DOES LOUDOUN COUNTY NEED METRORAIL?

by

Randal O’Toole and Gabriel Roth

June 2012
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Introduction

By: Michael W. Thompson

For many years now, Northern Virginia has been consumed with the issue of Rail to Dulles. The decision has been mail and the construction is taking place right now. The next piece to the rail project is to build the section out to Loudoun County. This proposal has produced angst among many including the Board of Supervisors in that county.

The attached paper outlines various issues that come with the discussion of using taxpayers’ money to fund this last leg of Metro. It is written by two internationally recognized transportation experts so it should be taken seriously.

The Thomas Jefferson Institute offers this paper to the Board of Supervisors in Loudoun County who need to make decisions very soon in order to keep the construction on schedule. This paper is short and it focuses on some important problems with Rail to Dulles as now planned. The facts and perspectives brought forward in this study are important to the decision making process.

I hope this short paper will bring a more complete picture to arguments swirling around the Rail to Dulles endeavor. That is why it is being sent to you at this time. Please review it and weigh the facts and figures that you may not have heard in the past. Thanks for serving.

Sincerely,

Michael W. Thompson
Thomas Jefferson Institute
DOES LOUDOUN COUNTY NEED METRORAIL?

by

Randal O’Toole and Gabriel Roth*

This paper assesses the likely impacts of completing Phase 2 of the Metrorail extension on transportation and land development in Loudoun County.

Summary

Transportation.

In view of the low door-to-door speeds of most trips using local rail service, Metrorail is unlikely to increase travel in the County significantly. Competitive bus services can produce superior transit services at far lower costs.

The high toll increases planned for the Dulles Toll Road (DTR) to pay for most of this Metrorail extension, are likely to reduce travel on the DTR by more than would be generated by the rail system.

Land development.

Research and experience throughout the country show that rail transit does not stimulate land development. Instead, at best, it shuffles development around, with property owners in major downtown areas benefiting at the expense of property owners in more suburban areas.

So-called transit-oriented developments and other projects that supposedly have been stimulated by new rail transit lines almost always turn out to have been subsidized with tax-increment financing, tax abatements, or other subsidies. For example, Portland, Oregon has given developers hundreds of millions of dollars worth of subsidies along its light-rail lines and then credited the light rail with stimulating the development.

Construction of Metrorail to Loudoun County would be more likely to draw development away from Loudoun County to Tysons Corner or downtown Washington than to stimulate development in Loudoun County. At best, a few property owners near Loudoun County rail stations would see their property values rise, but at the expense of a decrease (or slower growth) in property values elsewhere in the county.

Transportation analysis

Before discussing the situation in Loudoun County, we offer a few general comments on transit modes.

If we are to compare bus and rail modes, we need to do so validly. Rail trains enjoy dedicated rights-of-way, but analysts often assume that buses operate in mixed traffic. Such a comparison is not

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valid, as buses can also be provided with dedicated rights-of-way. Valid comparisons compare like with like.

Commentators frequently state that rail or “light rail” is the mode preferred by planners, and that bus-based services, when preferred, are chosen only because they cost less. But bus-based services have many advantages over rail-based ones:

First, buses are available in different sizes, and can offer different comfort standards, to match service demand. They can run on different kinds of roads, e.g. local roads or freeways. Rail trains, on the other hand, are confined to fixed guideways. Therefore, for most trips, travel by train involves a change of mode (from or to car, bus, bicycle or walking). Such changes are unpopular with most travelers.

Second, the routing of bus service can be adjusted periodically. For example, bus services can be changed much more easily than rail service to meet changes is travel demand.

Third, on the Silver Line, every train has to stop at every station, which increases travel time. For example, passengers traveling from the “Metro Center” to Dulles Airport would have to stop at eighteen stations before reaching their destination. Travel from Wiehle Avenue to the Pentagon would take 57 minutes, involving 12 stops, the one at Rosslyn requiring a train change. In contrast, express bus services can make this trip in less than thirty minutes.

Fourth, bus services can be provided on a competitive basis, which exerts downward pressure on costs and encourages services that meet passenger demand. Rail transit, on the other hand, is generally provided by a government monopoly, reducing pressure to control costs and improve service. This contrast is evident in the competition to provide passenger services between Washington DC and New York City. Journeys on luxury buses, with toilets, Wi-Fi and power connections, can be made for $20, while journeys by Amtrak cost travelers at least four times as much.

Fifth, rubber-tired systems have more seated-passenger capacity than proposed in the rail plan, which requires many passengers to stand. According to the Highway Capacity Manual, the theoretical capacity of a dedicated bus lane exceeds 1,200 buses an hour. If 45-seat buses are used, a dedicated lane can accommodate 54,000 seated passengers per hour in one direction. Such traffic volumes are not yet expected in Loudoun County, but the Lincoln Tunnel Express Bus Lane, which connects New Jersey with Manhattan, has been observed to carry 32,600 passengers per lane in the peak hour, nearly four times the 8,642 passengers per hour forecast for Dulles rail.

Finally, roads can meet the demand for transit and have significant excess capacity for other purposes. Typical highway lane capacity is 1,200 buses per hour. Fewer than 200 45-seat buses per hour can carry the maximum of 8,642 passengers per hour forecast for both phases of the Silver Line. Thus, over 80 percent of road capacity is available for other purposes, such as emergency vehicles, evacuation, or toll lane operations. This is not possible with rail transit passenger systems, which are expensive because they dedicate their rights-of-way entirely to their transit service.

Application to Loudoun County requirements

Loudoun County is one of the wealthiest in the US. High-income people tend to value their time highly, and therefore select travel modes that offer high door-to-door speeds.

Is rail-based transit necessary to improve mobility in the County?
No. Rail-based transit is not necessary to improve mobility in Loudoun County. The above considerations indicate that superior transit service, at lower cost, could be obtained by express and other bus services, competitively provided.

**If rail-based service were to be provided in Loudoun County, what is the likely proportion of trips using that mode?**

As shown in Table 1, below, the average proportion of trips undertaken by transit in the Washington DC region is 6 per cent. In Reston the proportion is 3 per cent, and the transit proportion in Loudoun County is likely to be lower than in Reston, because of Loudoun’s higher incomes and lower population densities. It follows that, even if the extension of Metrorail into Loudoun County were to double the percentage of transit use, the effect on total travel in the area would be insubstantial.

<table>
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<th>Area</th>
<th>Drive Alone (SOV)</th>
<th>Carpool (HOV2+)</th>
<th>Transit</th>
<th>Walk</th>
<th>Bike</th>
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<tr>
<td><strong>Regional Average</strong></td>
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<td>37%</td>
<td>6%</td>
<td>9%</td>
<td>0.6%</td>
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</table>

**Table 1: Trip modes in the Washington DC region**

**Would the extension of Metrorail to Loudoun County be bad for its people?**

The extension of Metrorail in to Loudoun County, as currently planned, is likely to harm the County’s people in two ways:

1. The extension would cost money, and would displace more beneficial uses by the County, or by its taxpayers.
2. As currently planned, most of the funds for Phase 2 of the Metrorail extension are to come from increased tolls on the Dulles Toll Road. Estimates produced by consultants to the Metropolitan Washington Airports Authority are shown in Table 2 below. They indicate that the
increased tolls required to pay for Metrorail would induce many DTR users to re-route their trips to local, un-tolled, roads. For example, by 2018, some 32 million trips a year (over 87 thousand a day) would be lost to the DTR, a fifth of them (over 17 thousand a day) made by travelers living in Loudoun County. While no updated figures are available for the number of rail trips to be generated in Loudoun County, a study by the Washington Airports Task Force in 2005, using a Washington COG model, showed that even by 2030 there would be only 2,200 daily boardings at each of the two Loudoun stations, only 1,900 at Route 28, and only 1,200 at the Airport, compared to the 17 thousand daily trips by Loudoun residents forecast to be forced off the DTR by 2018. So Phase 2 could actually reduce mobility in the area it is designed to serve.

Land development analysis

In a recent paper on the impact of Metrorail on Loudoun County’s economy, economist Stephen Fuller of the Center for Regional Analysis claimed that building Metrorail to Dulles Airport would add an average of $7.2 billion per year to Loudoun County’s economy during the 2020 decade, which represents a 7 to 11 percent increase over not building the rail line. The only citation backing this claim, however, was the “Center for Regional Analysis.”

According to its web site, the Center for Regional Analysis has an “econometric input-output model of the regional economy,” which it uses to “forecast different future economic scenarios.” Such models are obviously sensitive to the assumptions made by the modelers, but since the Center for Regional Analysis model is proprietary, outside reviewers have no way to assess the reliability of the model. In particular, Dr. Fuller’s paper describes no relationship between transportation and economic development, so it fails to explain how the small increases (or, more likely, substantial decreases) in mobility resulting from the project would bring about the developments predicted in his paper.
Furthermore, Dr. Fuller’s paper includes no recent transportation data, presumably because neither WMATA nor the Metropolitan Washington Airports Authority have provided any.

Without knowing the assumptions used in Fuller’s economic model, it is still possible to question his prediction. In the Washington DC region itself there are examples of Metro stations — Shady Grove and Silver Spring come to mind — that are not associated with additional economic development, and examples, such as Tysons Corner, of intense development with no rail transit.

A considerable amount of research has found that rail transit has little effect on local economic growth. And the effect that it does have is generally zero-sum, meaning that the benefits to property owners near rail stations are offset by costs to property owners elsewhere in the city or region. This point was recently made to the Loudoun County Board of Supervisors by their consultants Robert Charles Lesser & Co. (RCLCO) who wrote: “RCLCO has not found any credible evidence to indicate that the extension of rail transit brings new development to an entire region. […] As a result, RCLCO has assumed that if transit spurs faster or more intense development on one property then it must necessarily mean slower or less intense development on another in the region.”

In 1995, the Federal Transit Administration published a comprehensive literature review of this question prepared by University of California (Berkeley) planning professor Robert Cervero (a strong advocate of rail transit and transit-oriented developments) and consultant Samuel Seskin (whose employer, Parsons Brinckerhoff, has been involved with numerous rail transit projects). They found that “urban rail transit investments rarely ‘create’ new growth.” Instead, they merely “redistribute growth that would have taken place without the investment.”

Further, they concluded, most of the redistribution is from suburbs to downtowns. For example, another study co-authored by Robert Cervero found that the San Francisco BART line contributed to development in downtown San Francisco, but had “fairly modest” effects elsewhere in the Bay Area.

For the Metrorail project, this means the rail line would cause downtown Washington or, possibly, Tysons Corner to benefit at the expense of the Loudoun County.

Many of the claims about economic development resulting from rail transit come from city officials and transit agencies trying to justify the huge subsidies that are needed to build and maintain those rail lines. In fact, a close review of those claims usually reveals that it was other subsidies, such as tax-increment financing and property tax abatements, that stimulated development near rail transit lines.

Portland, Oregon, for example, has claimed that its light-rail lines generated billions of dollars worth of economic development. Yet, in 1996, ten years after the city opened its first light-rail line, city planners admitted that it had failed to generate any of the transit-oriented developments they wanted. At a Portland city council hearing in October 1996, city planner Mike Saba testified, “We have not seen any of the kind of development of a mid-rise, higher-density, mixed-use, mixed-income type that we would have liked to have seen” along the light-rail line. He advocated the use of property tax abatements and other subsidies to stimulate such developments.

At the hearing, Portland transportation commissioner Charlie Hales observed, “We are in the hottest real estate market in the country,” yet city-planning maps revealed, “most of those sites [along the light-rail line] are still vacant.” “It is a myth to think the market will take care of development along transit corridors,” he added. Portland eventually gave hundreds of millions of dollars in subsidies to developers along its light-rail lines, including tax abatements, land sales at below-market prices, waivers of permit fees and system development charges that would otherwise average more than $12,000 per dwelling unit, and taxpayer-funded infrastructure development.
In 2009, a reporter for the *New York Times* wrote an article whose headline proclaimed, “New rail lines spur urban revival.” Yet the three examples in the article belied the headline. One, in Columbus, Ohio, is in a city that has no plans to ever build a rail line. The second, in Denver, is in an area where a rail line might be built more than a decade after the development took place. Only the third example (though the first listed in the article), in the Dallas suburb of Carrollton, involves an actual rail line, and it is doubtful that the rail line has contributed much to the town’s development.

What all three examples have in common is development not a from a rail line but from subsidies, mostly in the form of tax-increment financing. The Columbus development, the *Times* disclosed, received $800 million in subsidies. The Denver development, the *Times* did not disclose, received nearly $300 million in subsidies. Meanwhile, the $38 million Carrollton project, the *Times* similarly did not disclose, received $13 million in subsidies. Ironically, part of this subsidy went to the construction of a six-story parking garage so that people can shop and work in the new development without having to take the light rail to get there.

To support claims that rail lines spur economic development, rail advocates often cite every new building built anywhere near a rail line, even though most would have been built without the rail line. Oregon, California, and other states have required that all state offices locate near rail lines; such relocations are then credited by rail planners as having been stimulated by development.

To support transit ridership, planners particularly favor *transit-oriented developments*, meaning relatively high-density projects that mix housing, retail shops, and office space. While there is no central clearinghouse for transit-oriented development data, anecdotal evidence indicates that such developments are almost always subsidized using tax-increment financing or other support. For example, a Texas developer rejected the idea of building high-density, mixed-use developments in Houston after “we discovered the ones that were economically successful were the ones that had government help.” As previously noted, developers in Portland, Oregon, built no new transit-oriented developments along the city’s light-rail line until the city began subsidizing such developments 10 years after that line opened. This suggests it is the subsidies, not the rail lines, that stimulate the development.

Even to the extent that rail transit increases property values along its route, for an urban region as a whole, this is a zero-sum game: increases along the route are offset by lower (or slower-growing) property values elsewhere. It may even be a negative-sum game if higher taxes and land-use regulation needed to support the rail lines discourage economic growth. This has been found to be true in the case of tax-increment financing in general: a study in Illinois shows that cities that use TIF to promote economic development grow slower than cities that do not.

In general, new transportation investments lead to greater economic growth when they offer faster, more convenient, and/or lower-cost transportation. This leads to increased mobility, which in turn increases worker and business productivity. By increasing travel speeds, for example, the Interstate Highway System generated a huge amount of passenger and freight travel that simply did not exist before. This spurred economic growth that would not have taken place without those or similar highways.

Rail transit is not, in general, faster, more convenient, or lower in cost than transportation alternatives. In fact, it is much higher in cost than buses or driving, and it is only with heavy subsidies that end-user costs are kept competitive with alternatives. Because of this, rail transit generates little new mobility. Instead, most trips on rail transit are trips that would otherwise have taken place by car or bus. The likelihood that the Metrorail extension to Loudoun will not generate significant amounts of new travel, and that the high tolls used to finance it reduce tolled trips and increase traffic congestion, means that Phase 2 of the Metrorail extension is unlikely to generate significant amounts of economic
development. When asked, at a public meeting, whether his prediction took into account the decline in traffic on the Dulles Toll Road due to the increased tolls, Dr. Fuller replied that it did not.

In sum, to the extent that building Metrorail into Loudoun County will have an effect on its economy, it is more likely that the line will draw economic development away from the county to Fairfax County (Tysons Corner) or to downtown Washington. While property owners immediately adjacent to Metrorail stations may see a small increase in their property values, such increases would be offset by decreases or slower-growing property values elsewhere in the county.

Conclusions

As a transportation project, it is difficult to recommend the implementation of Phase 2 of the Metrorail extension, as the benefits to mobility would be small and costly, while the damage to mobility from the high DTR tolls could be substantial. Certainly the County would be well advised not to participate, if substantial financing is to depend on raising tolls for use of the Dulles Toll Road.

As an aid to economic development, a project that imposes a low door-to-door speed travel mode in a high-income area, and which may even reduce mobility, is unlikely to encourage economic development.

Acknowledgements

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Ibid.


See, for example, Portland Streetcar Development Oriented Transit (Portland, OR: City of Portland, 2006), pp. 10–14.


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Thomas Jefferson
1801