INSTITUTE FOR RATIONAL URBAN MOBILITY, INC.

George Haikalis
President

One Washington Square Village, Suite 5D
New York, NY 10012 212-475-3394
geo@irum.org www.irum.org

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Mr. RJ Palladino, Senior Program Manager
NJ Transit Capital Planning
One Penn Plaza East—8th Floor
Newark, NJ 07105
RPalladino@njtransit.com

Ms. Amishi Castelli
Federal Railroad Administration
One Bowling Green, Suite 429
New York, NY 10004
Amishi.Castelli@dot.gov

Dear Mr. Palladino and Ms. Castelli:

Re: IRUM Comments on Hudson Tunnel DEIS

The Institute for Rational Urban Mobility, Inc. (IRUM), is a NYC-based non-profit concerned with reducing motor vehicle congestion and improving the livability of dense urban places. The Hudson Tunnel project is an important element of such an effort, and IRUM has followed the development of this project with considerable interest.

In a November 30, 2016 letter to USDOT and NJ Transit, IRUM submitted comments on the Scoping Report for the DEIS for the Hudson Tunnel project. It asserted that the Scoping Report's responses to IRUM's May 17, 2016 scoping letter and IRUM report, The Hoboken Alternative, were "deeply flawed." Either through negligent carelessness or willful subversion of the truth, the errors IRUM had pointed out were not corrected. The DEIS instead repeated and expanded upon these errors in a variety of permutations, resulting in the Hoboken Alternative being eliminated from study. The DEIS treatment of the Hoboken Alternative was seriously flawed. IRUM's earlier documents are attached herein.

The DEIS recounts the "obstacles" facing the Hoboken Alternative, while making no mention of the substantial benefits that would result from this routing cited in IRUM's letter of November 30, 2016. The DEIS presents a very flawed, one-sided evaluation of the Hoboken Alternative. The DEIS' specific criticisms and IRUM's rebuttal of them are presented below.

Among the substantial benefits of the Hoboken Alternative is the routing of the new tunnels by way of the Hoboken-Jersey City waterfront business district, New Jersey's largest in terms of class "A" office space. This district is an important economic engine for Hudson County. It serves two cities with a combined population of nearly 300,000 persons, a far larger number than the 16,000 persons that are currently served by the route through Secaucus. The Hoboken Alternative would also connect with the Hudson-Bergen light rail line, linking other communities in Hudson County, extending from Bayonne to North Bergen. The improved connectedness to regional transit for this much larger area clearly conveys a substantial public benefit, making the Hoboken Alternative superior to the Proposed Project relative to this criterion. IRUM asserts that the Hoboken Alternative will have a lower net total public cost than the Preferred Alternative, thereby achieving this benefit at a negative cost.

The geographic boundary of the "study area" defined in the scoping for the DEIS excludes this alternative, thus denying the benefits of enhanced rail access to residents and businesses in the cities of

Hoboken and Jersey City. However, because that boundary artificially eliminates an otherwise feasible alternative, it is an invalid means of screening out the Hoboken Alternative.

Furthermore, the Preferred Alternative disproportionately advantages well-to-do communities while unfairly denying the sizeable minority and low-income populations of Jersey City and Hoboken the Project's improved access to Manhattan. These serious concerns are not addressed in Chapter 7, Socioeconomic Conditions nor in Chapter 22, Environmental Justice, of the DEIS. Quite the opposite, the DEIS identifies the temporary and permanent negative impacts of the Preferred Alternative on these populations, including noise, disruption and loss of neighborhood amenity (Section 22.5.1), which are to be endured without countervailing benefits.

The portion of the Preferred Alternative routing located in New Jersey requires the costly construction of new bridges and embankments in the Hackensack Meadowlands. Table 11-10 identifies the impacts as significant damage to 8.005 acres of delineated wetlands and permanent alteration of stormwater flow.

The DEIS discloses only a portion of the cumulative impacts of four-tracking the existing rail line that will occur in reasonably foreseeable subsequent phases of the Preferred Alternative. The Preferred Alternative is of limited utility without its related companion project - the Portal Bridge Capacity Enhancement Project, (FRA ROD Dec. 23, 2008). This $3.0 billion to $4.0 billion project has not moved forward because of limited funding. As described in the 2008 ROD, the project includes a new 3-track northern bridge and a new 2-track moveable southern bridge across the Hackensack River. As described in the 2008 ROD some 6.4 acres in the Hackensack Meadowlands would be disturbed. In the July 2017 ROD for the NEC FUTURE program the Portal Bridge is described somewhat differently and may be subjected to a more detailed analysis. The cumulative impacts of the Portal Bridge Capacity Enhancement Project, the Secaucus Loop and the four-tracking plan west of the Portal Bridge are not discussed in the Hudson Tunnel DEIS. This is a classic example of segmentation, and is a clear violation of NEPA.

The Hoboken Alternative makes use of existing NJ Transit-owned rail property and avoids these negative impacts on wetlands. It also eliminates the need to acquire additional properties in New Jersey. In contrast, the Preferred Alternative requires the costly acquisition of 117 parcels to accommodate the tunnel alignment (Chapter 6B, Appendix 6). These properties are located in North Bergen and Union City on top of the Palisades, and in Hoboken and an additional 11 temporary and 12 permanent surface property acquisitions are needed in Secaucus and North Bergen (6B.3.1.2).

The Hoboken Alternative routing allows the new Hudson River rail tunnels to connect directly to NJ Transit's existing 3-track Morristown Line movable bridge across the Hackensack River. When combined with the existing two-track Portal Bridge adequate mainline rail capacity becomes immediately available. With the redundancy of the two bridges, properly maintained and with marine traffic carefully managed, no additional crossings are needed in the immediate future.

Finally, because of its peculiar insistence on not increasing Trans-Hudson capacity, the DEIS fails to take advantage of an alternative that IRUM asserts will double that capacity -- to be achieved sooner and at a cost lower than that of the Preferred Alternative. The Cumulative Impacts analysis of Trans-Hudson Capacity Expansion, Section 20.6.4.1, makes it clear that the Gateway Project is intended to achieve that doubling. If the Project Purpose and Need can be achieved by a project that also achieves a prime objective of a future multibillion project, it is highly unethical--if not actually illegal--of a public agency to not consider it fully. Like the Preferred Alternative, the Hoboken Alternative can be operated without an increase in service. However, upon the completion of a comprehensive regional rail plan for the entire 22 million-person NY-NJ-CT metropolitan area, the nation's largest, that added capacity would be available to serve the region. This is obviously a far more appropriate approach to expending public resources.

IRUM's response to the eight bullet points identified on page 12 of Appendix 2 as "obstacles" of the Hoboken Alternative in the DEIS assessment:

1. "This alternative would require high-speed connecting tracks between the NEC and M&E lines, in a complex area where NJ TRANSIT has its Meadows Maintenance Complex and a major railroad electrification substation."

IRUM Response: The existing Eastbound Waterfront Connection, located in this "complex area", has been in service for over two decades. A similar connection for westbound trains, proposed at the same time, but not funded, is currently identified as an element in NJ DOT's State Rail Plan. Both connections can sustain speeds that are appropriate for this location which is only a short distance from the movable bridge across the Passaic River and platforms at Penn Station, Newark. Higher speeds are limited at this location by the design of existing turnouts at the interlocking, but space is available for more generous layouts if warranted.

2. "If all trains that currently terminate at Hoboken Terminal were instead routed to PSNY, this alternative would require substantial expansion at PSNY, which is not a part of the Proposed Action and does not meet the purpose and need for the Project."

IRUM Response: IRUM's proposal for the Hoboken Alternative does not require routing all trains that currently terminate at Hoboken Terminal to PSNY. That is not an operationally mandated consequence of the Hoboken Alternative. The decision on how many trains to send to PSNY is not a part of the Proposed Action, and therefore does not need to be decided now. Adding additional Trans-Hudson capacity does not mean it must be used.

However, IRUM notes that routing the two new tunnels by way of Hoboken allows all four tunnels to be used eventually, taking advantage of the substantial existing NJ Transit infrastructure across the Meadowlands. The initial use of the new tunnels via Hoboken could be identical to the use envisioned in the Preferred Alternative, allowing repairs on Amtrak tunnels to be completed. Once the Hoboken Alternative is in place and the tunnel repairs are completed, a four-track railroad becomes available to provide much-needed expansion of Trans-Hudson regional rail service.

This is in contrast to the Preferred Alternative, which would not produce any gain in train capacity for the expenditure of $12.9 billion of public funds. The Preferred Alternative constrains the number of trains crossing the Hudson, since only the two existing tracks west of Secaucus Station would cross the Hackensack River. This is a serious shortcoming and disadvantage of that plan.

The Hoboken Alternative clearly meets the purpose and need of the Proposed Action. The first stage of this alternative, as described in the IRUM report, would be to construct two new Hudson River tunnels and an on-line "bathtub" station just south of Hoboken Terminal. This construction activity would be located on NJ Transit-owned property, serving as a launching location for tunnel boring machines for the cross Hudson tunnels. This location avoids the costly and disruptive property taking needed for the Preferred Alternative, described in the DEIS.

The DEIS claim that the Hoboken Alternative would require a substantial expansion at PSNY is simply not true. Operational changes, like thru-running from Long Island to New Jersey using the existing tracks and platforms at Penn Station, would permit a significant increase in peak hour service once the Hoboken Alternative becomes operational. These same operational changes would be possible with the Preferred Alternative, but would be of virtually no use since its capacity is limited at the Hackensack River.

The "substantial expansion" mentioned in this DEIS bullet point may refer to Amtrak's Gateway Plan, which would be costly and disruptive. This expansion would be avoided, in any event, by running NJT trains thru Penn Station and continuing on to Grand Central and north to the Bronx Westchester and Connecticut. Critical information about the Penn Station-Grand Central link, such as details about its plan and profile, subsurface conditions and impacts on abutting property, which were studied in great detail in the Access to the Region's Core (ARC) study in 1998 have been kept confidential, despite repeated requests from New York and New Jersey transit advocates and community organizations. While these concerns were expressed in IRUM's November 30, 2016 letter, they remain unaddressed in the DEIS.

3. "This alternative's river tunnel would be substantially longer than that of the Proposed Action, raising the possibility of additional impacts in the Hudson River from construction."

IRUM Response: While the portion of the alternative under the Hudson River is 1.65 miles compared to the Proposed Action's under-river tunnel of 0.97 miles, the impacts in the Hudson River are largely dependent on the grade. Grades are most important near the shore, before additional depth can be achieved. A steeper grade can reduce or even eliminate impacts on the riverbed. IRUM's 2009 Hoboken Alternative report proposed two grade options – a 2% grade and a 3% grade, comparable to the grades considered in the February 2007 DEIS for the ARC tunnel.

The Proposed Action described in the DEIS proposes only a single grade of 2.1% on the eastern approach to the river. In order to provide adequate clearance for tunnel boring machines a "ground improvement effort" is required to harden the river bottom, as described in the DEIS. This includes the construction of a coffer dam and the injection of cement into the river bottom. This soil improvement would occur for about 550 feet in length above the two bored tunnels.

The alternative profiles for the Hoboken Alternative are described in Figure Three in the IRUM report. A 2% grade would require a comparable ground improvement effort of 700 to 750 feet in length on the western shore of the river. The profile on the eastern shore would be identical to the Proposed Action. Little if any ground improvement effort would be needed near either shore if the 3% grade were chosen.

It should be noted that NJ Transit is advancing its Long Slip Fill and Rail Enhancement Project (FONSI October 20, 2016 FTA). NJ Transit would fill in 4.3 acres of Long Slip, a channel of the Hudson River immediately south of the Hoboken Terminal to add a 6-track, 3 high level platforms stub terminal adjacent to an underutilized waterfront terminal. This terminal would be abandoned and repurposed in the IRUM proposal. Clearly, a comprehensive regional rail plan that deals with Hudson River rail capacity, resiliency plans and redevelopment of rail properties is needed.

4. "This alternative's longer tunnel would increase train travel time between Newark and PSNY, effectively reducing the capacity of the NEC to process trains."

IRUM Response: This misstatement, made in the project's scoping report, is again repeated here. First off, the tunnel itself is actually shorter, not longer. The distance from the portal in Manhattan at 10th Avenue to the New Jersey portal in North Bergen, shown in Figure 2.3, is 2.53 miles. The distance from the same portal in Manhattan to the proposed portal in Hoboken, described in Figure Two of the IRUM report, is 2.24 miles. The distance between Penn Station, Newark and Penn Station, New York is very nearly the same, whether by the existing route via Secaucus or the proposed IRUM route via Hoboken. The route described in the Preferred Alternative, in fact adds 0.3 miles compared to the existing route, since it requires a bow to the south and then another bow back to the north.

The DEIS erroneously describes IRUM's Hoboken Alternative in Figure 3 of Appendix 2 of the DEIS. IRUM's route is adequately described in Figure One of its Hoboken Alternative report. The Hoboken

Alternative would be similar to the Preferred Alternative east of the Manhattan bulkhead, but then after crossing the main channel it would curve south parallel to the Hudson River shoreline. When heading west, it would skirt the Hoboken Terminal structure, avoiding costly underpinning of this historic structure. The differences, in any event, have little impact on likely travel time, assuming an on-line station at Secaucus or Hoboken. It is important to note that capacity is a function of headways, and is not necessarily related to elapsed travel time, as the DEIS also misstates.

5. "This alternative would require sharp curves exiting Hoboken station and approaching the Manhattan shoreline, which would reduce train speeds."

IRUM Response: In the IRUM paper, a 1,000 foot radius curve is proposed as the tunnels exit or approach the on-line Hoboken Station. This would have little effect on elapsed travel time for trains stopping at Hoboken, since trains are accelerating or decelerating in any event. Almost all trains using the Hoboken route would ordinarily stop at this station because this would be a busy transit hub, just as all trains presently stop at the existing on-line station in Newark. When both tunnel routes become available, Amtrak could route non-stop express trains by way of Secaucus. Curves at the Manhattan shoreline are similar to those in the Preferred Alternative.

6. "This alternative would require far more railroad infrastructure, and therefore would have a higher cost, than the Proposed Action presented in the Project's Scoping Document."

IRUM Response: The Hoboken Alternative would cost less, not more, than the Proposed Action alignment, which requires longer tunnels and the addition of a two-track line along the existing embankment through the Hackensack Meadowlands, extending to the eastern approach to Secaucus Station. Even with the "bathtub" station, described in the IRUM paper, the "net" cost of the Hoboken Alternative would be significantly less, than the cost of the Proposed Action. This is because NJ Transit's current plans for extensive land fill, and expansion to the south of Hoboken Terminal would be avoided. Furthermore, the waterfront land now occupied by NJ Transit's terminal and servicing facilities could be abandoned, and the land sold as "raw real estate". The sale of this valuable waterfront parcel would offset, to a significant degree, the capital cost of the IRUM alternative.

7. "This alternative would require larger ventilation structures for the longer tunnel, which may be difficult to site on the New Jersey and Manhattan shorelines."

IRUM Response: IRUM's Hoboken Alternative calls for shorter, portal-to-portal tunnels than the Preferred Alternative, invalidating the DEIS's contention that larger ventilation structures would be needed. A detailed comparison of ventilation requirements of both alternatives would be needed to back up this contention in the DEIS.

8. "Construction adjacent to Hoboken Terminal could result in adverse effects to that station, which is historic. In addition, if train service to Hoboken Terminal were terminated as suggested by the commenter, this would constitute an adverse effect to that historic structure by removing the train terminal from its original context."

IRUM Response: Quite the opposite! The Hoboken Alternative would have positive rather than adverse impacts on the historic Hoboken Terminal and train shed. Many railway terminals around the world have been "repurposed" to the benefit of surrounding communities. As noted in IRUM's earlier paper, it would be important to involve the cities of Hoboken and Jersey City early in the planning stage for this new use of a priceless heritage. Efforts for enhanced resilience of this waterfront property should be fully coordinated with the proposed on-line station described in the paper.

A detailed assessment of the environmental impacts of IRUM's proposed Alternative should be made and compared with the proposed NJ Transit rail facilities expansion south of Hoboken Terminal. The NJ Transit expansion to the south would not be needed if an online station were constructed as described in the Hoboken Alternatives paper. This would constitute an avoided cost, strongly affecting the public's total cost of rail infrastructure in the Hudson River vicinity.

Other IRUM comments made in its November 30, 2016 letter on the DEIS scoping were ignored.

By advancing the Hoboken Alternative, USDOT and NJ Transit would be able to complete a full four-track regional rail system across the Hudson River, linking Penn Station, Newark with Penn Station, New York, far more quickly and at substantially less cost than the current Hudson Tunnel proposal. The Preferred Alternative described in the DEIS only produces a temporary bypass to allow repairing the tunnels. The Hoboken Alternative offers a complete solution, avoiding the substantial disruption of treasured wetlands resulting from any construction in the Hackensack Meadowlands. This is a feasible alternative that must be thoroughly considered in accordance with the requirements of the Clean Water Act.

With the Hoboken Alternative in place, a four-track railroad becomes available between Penn Station, Newark and Penn Station, New York, avoiding the costly and environmentally disruptive four-tracking of the existing rail embankment through the Hackensack Meadowlands west of Secaucus. There would be no need for a second Hackensack River bridge in a subsequent phase.

IRUM's November 30, 2016 letter urged that current plans for the Portal Bridge replacement be reviewed and a detailed benefit-cost analysis conducted. Given the limited marine traffic that requires this movable bridge to be opened, IRUM called for consideration to be given to permanently fixing this bridge in the closed position. The DEIS did not address these suggestions.

The beneficial cumulative effects of linking Hoboken with Penn Station, and then linking Penn Station with Grand Central are substantial. These were described in the IRUM letter but ignored in the Chapter 20 – Indirect and Cumulative Effects, in the DEIS. Creating a high quality "regional rail trunk-line" that links these major business hubs makes the region better able to compete with growing business centers in Europe and Asia. During non-peak hours this trunk line would attract much of the cross-Hudson regional rail use, releasing track space through the existing Penn Station tunnels to accommodate high-performance container freight trains, and appropriately dimensioned conventional freight cars that met reliability requirements. This recommendation was not addressed in the DEIS.

The issue of choice of grade, discussed above in rebutting item 3, becomes another potential beneficial effect. It should be noted that the Lower Level of Grand Central Terminal is connected to the Park Avenue rail tunnel with four rail tracks, two with a 3% grade and the other two with a 2.7% grade. This would be the "ruling grade" for a Hoboken-Penn station-Grand Central "trunk-line" long favored by rail advocates and community interests. Electric multiple-unit (EMU) rail cars have been in use to reach the Lower Level of Grand Central for over a century. As was mentioned on page 5 of the Hoboken paper, the LIRR includes a 4,200 foot long section of 3% grade to reach the East River tunnels, which is under construction. Metro-North is currently completing a procurement of a large fleet of new EMU cars, that would also be suitable for use in the new Hudson Tunnel. NJ Transit is considering an expansion of its EMU fleet. Economies of scale in rail car equipment procurement should not be ignored in the preparation of a long-range regional rail plan for the metropolitan area. The choice of grade, whether 2% or 3% should be based on a careful analysis, which should include environmental impacts as well as rail operating factors.

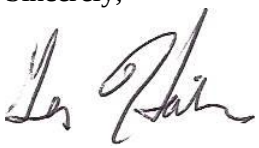
The Hudson Tunnel project is largely a **metropolitan** issue, not a **national** one. Only 5.2% of morning peak-hour, peak-direction rail passengers using the existing tunnels are on Amtrak trains. While Amtrak has developed plans for repairing its tunnels, which were damaged by Hurricane Sandy in 2014, Amtrak considers them safe and operational for years to come. Amtrak can handle its passengers using its existing tunnels, by repairing them one tunnel at a time. The predominant users of these tunnels are NJ Transit commuter trains, carrying New Jersey residents to high-paying jobs in the Manhattan Central Business District (CBD). New Jersey has the second highest per capita income in the nation. High-quality regional rail service is important to New Jersey and New York to maintain the economic and environmental well-being of both states. While the region clearly needs to move forward to repair the Amtrak tunnels, the fear-mongering associated with this project exaggerates the problem and diminishes the ability of public agencies to thoughtfully assess options and prepare a coherent plan.

The need for locating two additional tracks immediately adjacent to the two existing Amtrak NEC tracks via Secaucus, and not via Hoboken is not substantiated in the DEIS. To the extent that that alignment was driven by the hope that the tunnel rehabilitation would be identified as Amtrak's problem, resulting in a substantial portion of the cost coming from Federal sources, that outcome currently seems remote. Residents of West Virginia or South Carolina, two of nation's poorest states, are not likely to pay a substantial portion of the cost of providing capacity for high-end New Jersey commuters to Manhattan. With the Project's cost growing, it is critical for New York State to recognize the benefits of improved access from the West-of-Hudson labor market, which is about half of the total suburban labor work force in the region, and join forces with New Jersey to devise a more cost-effective solution, such as the Hoboken Alternative proposed by IRUM.

IRUM asserts that the Hoboken Alternative serves the Project goals of improving service reliability in a cost-effective manner (Goal 1); of ensuring that the North River Tunnel rehabilitation occurs as soon as possible (Goal 2); and of minimizing impacts on the natural and built environment (Goal 3)) far better than the Preferred Alternative. It was unprofessional and improper for the preparers of the DEIS to eliminate the Hoboken Alternative from study on the basis of factual inaccuracies in the Scoping Report that had previously been pointed out by IRUM but had not been corrected. IRUM requests those errors be corrected, the Hoboken Alternative be fully studied, and the DEIS be recirculated for another round of public comments.

IRUM welcomes an opportunity to discuss these comments with Project staff, and to clarify any questions that might remain. Please contact us at your earliest convenience.

Sincerely,



George Haikalis, President
Institute for Rational Urban Mobility, Inc. (IRUM)

Copies to:
Mayor Steven M. Fulop, Jersey City
Mayor Dawn Zimmer, Hoboken
Senator Bob Menendez
Senator Cory Booker
Jersey City Councilmember Candice Osborne
Other interested parties

INSTITUTE FOR RATIONAL URBAN MOBILITY, INC.

George Haikalis
President

One Washington Square Village, Suite 5D
New York, NY 10012 212-475-3394
geo@irum.org www.irum.org

November 30, 2016

Mr. RJ Palladino, Senior Program Manager
NJ Transit Capital Planning
One Penn Plaza East—8th Floor
Newark, NJ 07105
RPalladino@njtransit.com

Ms. Amishi Castelli
Federal Railroad Administration
One Bowling Green, Suite 429
New York, NY 10004
Amishi.Castelli@dot.gov

Re: Hudson Tunnel Scoping Document

Dear Mr. Palladino and Ms. Castelli:

The Institute for Rational Urban Mobility, Inc. (IRUM), is a NYC-based non-profit concerned with reducing motor vehicle congestion and improving the livability of dense urban places. A key IRUM effort is to make the case for transforming the three commuter rail lines serving the NY-NJ-CT metropolitan area into a coordinated regional rail system with frequent service, integrated fares, and thru-running, first at Penn Station and then by linking Penn Station with Grand Central Terminal. The Hudson Tunnel project is a key element of such an effort, and IRUM has followed the development of this project with considerable interest.

IRUM submitted scoping comments on the Hudson Tunnel project in a May 17, 2016 letter to the project team, along with a lengthy attachment – The Hoboken Alternative (copies attached).

1. NJ Transit and USDOT responses to IRUM's comments shown in the Hudson Tunnel Scoping Summary Report are deeply flawed.

On Page 31 of the Scoping Summary Report, the Hoboken Alternative is wrongly dismissed as follows:

"An alternative that passes near the Hoboken Terminal, would be substantially longer (with proportionally greater cost) than alternatives that go more directly between the NEC alignment near Secaucus and PSNY."

This is simply wrong. The "Hoboken Alternative" paper, submitted as part of IRUM's comments, points out that the length of this routing, as measured in distance between Penn Station, New York and Penn Station Newark would be the same whether by way of the existing Amtrak routing via Secaucus or by way of the proposed routing via Hoboken (and Jersey City).

Also, without any substantial analysis, is the claim that the cost of this alternative would be proportionately greater. As described in the IRUM paper, the likely cost of the Hoboken Alternative, would be considerably less than the "preferred alternative", because new embankments and bridges through the Hackensack Meadowland would not be needed. The Hoboken Alternative would make use of the "Westbound Waterfront Connection" project described in the April 2015 New Jersey State Rail Plan. A true benefit-cost comparison of these two routings should be an element of the scoping for the alternatives section of the Hudson Tunnel Scoping.

Comments from Jersey City Mayor Steven M. Fulop and Hoboken Mayor Dawn Zimmer also indicated support of an on-line station near the Hoboken Terminal. The Summary Scoping Report response was that a station would add time and reduce capacity.

IRUM's plan for an on-line station near Hoboken calls for a four-track station, which will not reduce capacity. While a station stop will increase running time, it is well worth it if the station improves the utility of the Hudson Tunnel project. As Mayor Fulop pointed out, in his comment, the provision of a transfer with the Hudson-Bergen Light Rail network would "enhance operational flexibility".

Equally important, an on-line station at Hoboken would improve access to the Jersey City-Hoboken Waterfront business district, the states' largest concentration of Class A office space. While the existing tunnel route would continue to have an on-line station at Secaucus with its current population of 16,264 residents, an on-line station adjacent to the Hoboken Terminal would greatly benefit Jersey City's 247,597 residents and Hoboken's 50,005 residents, many with lower incomes. This should be considered within the economic impact and environmental justice scoping analysis of the Hudson Tunnel EIS.

An on-line station will also enhance access to the East and would be a major boost to economic activity in Jersey City and Hoboken, providing not only a much needed link to Manhattan's growing West Midtown development and to East Midtown, the nation's largest activity center, but also to The Bronx, Westchester and Connecticut.

As described in IRUM's paper, routing the new tunnels just south of the Hoboken Terminal train shed permits construction to commence immediately on railroad property already owned by NJ Transit. This will greatly speed completion of new tunnels, while avoiding the costly and time-consuming acquisition of additional parcels in the northern part of Hoboken, or adjacent to the existing Amtrak line through the Hackensack Meadowlands. IRUM again urges NJ Transit and USDOT to seriously consider this alternative.

IRUM's Hoboken Alternatives paper was prepared in 2009, five years before the area was struck by Hurricane Sandy. The plan and profile for the tunnel routing through the Hoboken Terminal area, described in the IRUM paper, could reinforce resilience measures currently being considered for rail facilities this area, which were substantially damaged by the storm. These measures should be productively integrated with the tunnel plan. Substantial cost savings could result if these initiatives were considered collectively. Furthermore, as part of a regional rail planning effort, the utility of retaining rail maintenance and midday car storage facilities on this valuable waterfront can be re-evaluated.

Clearly, the Hoboken Alternative should be carefully considered within the scoping for the EIS.

2. Regional impacts of doubling capacity of the Hudson River rail tunnels are ignored

Expediting completion of the Hudson Tunnel project by routing the two new tracks by way of the Hoboken Terminal area, and using NJ Transit tracks west of Hoboken as described in the IRUM paper, will speed the benefit to the region of having four mainline tracks between Penn Station, Newark and Penn Station, New York. The Scoping Summary Report fails to acknowledge comments by IRUM, and others, citing the urgent need for a more comprehensive improvement plan for regional rail facilities in the 22 million person NY-NJ-CT metropolitan area. In its comments on the scoping document, IRUM called for consideration of the Access to the Region's Core (ARC) Major Investment Study (MIS) Alternative G described in its 31- page Summary Report. This alternative called for extension of the new Hudson River tunnels east of Penn Station, under 31st Street and continuing north under Park Avenue, linking with platform tracks in the Lower Level of Grand Central Terminal. IRUM has long called for

full disclosure of all relevant analysis of the MIS, which was overseen by NJ Transit, MTA and the Port Authority of NY and NJ, and funded in part by USDOT. Again, this will expedite and reinforce public trust that will certainly be needed to make available the substantial resources to advance this important project.

Preparation of a comprehensive regional rail plan can begin immediately, well before repair work on the existing tunnels is completed. The metropolitan region's global competitors, especially in Asia and Europe are advancing new regional rail connections, while the NY region suffers from three moribund, disconnected regional railway systems, each pursuing its own destiny.

The Hoboken-Penn Station-Grand Central trunk line becomes the primary regional rail trunk line, not unlike London's ambitious Cross-Rail project. The existing Amtrak tunnels through Penn Station then become a secondary, but critical trunk line, used to help accommodate peak period rail traffic.

Furthermore, this trunk line link transforms the southern portion of Penn Station into a "thru-running" station, in contrast to Amtrak's Gateway Plan which would expand the existing station to the south, with a new seven track "stub" terminal. Several comments were raised in the scoping report about this expansion plan, with its substantial dislocation of current businesses with thousands of employees. The response to these scoping comments does little to placate these legitimate concerns, particularly since links to the Gateway Plan are included in the Hudson Tunnel's website. A thru-running station using existing tracks and platforms at Penn Station would have a far greater capacity than the Penn Station South stub-terminal plan while avoiding its cost and disruption.

Finally, the heightened community concerns about plans to move forward with the relocation of the Port Authority Bus Terminal to a new location to the West in Midtown would be best dealt with by preparing a comprehensive multimodal plan for accommodating Trans-Hudson passenger traffic.

In summary, IRUM's trunk line plan would avoid the need for Gateway South and the bus terminal expansion and relocation.

3. Lack of discussion of alternative repair strategies for the Amtrak tunnels

On a personal note, as a Life Member of the American Society of Civil Engineers (ASCE), I must raise a very serious concern about the unwarranted level of fear-mongering contained in the Scoping Report. This seems to have headed off a robust discussion of credible alternative repair strategies, as described in the HNTB September 2014 "Structural Assessment of the Amtrak Under River Tunnels in NYC Inundated by Super Storm Sandy". That report is marked "Confidential" and is not listed in the Hudson Tunnel Project library.

The HNTB study recommended a full replacement of the bench walls throughout Amtrak's Hudson River tunnels, even though only a small portion of the bench walls in each of the tunnels was actually damaged during the storm. The study pointed out that if bench walls are replaced at only those locations where they were damaged and current National Fire Protection Association (NFPA) standard were applied, the bench walls would have a discontinuity in height and would be difficult for passengers to use for emergency egress. Use of bench walls for emergency egress is problematic at best, since many persons with mobility limitations could not use them. Alternative evacuation techniques, like the deployment of "rescue trains" and a move toward articulated regional rail trains should be considered. Furthermore, advances in wireless communications could largely eliminate the need to locate wires in bench walls.

Several comments contained in the Scoping Report call for consideration of rail freight options within the Scope of the EIS. IRUM has long maintained that with the completion of a second pair of Hudson River

tunnels that would form a Hoboken-Penn Station-Grand Central "trunk line", described above, the existing Penn Station route could accommodate a significant amount of rail freight - off-peak and weekends. Low-profile, high-performance container trains, similar to those operated on many European railways systems, could use the existing Penn Station route, without any changes in its dimensions. Similarly, many existing conventional rail freight cars could be operated through the tunnels, if they met clearance and reliability requirements. Many bulk movements in the NY region, that must use overcrowded highways, could be shifted to the original tunnel route, once major rail passenger flows are shifted to the proposed "trunk line". IRUM urges analysis of these freight options within the tunnel EIS.

The HNTB study also called for replacement of ballasted track beds in the tunnels with direct fixation concrete roadbeds, the current industry standard in tunnels. IRUM urges that any consideration of full replacement of the existing ballasted tracks with a direct fixation system should include an examination of options to substantially increase the clearance dimensions of Amtrak's Hudson River and East River tunnels to allow larger rail freight cars. These tunnels have an extra two feet of concrete lining installed by the Pennsylvania Rail Road a century ago, when the tunnels were a "pioneering" effort. In any event, NYC Transit's fast-tracking technique to replacing track beds in short segments on weekends should be considered as an option to reduce the window of time track capacity is lost, even after the new tunnels are completed.

The appropriate repair strategies should be examined by an independent third-party entity, perhaps an overseas agency that is not beholden to the whims of the region's rail institutions. It is important to note the absence of a technical university in the NY area that specialize in railway and rail transit engineering, despite the concentration of some 40% of the nation's rail transit facilities in the region. Rail operating agencies are left to the mercy of large engineering firms in dealing with issues such as these. This is not to say that these firms are necessarily "over-engineering" rail projects, but if qualified, tenured academics were available, second opinions could be more readily sought.

4. Portal Bridge should be permanently fixed in the closed position immediately

The vast majority of railway bridges in the U.S. were constructed a century ago, during the peak of the industrial revolution. IRUM urges that fear mongering about the safety of the Portal Bridge in Hudson Tunnel EIS should be replaced with solid technical analysis. While a new, fixed high-level, fifty foot clearance bridge has received environmental approvals, funding for the $1.5 billion replacement bridge as not been identified. The appropriate plan for this bridge should be included in the Hudson Tunnel EIS scoping. A thoughtful benefit-cost effort would reveal the extremely limited utility of maintaining navigation for high-masted vessels in the Hackensack River upstream from Portal Bridge. Funds expended thus far should be considered as "sunk cost" in the benefit-cost analysis.

When the opening mechanism of a nearby NJ Transit bridge over the Hackensack River in Secaucus malfunctioned on December 31, 2005, sludge from the Bergen County treatment facility was transported by tanker truck for a little over a month, at an average rate of twenty-five loads per day to the Passaic County treatment facility some ten miles away, in Newark using the NJ Turnpike. This added truck load was insignificant on this busy roadway, which carries some 200,000 vehicles per day.

A case could be made for permanently fixing the existing Portal Bridge in the "closed" position. The sludge movement is by far the highest volume of any commodity requiring a movable bridge at this location. While a movable bridge could continue to serve a limited function, given its occasional malfunction and the critical role that rail service crossing the bridge plays in the region's economy, it would make sense to quickly consider the benefits and costs of closing this bridge permanently. The benefit-cost calculation should consider the engineering studies and environmental permitting expended

to date as "sunk cost" and should not enter this calculation. Once fixed in the closed position, the bridge can compete with other century-old bridges for funds available for infrastructure rehabilitation.

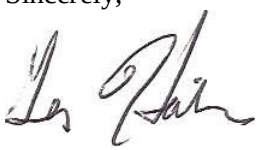
The Hoboken Alternative would not require any expansion of rail capacity across the Hackensack River. The existing three-track bridge on the Morristown Line will be adequate for many years to come.

Conclusion

IRUM urges USDOT and NJ transit to modify its scoping for the Hudson Tunnel EIS, as suggested in this letter. The current draft scoping document is seriously flawed.

IRUM welcomes an opportunity to discuss these comments with Project staff, and to clarify any questions that might remain. Please contact us at your earliest convenience.

Sincerely,



George Haikalis, President
Institute for Rational Urban Mobility, Inc. (IRUM)

Copies to:
Mayor Steven M. Fulop, Jersey City
Mayor Dawn Zimmer, Hoboken
Senator Bob Menendez
Senator Cory Booker
Jersey City Councilmember Candice Osborne
Other interested parties

INSTITUTE FOR RATIONAL URBAN MOBILITY, INC.

George Haikalis
President

One Washington Square Village, Suite 5D
New York, NY 10012 212-475-3394
geo@irum.org www.irum.org

Comments on USDOT Hudson Tunnel Project EIS Scoping Document, May 17, 2016

The Institute for Rational Urban Mobility, Inc. (IRUM) is a NYC-based non-profit concerned with reducing motor vehicular congestion and improving the livability of dense urban places.

IRUM fully supports initiatives to expand Hudson River passenger and freight rail tunnel capacity. However, IRUM finds the current USDOT scoping document "segmented" and seriously flawed and suggests that the following changes be made:

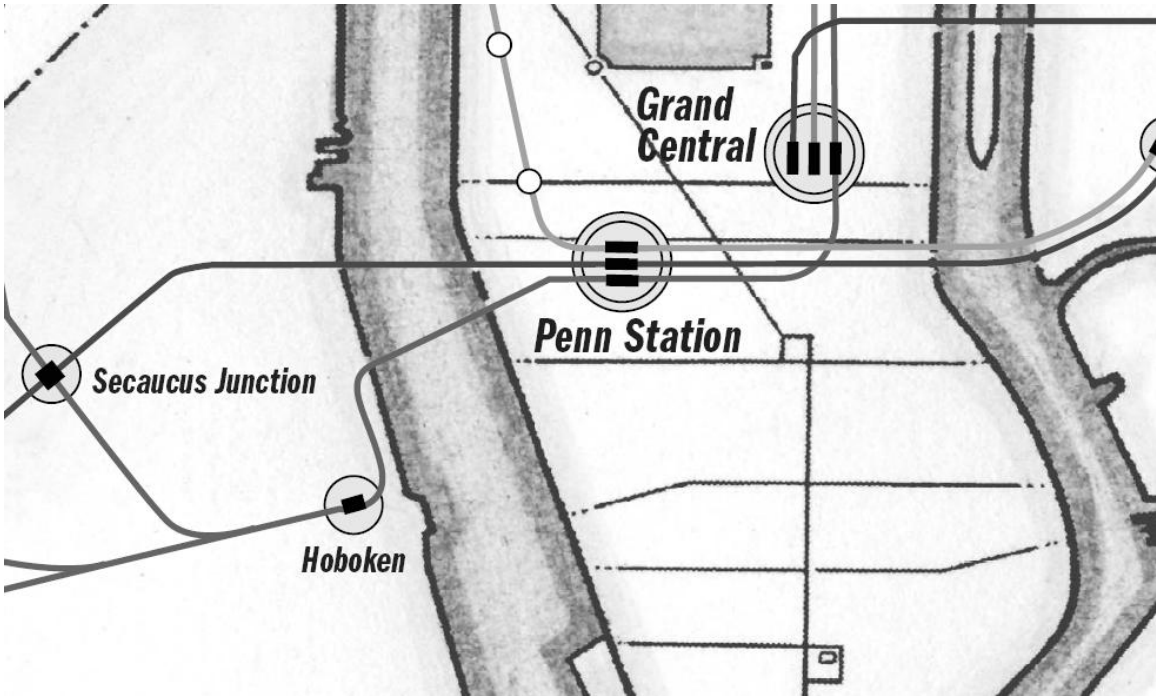
1. The geographic scope should be expanded to include the full range of options from the City of Newark to the City of New York, including consideration of options that would route new Hudson River tunnels by way of the Hoboken Terminal area.

2. Full consideration should be given to all options, including the economic impact of postponing, or even eliminating the replacement of the Portal Bridge. Routing the new tunnels by way of the Hoboken Terminal area clearly should be included as one of the options included in the scope.

3. Manhattan terminal options should be considered in this EIS Scoping process, including the direct Penn Station-Grand Central Terminal connection, studied in detail in the Access to the region's Core (ARC) Major Investment Study (MIS). The full details of all option studied in the ARC project should be made available to the public as part of the scope of this EIS. The advantages of this option should be weighed against the serious adverse impacts of expanding Penn Station to the south, with its substantial displacement of thousands of employees in dozens of structures that would have to be demolished in the blocks south of Penn Station. Linking west of Hudson commuters employees with the concentration of office buildings in East Midtown would make the new tunnel much more useful.

The attached thumbnail describes some of these advantages and should be considered as part of this comment.

George Haikalis, President, IRUM, May 17, 2016



Build new Hudson River Passenger Rail Tunnels via Hoboken/Jersey City/Penn Station and Grand Central

A simple and cost-effective way to remake the region's three commuter rail lines into a coordinated **Regional Rail System** is to route much-needed new Hudson River passenger rail tunnels by way of the Hoboken/Jersey City waterfront business district. A new on-line station would be constructed just south of the Hoboken Terminal and a new 2.3 mile two-track tunnel would connect with existing tracks and platforms at Penn Station, NY. A new 1.2 mile two-track tunnel would be constructed under 31st Street and Park Avenue to link with existing tracks and platforms in the Lower Level of Grand Central Terminal. New stairways and wider concourses are critical to rebuilding Penn Station into a suitable gateway to NYC. Thru-running increases capacity and connectivity while permitting removal of rail yards for new resilient waterfront development. It efficiently uses existing rail infrastructure, avoiding adverse environmental impacts of new rail trackage in the Hackensack Meadowlands.

The Penn Station-Grand Central connection allows west of Hudson residents to reach destinations in East Midtown, the largest concentration of office buildings in the nation and makes it easier for Bronx, Westchester and Connecticut residents to reach the growing West Midtown area as well as Hoboken/Jersey City, Newark and Newark Airport. An interconnected **Regional Rail System** -- with frequent service, integrated fares and through-running -- provides an attractive alternative to driving on crowded highways that cannot be expanded and increases the economic viability of the region in the face of growing global competition.

Institute for Rational Urban Mobility, Inc. www.irum.org July 28, 2015

The New ARC Hudson River Passenger Rail Tunnels:

The Hoboken Alternative

December 1, 2009

Prepared by

George Haikalis
Chair, Regional Rail Working Group
One Washington Square Village, Suite 5D
New York, NY 10012
212-475-3394 geo@irum.org www.rrwg

Why via Hoboken?

Routing the new Access to the Region's Core (ARC) Hudson River passenger rail tunnels by way of Hoboken Terminal – the Hoboken Alternative – allows existing rail infrastructure to be used more productively. When combined with "Penn Station First" -- a simpler and more direct Penn Station connection in Manhattan -- the Hoboken Alternative holds the promise of reducing construction cost of the new tunnels and its essential related component -- the Portal Bridge Capacity Expansion project -- by more than $8 billion or 70% of the total $11.4 billion cost.

Even in good times this option merits serious consideration, but in light of the growing economic difficulties facing New Jersey and New York it is extremely important to give fair and impartial consideration to credible options.

The simpler construction also results in speeding completion of an operational "first phase", saving four years or more off the projected eight year time frame in the current plan, before any additional trains can be handled across the Hudson.

Other Important benefits of the Hoboken Alternative

Significant environmental gains would be realized as well. Since the Hoboken Alternative routes trains over existing underutilized tracks and bridges through the Hackensack Meadowlands, no wetlands would be destroyed. A less costly construction scheme will greatly reduce the project's carbon footprint as well. The route better serves the waterfront, providing motorists with a more attractive alternative and reducing congestion which is at critical levels.

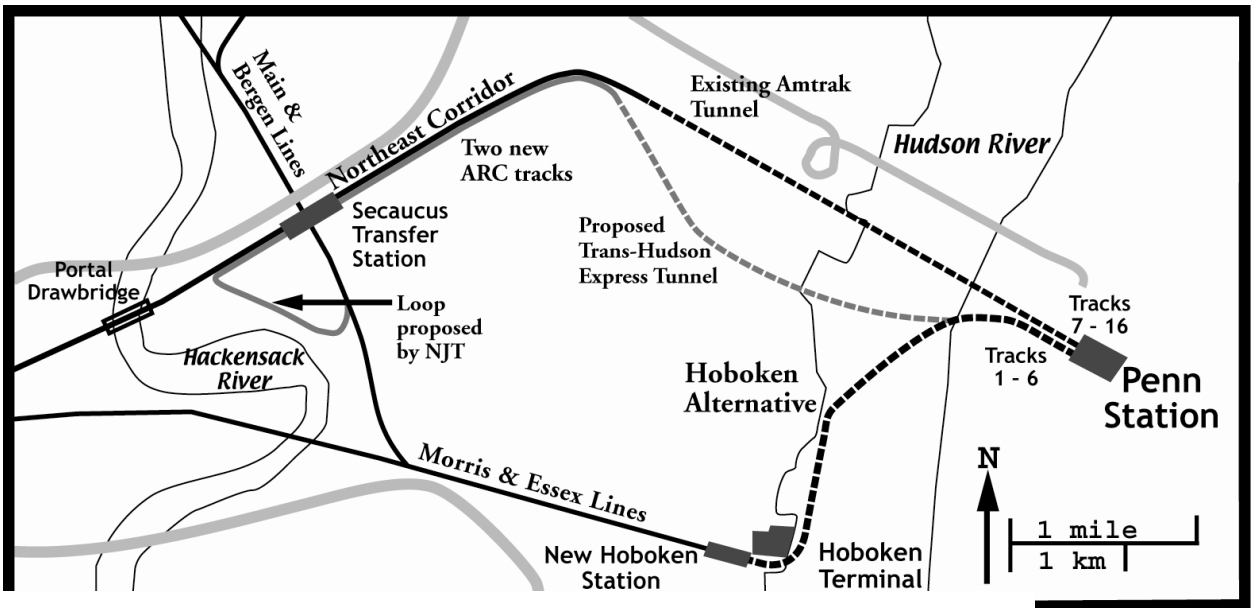


Figure One - The Hoboken Alternative

Routing the new tunnels by way of Hoboken offers significant savings in operating cost, while providing a much higher level of rail service to New Jersey's economic engine – the massive concentration of commercial and residential development on the Jersey City and Hoboken waterfront.

The state would gain a much higher return on its valuable waterfront properties. By converting Hoboken Terminal into a "way" station, a simple four-track through station could readily handle projected traffic needs for passengers boarding or alighting at Hoboken. Should more detailed studies indicate that greater capacity is needed, the station could be expanded to six or even eight tracks.

As a through station, no trains would terminate at this location. All of the existing tracks and servicing facilities at Hoboken Terminal would be eliminated. Other existing NJ Transit facilities, located inland would be used, and expanded if needed. Except for the new station itself, the entire Hoboken waterfront terminal could be sold and re-used as a valuable development site. However, the historic train shed and terminal building should be preserved and incorporated into new development at this site.

While a change of direction will require additional environmental and procedural filings, all of the impacts on the New Jersey side of the tunnel will be experienced on NJ Transit-owned property, eliminating objections form nearby property-owners. Environmental stakeholders who are concerned about the Meadowlands wetlands can be expected to become strong supporters of the change in route.

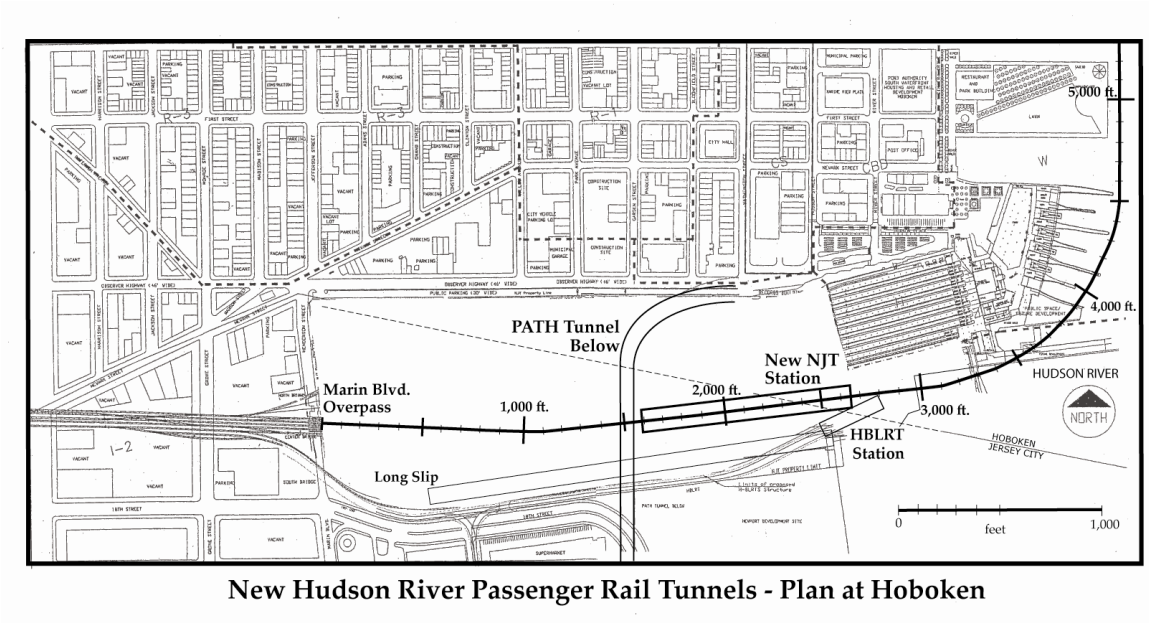


Figure Two – Detailed Plan at Hoboken

Background

The Hoboken Alternative was offered by rail advocates in early 2005 after NJ Transit proposed a revised alignment for its tunnels in the summer of 2004. In order to gain additional depth under the riverbed, NJ Transit proposed that instead of building its new tunnels parallel to the existing century-old PRR tunnels, they would curve southwest under Manhattan's West Side before turning west, reaching the New Jersey shoreline in the northern portion of Hoboken. The tunnels would then curve northwest reaching a portal in the vicinity of the existing tunnel portals in North Bergen. The bow in the tunnel adds approximately 0.3 miles to the tunnel's length, compared to a straight-line alignment of the current tunnels.

Since NJ Transit's new alignment was heading toward the Hoboken Terminal before turning north it occurred to rail advocates that an alternative of continuing southwest and then turning west at Hoboken terminal was feasible, as shown in Figure One.

For the Hoboken Alternative the distance between Penn Station, New York and Penn Station, Newark is the same as the current route via Secaucus. The Hoboken route saves about 0.4 mile over the Secaucus loop route for Bergen and Rockland County destinations and avoids the sharp curves, offering the potential for travel time savings.

During the EIS proceedings, the Mayors of Jersey City and Hoboken and the owner of the largest development site adjacent to the Hoboken Terminal -- the Lefrak Organization -- all endorsed the routing through Hoboken. In its submittal Jersey City outlined a more ambitious alignment than the one contained in this report. In the EIS, NJ Transit criticized Jersey City's suggested alignment but made no comment on the alignment offered by rail advocates, which was also entered into the record.

Two concerns, other than questions about alignment details, were raised by NJ Transit in the EIS process. The first was that in the longer term, capacity limitations would occur. Waterfront-bound and Lower Manhattan-bound passengers from points further west in the state would pre-empt space on trains from Manhattan-bound passengers, limiting the full use of the Hudson River tunnels. This is a longer term concern. The optimistic forecasts of ridership are unlikely to be realized for many years, because of the downturn in the economy. Should ridership reach projected levels there are other options for accommodating West of Hudson passengers heading to the Exchange Place area or Lower Manhattan. These passengers would be better served if they could transfer to PATH

further west, and avoid the Hoboken Terminal entirely. Plans for a transfer from the Morristown Line to PATH at Harrison, and for an extension of PATH to Secaucus were developed in 1962 as part of the agreement with the Port Authority to acquire the Hudson Tubes. These plans could be re-examined as part of a future capacity enhancement analysis.

The second concern was the greater length of the underwater segment of the tunnels, and whether adequate ventilation facilities could be constructed. While clearly this issue must be addressed during the detailed design effort, it can hardly be called a fatal flaw, since many subaqueous rail tunnels of much greater length have been constructed around the world.

Engineering Feasibility

While a number of options for connecting existing NJ Transit tracks at Hoboken with the new Hudson River rail tunnels are possible, and should be carefully analyzed by NJ Transit's engineering team, this report focuses on what seems to be the most promising scheme -- ramping down from the embankment east of the Palisade tunnels, beginning with the last highway underpass at Marin Boulevard, before reaching the Hoboken Terminal complex. The overall plan is shown in Figure

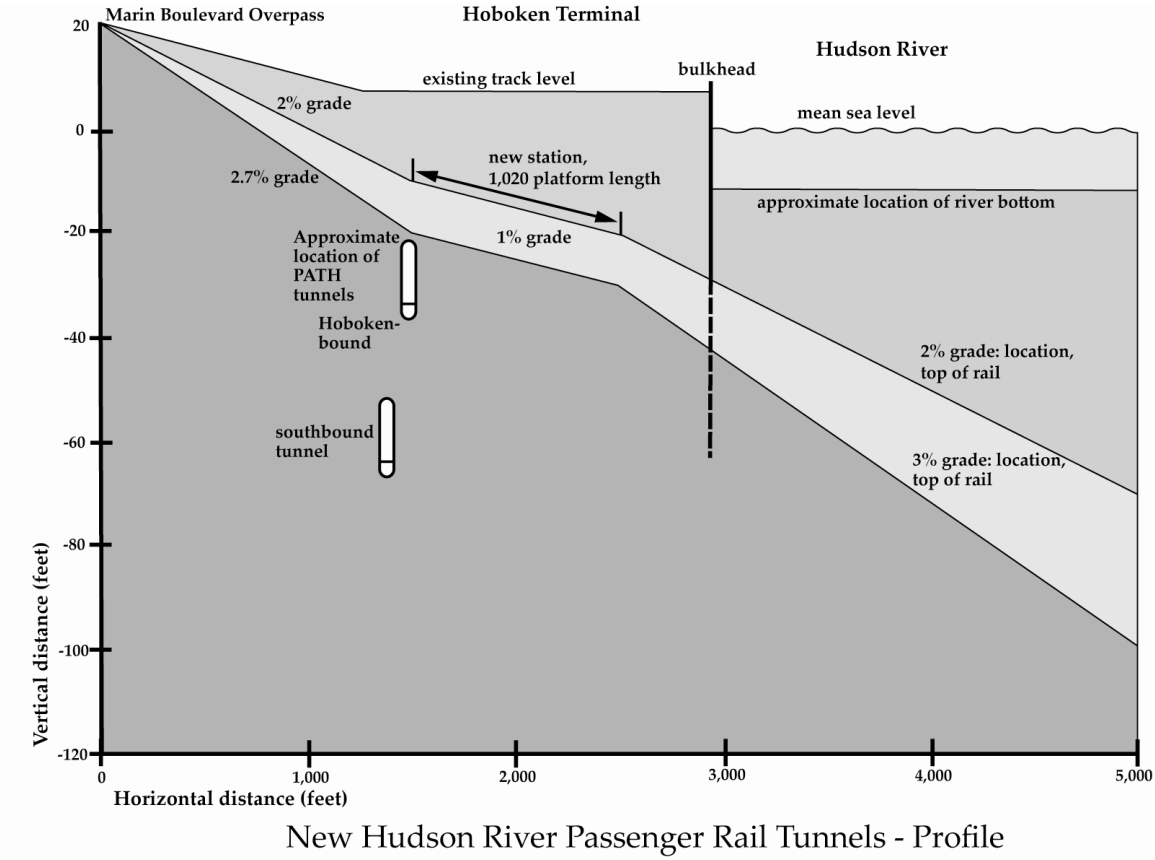


Figure Three – Detailed Profile at Hoboken

Two and the accompanying profile is shown in Figure Three.

Two grade options – 2% and 3% -- were considered in this analysis, as they were in the track connection plan to Penn Station in Manhattan described in the February 2007 DEIS. A 3% grade has less impact on the riverbed, but is more challenging in terms of train performance and capacity. Modern high-powered electric trains can easily negotiate a 3% grade. MTA's LIRR East Side Access Project, now under construction, includes a 4,200 foot long segment of 3% grade in Long Island City where the tracks rise from the 63rd Street tunnels to meet existing LIRR tracks on an elevated embankment in Sunnyside. For the Hudson River Hoboken routing both grade options are feasible.

Relatively straightforward cut-and-cover construction is envisioned in Hoboken. The challenge is to descend from the Marin Boulevard overpass, pass over the Hoboken-bound PATH tunnel and still clear the river bottom with sufficient cover to permit soft-soil tunnel boring machine construction. The extent to which fill must be placed in the river bed in Hoboken depends on the degree that silting has already occurred around the Hoboken ferry slips and pilings. NJ Transit's plans to restore some of the ferry slips for cross-Hudson service must be coordinated with

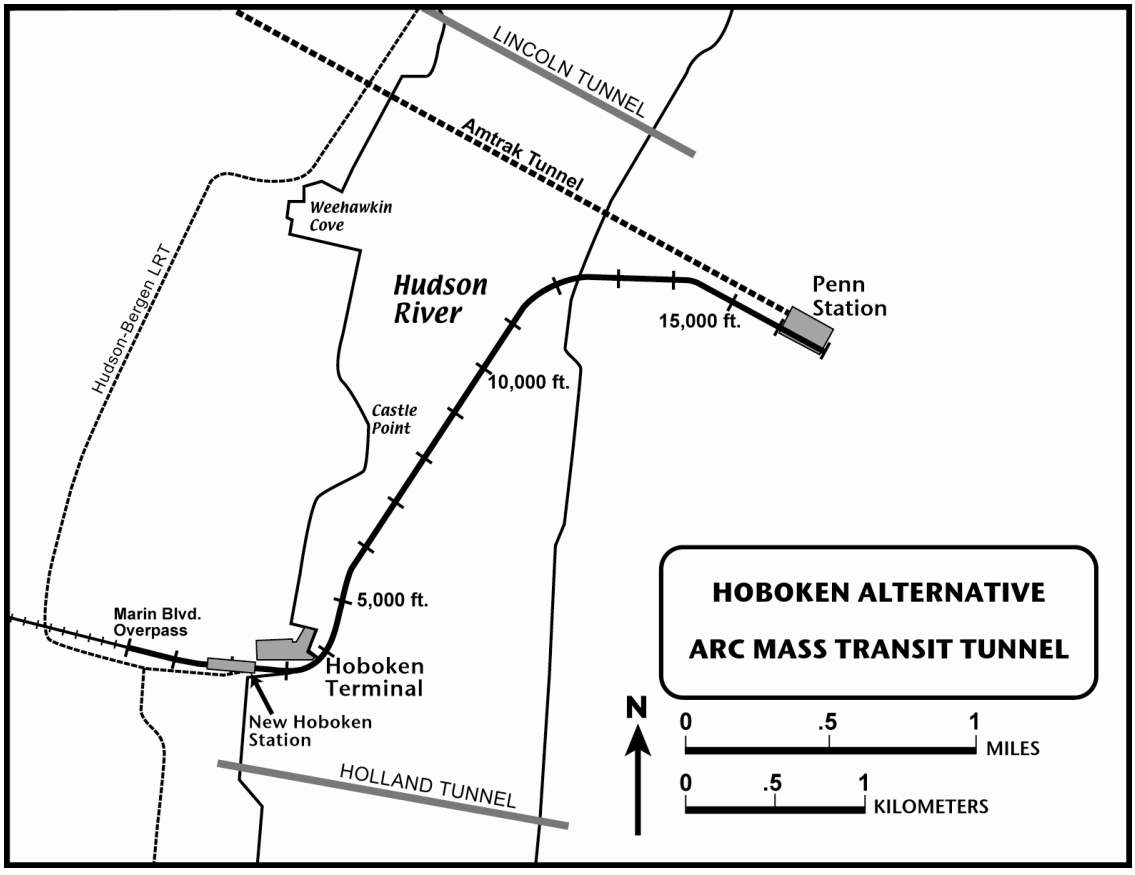


Figure Four – Full Plan – Hoboken-Penn Station

the new tunnel construction.

The existing yards and platforms at Hoboken Terminal are less than ten feet above river level. The new alignment will begin its descent at the Marin Boulevard overpass, the beginning of the numbering of 1,000 foot intervals shown in the figures. After reaching grade, the lines will continue to descend in an open cut to be built in a "bath-tub" design with adequate drainage. A new four track thru station will be constructed just south of the existing platforms and tracks at Hoboken Terminal. For both grade options, the station could be open to daylight with natural ventilation, with canopies over the platforms. Within the 12-car, 1,000 foot long station a 1% grade would be maintained. East of the station the tunnels would begin, with a construction shaft for launching the soft soil TBMs toward Manhattan. Depending on a more detailed design analysis and construction scheduling plan, the existing Hudson-Bergen light rail station might be temporarily relocated.

With the new thru station in place all of the tracks and train servicing facilities would be removed. A new site plan for redeveloping this valuable NJ Transit-owned parcel would be developed. The historic train shed and terminal building would be preserved and appropriate new uses considered. A covered pedestrian path from the

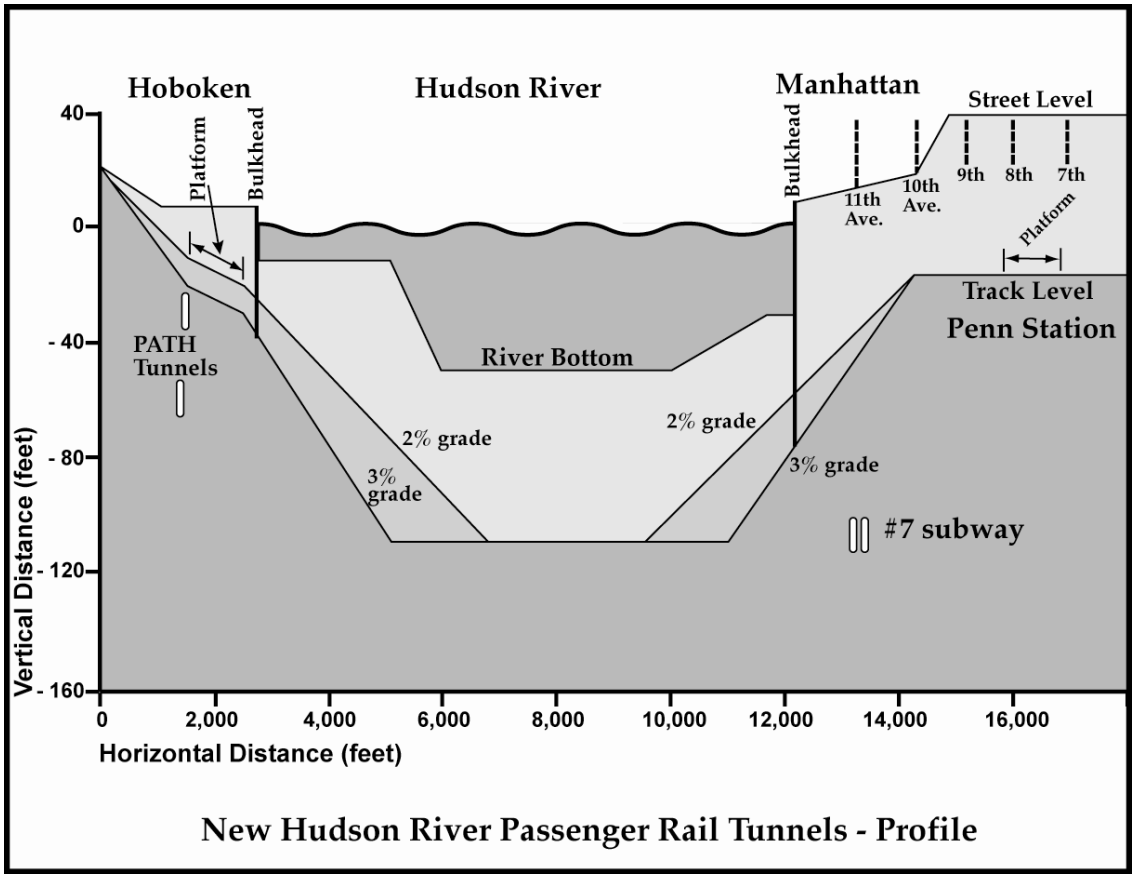


Figure Five – Full Profile – Hoboken-Penn Station

new station to the existing PATH Hoboken Station would be included in the new development and a new alignment for the light rail line through the site should be considered that would bring the line closer to the center of Hoboken. It is important that new development plans for the Hoboken Terminal be prepared in consultation with elected officials in Hoboken and Jersey City.

The existing four track rail line between the Marin Boulevard overpass and the Palisade tunnels provides double the capacity of the two-track Hudson River crossing. A short segment of fifth main track is in place and could be used to enhance capacity in the near term. In the longer term, it might make sense to operate the Palisade tunnels as two separate two-track lines, with the northern pair of tracks linking only to the Bergen lines and the southern pair only to the Morristown and Northeast Corridor lines. The layout just west of the Bergen tunnels could be simplified, permitting much higher operating speeds. In this case consideration should be given to adding a flyover to permit separation of inbound and outbound movements.

Several additional systems issues should be addressed. At Harrison a new flyover is needed to separate the westbound PATH trains from westbound Northeast Corridor trains that come via Hoboken. An additional westbound rail track is needed thru the Harrison Station. Space is available for this track, but an expansion of the embankment will be needed.
At the Manhattan end, the cut-and-cover Penn Station direct track connection described in the February 2007 Draft Environmental Impact Study (DEIS) report would be advanced and the deep cavern station 175 feet below 34th Street would be eliminated from the plan. As described in the DEIS, the link would extend from the bulkhead at 12th Avenue and 28th Street to the western retaining wall of the Penn Station complex, just east of 10th Avenue. Only a two-track cut-and-cover connection is needed, reducing the width of the sub-surface easement. This easement would be beneath properties slated for future development. Plans for new residential and commercial structures have been postponed because of the economic downturn, and can be modified to allow construction over the easement.

The alignment and the profile between Hoboken Terminal and Penn Station are shown in Figures Four and Five. The station to station distance (midpoint to midpoint of stations) is 2.8 miles. The soft soil tunnel, from bulkhead to bulkhead, is 1.8 miles in total for each tube. Cut and cover two-track approach links are about 0.5 miles each, on either side of the river.

The detailed route in Manhattan is shown in Figure Six. East of 10th

Avenue the new tunnels connect into existing tracks west of Penn Station. With the existing track configuration already in place full interconnectivity from the new tunnels to most existing platform tracks is possible. A more careful analysis would be needed to justify higher speed turnouts or new switches. Clearly, within the station itself additional stairways and widened concourses will be needed. Even without the new track connection, these passenger flow enhancements would be needed over the next eight years as part of an expansion of Moynihan/Penn Station.

Based on this preliminary analysis the Hoboken Alternative connection seems doable, and has the potential of saving as much as 80% of the cost of the Hudson River tunnel project.

Next Steps

With new leadership in Trenton there is a critical opportunity to change direction and conduct a fair and impartial review of a more cost-effective and passenger-friendly plan for the new Hudson River tunnels. All construction contracts for the current plan should be put on hold until the engineering feasibility and constructability of the Hoboken Alternative is assessed. The expertise of the existing consultant team, currently under contract to NJ Transit, is already available and can be put to use immediately. Concurrently, NJ Transit, in cooperation with MTA, should devise a full service implementation plan for thru-running at Penn Station, building on the successful "football specials" pilot program begun this fall. Thru-running has the potential to increase peak hour train capacity at Penn Station in the near term by 25% or more. To handle this increased ridership, additional stairways and widened concourse are needed as part of a plan to remake Moynihan/Penn station into a more fitting gateway to NYC.

The Hoboken Alternative and the "Penn Station First" direct track connection plan are part of a longer range plan for an interconnected Regional Rail system. A subsequent step is the connection between Penn Station and Grand Central Terminal. Critical information about this connection is contained in the full 1,600 page 2003 ARC Major Investment Study, which must be released.

By moving forward on the Hoboken Alternative, the new Christie administration can show its commitment to advancing bold, yet cost-effective strategies in the face of New Jersey's unprecedented fiscal crisis.

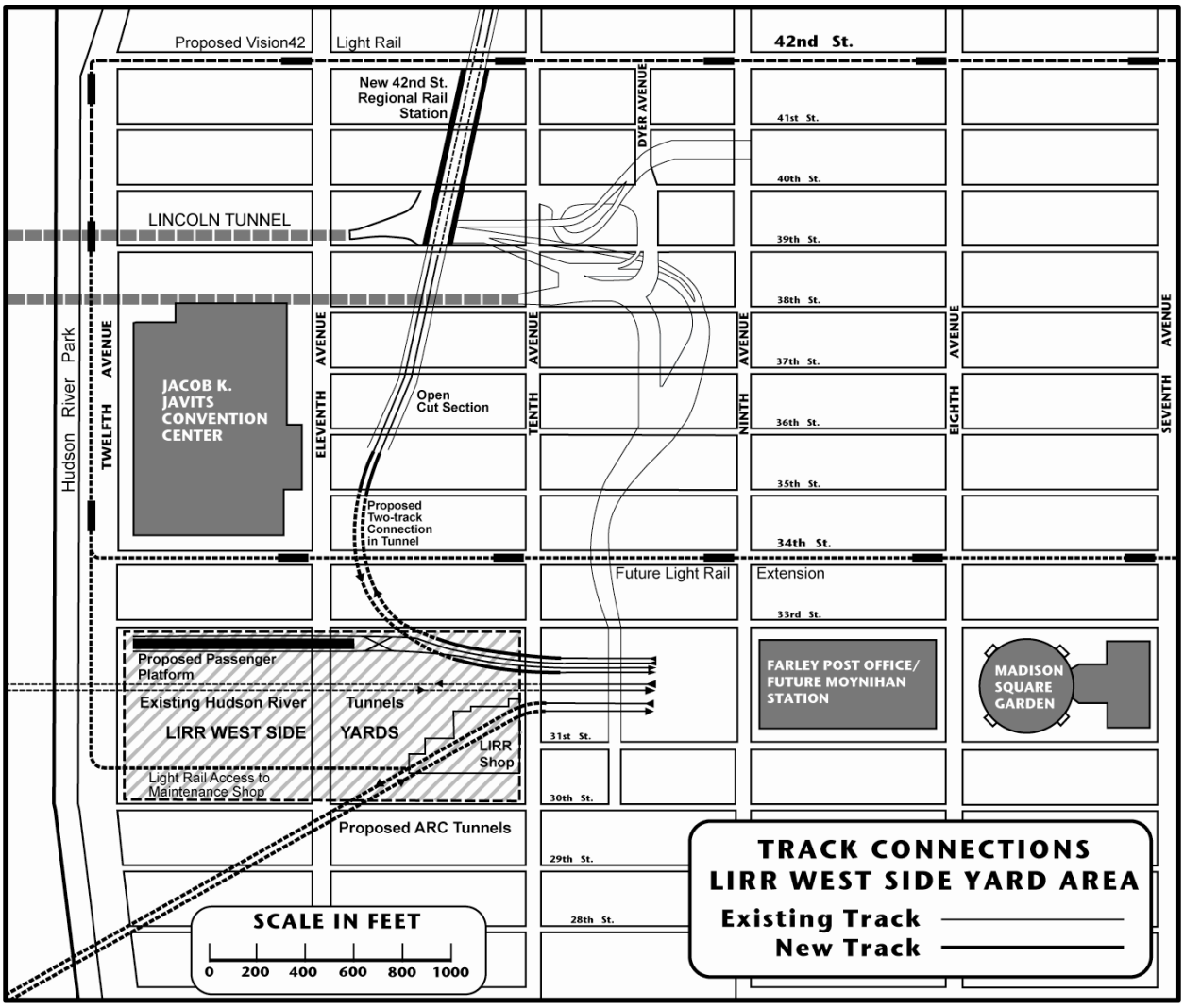


Figure Six – Plan at West Side Yard