The Del Mar rail relocation project needs a benefit-cost analysis

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I am a professor of economics specializing in the design of complex markets, especially in energy, communications, and transportation. As a resident of Del Mar and an economist, I have closely followed the rail relocation discussions.

I wish to make three points: 1) SANDAG should conduct a benefit-cost analysis to identify the best option, 2) the analysis should include rail-to-trail conversion as one option, and 3) there is a plausible case that the rail-to-trail option may be best.

Rail relocation starts with an assumption that the rail must be moved. But is moving the rail worth the cost? We need to answer this question. SANDAG's first step should be a forward-looking benefit-cost analysis to identify the best option to achieve our goals.

The alternatives evaluated should include the retirement of the rail line. The rail line appears to be non-essential. We have gone months without the rail line in the last few years because of bluff erosion. Rail line retirement is a viable alternative to relocation.

Rail line retirement is nothing new. Rail transportation has declined in the United States since the early 1900s. Should we spend billions on yesterday's technology? Yes, if that is the best option. But we should explore whether we can harness current and future transportation technologies to get more with less. These alternative technologies are advancing rapidly.

In the energy sector, when an old coal plant needs replacement, we don't just build another coal plant. We recognize that coal is no longer the best option. Coal costs too much and pollutes too much. Instead, we look at all the technologies—wind, solar, natural gas, etc.—and pick the best one for our future. Similarly, when we need a new transmission line, we consider a wide range of options to solve the problem and select the option that brings the greatest gain for dollars spent. Governments should spend our tax dollars wisely.

The USDOT requires a forward-looking benefit-cost analysis

Rail relocation can only happen with federal funding. The US Department of Transportation (USDOT) requires a benefit-cost analysis of any major infrastructure project. This requirement is set out in the USDOT's Benefit-Cost Analysis Guidance for Discretionary Grant Programs.

The analysis identifies and quantifies the project's benefits and costs and compares them with alternatives to determine whether it is worthwhile.

The guidance also specifies the benefits and costs that should be considered in the analysis. These include:

- Economic benefits, such as increased productivity and reduced congestion.
- Environmental benefits, such as reduced air pollution and noise.
- Social benefits, such as improved safety and quality of life.

The USDOT's requirement for a benefit-cost analysis ensures that major infrastructure projects are evaluated rigorously and systematically. The analysis helps agencies decide which projects to fund and how to allocate resources.

A benefit-cost analysis can help to:

- Identify the most cost-effective way to improve the transportation system.
- Ensure that projects are aligned with the goals of the agency and the community.
- Build public support for infrastructure projects.
- Identify and mitigate potential negative impacts of projects.

A benefit-cost analysis might first consider the market test. Suppose the freight and passenger train services are priced to cover operating expenses plus the project cost less expected benefits, such as reductions in emissions and highway congestion. Would sufficient demand for freight and passenger service emerge? I am skeptical. When the alternative is rail-to-trail conversion, I expect emissions and highway congestion to be higher with tunneling. The trail will likely move more people, reducing local emissions and congestion.

A broad analysis of options is needed to avoid a costly mistake

With transportation technologies changing rapidly, conducting a forward-looking benefit-cost analysis is especially important. US transportation infrastructure projects sometimes fail because transportation modes change over time. Here are a few examples:

- The failure of canals: The Chesapeake and Ohio Canal (C&O Canal) was a canal that was built in the early 1800s to connect the Potomac River with the Ohio River. It failed to achieve its intended goal of becoming a major commercial route. Competition from an emerging transportation technology, railroads, was the primary cause of the C&O Canal's demise. Railroads were faster and more efficient than canals, eventually replacing canals as the primary means of transporting goods and people.
- The decline of streetcars: In the early 20th century, streetcars were a popular form of transportation in US cities. However, the rise of the automobile led to a decline in streetcar ridership. Many cities abandoned their streetcar systems, and the infrastructure was often sold for scrap.


Streetcar in early 20th century US city

- The demise of interurbans: Interurbans were an electric railway connecting a region's cities and towns. They were popular in the early 20th century but declined after the Second World War due to competition from the automobile and the interstate highway system.


Interurban in early 20th century US city

- The failure of high-speed rail: The US has a long history of planning for high-speed rail, but no major projects have been completed. One reason for this is the high cost of high-speed rail, which is often seen as not being cost-effective compared to other modes of transportation.
- The decline of passenger rail: Passenger rail service in the US has declined significantly over several decades. This is due primarily to competition from the automobile and the airline industry.

These are examples of major transportation infrastructure projects in the US that have failed because transportation modes changed over time. It is essential to consider technological change when deciding on transportation infrastructure investments.

Transportation technologies are developing rapidly and poised to displace rail further

The transportation sector is undergoing a rapid transformation. This change is driven by advances in communication and information technologies and the need to reduce emissions. These new technologies offer consumers better transportation options. Better options displace rail. Transportation technologies that are apt to replace passenger trains in the following decades include:

- E-bikes and E-scooters: Especially in the San Diego climate, E-bikes and e-scooters are a viable green transport option for many. The rolling terrain of San Diego means that bicycles are too sweaty or infeasible for some. E-bikes and E-scooters, now with more power and range, make this an excellent option. This trend is seen today.
- Self-driving cars: Self-driving cars are now being tested in US cities. They are improving rapidly and, with time, will revolutionize transportation, making it safer and more efficient. Self-driving cars and vans could be used to replace passenger train service. Combined with enhanced ridesharing and carpooling, which exists today, the ability of these technologies to displace passenger rail is high.

Self-driving car transportation concept

- Electric buses: Electric buses are being used in cities worldwide. They are becoming increasingly popular due to their environmental benefits. Electric buses could replace passenger trains in some cases, especially in urban areas where air pollution is a concern. Diesel trains are yesterday's technology.

A combination of these technologies will further displace passenger trains in the US in future decades. The specific technologies adopted will depend on which technologies best serve consumers. Vibrant competition among these technologies will bring rapid gains in services at reduced cost.

These technologies will improve the efficiency of the transportation system. For example, congested highways can benefit from self-driving vehicles. Freeway capacity increases when self-driving vehicles, both passenger and freight, move cooperatively to maximize safe throughput.

Even before self-driving arrives, ridesharing and carpooling apps will continue to displace train passengers. These apps have the enormous advantage of doing what users want: moving from A to B. With trains, the user must get from A to the train station and then from another train station to B. This is a primary reason cars tend to dominate trains.

These advances will improve the quality of life for residents. They make it easier to get around while reducing traffic congestion, pollution, and accidents. Access to jobs, education, healthcare, and recreation is improved.

The public should be skeptical about a tunneling project without a benefit-cost analysis

Those who benefit most—and most immediately—from a tunneling project are those who receive the money. These parties often lobby political decision-makers to fund the project. They have no interest in benefit-cost analysis; government cost is developer revenue. Such regulatory capture is common in our society. The public should be skeptical of projects unsupported by a forward-looking benefit-cost analysis.

The "Bridge to Nowhere" is a good example. The Gravina Island Bridge was proposed to connect the town of Ketchikan, Alaska, with Gravina Island, which contains the Ketchikan airport. The bridge was projected to cost $398 million. It was proposed in the early 1990s by the local congressional delegation. The bridge was opposed by many people, who argued that it was a waste of money and that it would not benefit the community. The skeptical public ultimately won. The bridge was never built. In 2005, Congress removed the federal earmark for the bridge, and the project was abandoned.

A primary concern was that the bridge would not benefit the community. Few people would have used the bridge, and it would have had a minor economic impact. The same may be true of the tunneling project. The "Bridge to Nowhere" is a symbol of wasteful government spending. We don't want the tunneling project to be another example.

The rail right-of-way can become a trail connecting communities along the coast

An opportunity cost of the tunneling project is continuing the existing rail right-of-way. With rail retirement, the right-of-way can be transformed into a vibrant green passageway connecting communities up and down the coast. Today, countless walkers, runners, and bikers are moving along the coast. The demand is proven. A rails-to-trails transformation would bring enormous benefits to San Diego.

This is not speculative. Rails-to-trails have a long history of success in urban areas. They have been shown to improve public health, boost economic development, and connect communities. Rails-to-trails can:

- Provide a safe and accessible place to walk, run, and bike. This can help to reduce obesity, heart disease, and other chronic health conditions.
- Attract businesses and tourists to an area. They can also increase property values and create jobs.
- Help to connect people from different parts of a community. This can improve social cohesion and reduce crime.

There are several examples:

- The High Line in New York City: a 1.45-mile-long elevated park built on a former freight rail line. It is now one of the most popular tourist destinations in New York City.

High Line in New York City

- The Riverwalk in San Antonio, Texas: a 15-mile-long pedestrian and bicycle trail along the San Antonio River. It is a popular tourist destination and a major economic driver for the city.

Riverwalk in San Antonio, Texas

- The Emerald Necklace in Boston, Massachusetts: a system of parks and parkways that Frederick Law Olmsted designed. It includes several rails-to-trails, including the Charles River Bike Path and the Esplanade.

Emerald Necklace in Boston, Massachusetts

- The BeltLine in Atlanta, Georgia: a 22-mile-long loop of trails and parks that is being built on a former railroad corridor. It is expected to be completed in 2030.

BeltLine in Atlanta, Georgia

These rail-to-trail conversions harness the natural beauty of the setting. The same—in abundance—would be true in San Diego.

Tunneling projects typically take longer and cost more than expected

The benefit-cost analysis should recognize not only the dollar expense but the disruption of years of construction. Residents and businesses will be displaced. Unfortunately, tunneling projects in the US are prone to cost and time escalation. This is because tunneling is a complex and challenging process with risks. Some of the most common risks include:

- Unforeseen ground conditions: The ground conditions at the site of a tunneling project can vary significantly, and it is often difficult to predict what conditions will be encountered. This can lead to delays and cost overruns.
- Geotechnical problems: Geotechnical problems such as unstable ground, groundwater, and soil contamination can also pose significant challenges for tunneling projects. These problems can require additional engineering and construction work, adding to the project's cost.

Regrettably, cost overruns and delays are the norm for tunneling projects. Here are some examples:

- The Big Dig: a massive tunneling project in Boston, Massachusetts. It was initially estimated to cost $2.8 billion, but the final cost was $15.1 billion. Delays and cost overruns plagued the project, and it was ultimately completed six years behind schedule.
- The Second Avenue Subway: a new subway line in New York City. It was initially estimated to cost $4.6 billion, but the final cost is expected to be $12 billion. The project has been delayed multiple times and is not expected to be completed until 2027.
- The Chicago Central Area Connector: a proposed tunnel connecting O'Hare International Airport and downtown Chicago. It was initially estimated to cost $5.5 billion, but the current estimate is $8.5 billion. The project is not expected to be completed until 2035.
- The California High-Speed Rail: a proposed high-speed rail line connecting San Francisco and Los Angeles. It was initially estimated to cost $33 billion, but the current estimate is $100 billion. The project has been delayed multiple times and is not expected to be completed until 2033.

California High-Speed Rail: A bridge to nowhere?

Conclusion

There should be a consensus that the costs and benefits of tunneling need careful study before pushing forward. It is plausible that a rail-to-trail conversion is a better alternative.

Passenger train usage has declined in recent years because people have better options. This trend will continue in the years ahead as new technologies bring ever-better options. A rails-to-trails pathway would move many more people along our beautiful coast at a fraction of the expense and bring joy to all the residents and tourists using it.

Let’s move to the future and not tunnel to maintain the past.