaken for IRUM by a well-respected Canadian engineering firm – Delcan Corporation – and a prominent U.K. transportation manager and consultant – Michael Schabas. Their reports, posted on IRUM's website, confirm that IRUM's Upper Level Loop Alternative, when compared to the MTA's current Deep Cavern Alternative plan:

1. Meets the service level specified in the ESA Final Environmental Impact Statement (FEIS).
2. Provides faster and more convenient passenger access to the street and subway.
3. Eliminates safety and security problems associated with thousands of passengers deep underground.
4. Will save \$1.2 to \$2.0 billion in capital costs.
5. Can be completed three years earlier than currently projected 2012 completion date.
6. Avoids need for ventilating plants on 44th and 50th Streets, a major community concern.
7. Increases likelihood that ESA is funded and built to completion, given scarcity of funding.
8. Saves operating/maintenance costs by not requiring/including such elements as 17 escalators that would be among the world's longest and new passenger space exceeding that of GCT.
9. Can be constructed and operated without significant impact on Metro-North's operations.
10. Preserves opportunity within GCT for future Metro-North growth.

It would be in the public's interest for the MTA to move forward with IRUM's ULLA proposal, which uses existing trackage within the terminal, and abandon its current Deep Cavern Alternative (DCA) plan. If built, the MTA's DCA plan would be the deepest railroad terminal in the world, 13 stories (155 feet) below Park and Madison Avenues, and require the mining of 1.2 million cubic yards of solid rock in 6 miles of station and track tunnel and the construction of an elaborate system of escalators and concourses for use by arriving and departing passengers.

IRUM calls on MTA to initiate an objective investigation of the Upper Level Loop Alternative, with the active participation of IRUM representatives. The investigation should begin with Metro-North and LIRR conducting instrumented tests to document equipment performance and address concerns regarding operation at higher loop speeds.

To respond in detail to MTA CCC President Nagaraja's February 3, 2004 critique, a point-by-point IRUM response, based on the Delcan and Schabas reports, is presented below:

1. MTA claim regarding service level (AM peak hour train capacity):

"The required service level of 24 trains to GCT in the peak hours cannot be met. The upper level loop would only allow a maximum of 18 trains in the peak hour. In all probability, only 12 trains would be operated to have any chance at a reliable service. This level of service would result in severe overcrowding to LIRR trains with no ability to add more service."

IRUM Response:

The upper level loop alternative (ULLA) operating plan developed by Delcan provides an AM peak-hour service level of 21 trains/hour into GCT, sufficient to handle the 2020 AM peak-hour demand of 28,600 passengers forecast and specified in the FEIS. Should demand increase further, ULLA capacity can be increased, to 24 or even 30 trains/hour, through the addition of stairways and passenger queuing space. The FEIS projected a 48% increase in LIRR AM peak Manhattan-bound ridership from 1995 to 2020, compared to essentially flat ridership for the last 2 decades.

2. MTA claim regarding upper level loop track speed:

"The plan is operationally not feasible as it requires trains to operate at 12 mph around the existing upper level loop track at GCT. This speed cannot be achieved due to a tight radius and inadequate lateral clearances in the loop."

IRUM Response:

A nominal 12 mph operating speed around the upper level loop track is well within passenger comfort levels and safety limits and was the historical New York Central speed limit for the loop. The minimum radius of the upper level loop track is 335 feet, tighter than that found on existing LIRR revenue track. To maintain passenger comfort levels, standard industry practice would restrict maximum operating speed on a flat curve of this radius to 15 mph. To ensure against overturning or derailment, conservative industry practice would restrict maximum operating speed on this curve to 25 mph. Rail wear, noise, and potential low speed wheel climb associated with operation on a curve of this radius can be addressed successfully by installing monitoring devices and curve lubricators using specifically formulated friction modifiers. Lateral clearance limitations for 12 mph loop track operation, if any, will be modest and can be corrected using accepted industry practices – Metro-North currently schedules its five daily trains using the loop into stub-end tracks under the Waldorf-Astoria Hotel applying a 6 mph self-enforced speed limit. Given the benefits of the upper level loop alternative, IRUM calls on the LIRR and Metro-North to conduct instrumented tests, monitored by independent industry specialists, to document equipment performance on the upper level loop track and address concerns regarding operation at higher loop speeds.

2. (Continued) MTA claim regarding single-track loop reliability:

"In addition, this is a single track loop and any disabled train in the loop would have a domino effect and quickly back up and completely shut down service until the obstruction is cleared."

IRUM Response:

While true, the upper level loop alternative (ULLA) is a very robust design. It will provide better operating reliability than the MTA's deep cavern alternative (DCA) plan. There are only two tracks under the East River leading to and from GCT, a single westbound and a single eastbound track, connecting the ESA terminal to existing LIRR trackage in Queens. Regardless of the Manhattan alternative selected, any failure preventing use of either of these tracks will seriously curtail service to a one-track operation or shut down service completely until the obstruction is cleared. Despite the apparent advantage of the MTA's DCA plan, with multiple tracks on two levels, it has approximately three times as many switches and requires a reversing move for every train. The higher incidence of failure resulting from these features will produce a less reliable and more costly operation than ULLA, with its far simpler track layout and run-through operation.

3. MTA claim regarding construction impact on Metro-North service:

"The upper level alternative would have severe impacts on Metro-North. During the multi-year construction period, Metro-North's weekday service would have to be curtailed to a weekend level of service (about a 50% reduction) since three of the four Park Avenue viaduct tracks would need to be removed from service."

IRUM Response:

The construction impacts of the upper level loop alternative are modest and manageable. All four Park Avenue tunnel/viaduct tracks would remain open to service at all times. These four tracks are the true capacity constraint for Metro-North's access to GCT. The four tracks expand to 10 approach tracks between 57th and 52nd Streets, before spreading into the terminal's 46 platform tracks. One of these 10 approach tracks is currently out of service. Most of the construction would take place off-peak or on weekends. During two brief construction periods, three of the nine tracks would be taken out of service during peak periods. During these periods, Metro-North would alter its operating plan, perhaps restoring some of the track segments currently out of service in this vast terminal – the world's largest railway station. The impact would be minimal, if undertaken during successive July-August summer periods. Projects of comparable complexity have been undertaken successfully in the recent past – NYC Transit completed its local-express connection of the 63rd Street tunnel in Queens without any interruption of peak hour subway service; and during the five-year reconstruction of the four-track Park Avenue viaduct, Metro-North operated during AM and PM peak periods with one of the four tracks out of service.

3. (Continued) MTA claim regarding permanent impact on Metro-North service:

"Metro-North service would also need to be permanently reduced with the loss of 4 out of the 9 approach tracks to the upper and lower level platform tracks."

IRUM Response:

Following completion of the upper level loop alternative, Metro-North would have eight approach tracks, an average of two for each Park Avenue mainline track and generous by any railway standard, allowing for future expansion of Metro-North service.

4. MTA claim regarding passenger space:

“No additional circulation space, waiting space and exiting capacity is created to accommodate the additional 160,000 daily commuter trips that would come to GCT. This would result in severe overcrowding throughout GCT and would create service problems for both Metro-North and LIRR.”

IRUM Response:

Existing space can be improved to accommodate LIRR passengers in GCT's upper level. Retail and back office space in or adjacent to the Biltmore Room can be relocated and new cross passageways at 45th and 48th Streets and an additional stairway to the 47th Street passageway would serve passengers from points north of the terminal. Existing public space in 383 Madison Ave. and 270 Park Ave, adjacent to these passageways, can be converted to additional space for waiting passengers. More space can be added in the future, as an integral part of the redevelopment of the Roosevelt Hotel and Vanderbilt Concourse Building sites. These access systems, just below street level, avoid the inconvenience, lost time, safety and security problems associated with passenger access and egress 155 feet underground in the MTA's deep cavern alternative plan.

5. MTA claim regarding LIRR Port Washington access to GCT:

“The upper level loop alternative also excludes the entire LIRR Port Washington branch from having direct access to GCT which would require everyone to transfer at Woodside.”

IRUM Response:

The upper level loop alternative only deals with Manhattan operations. The specific routing of LIRR trains in Queens and Long Island is independent of the Manhattan alternative selected.

6. MTA claim regarding projected savings:

“Several high cost items such as rolling stock, yards, ADA compliance, ventilation and protecting MNR and NYCT operations during construction are completely ignored. Accounting for these costs would add back much if not all of the projected savings of the alternative proposal.”

IRUM Response:

No costs were ignored or unaccounted for in the upper level loop alternative (ULLA). The estimated \$1.2 billion (60%) savings in the current \$2.0 billion projected cost of the MTA's deep cavern alternative (DCA) plan in Manhattan are totally independent of non-Manhattan elements of the ESA project. The ULLA estimated cost includes provision for ADA compliance and ventilation, and for protection of Metro-North and NYCT operations during construction. Items such as rolling stock and storage yards remain unchanged from the DCA plan. On February 8, 2004, the FTA reported an increase in the estimated cost of ESA from \$5.3 billion to \$7.7 billion. The FTA's \$2.6 billion contribution to the project, 50% of the old cost estimate, remained unchanged – the entire \$2.4 billion cost increase will have to be state funded. The lower cost Upper Level Loop Alternative may be the only way for the ESA project to reach completion, given the current and projected condition of the State of New York's financial resources.