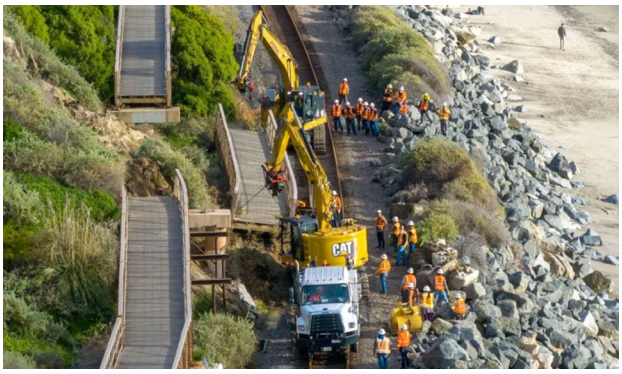
Independent, forward-looking research is needed to assess the best rail options

Before spending $20 billion tunneling through Del Mar and San Clemente, consider alternatives and do what is best.

Peter Cramton[1] and Kevin Patrick[2]

The Coaster train along Del Mar's eroding bluff.



San Clemente's closure in January/February 2024.

Orange County Transportation Authority's and San Diego Association of Governments' first step toward addressing the coastal train off San Clemente's and Del Mar's eroding coast should be a forward-looking benefit-cost analysis to identify the best alternative to the existing location. It may be a rail-to-trail conversion.

The San Clemente and Del Mar rail issues are intimately linked. Passage through both towns is required for the rail to connect Los Angeles and San Diego. OCTA and SANDAG must collaborate with the LOSSAN Rail Corridor Agency and other local, state, and federal agencies in addressing the challenge.

Del Mar and San Clemente coastal erosion make the rail line unsustainable. SANDAG has focused on one remedy: rail relocation, a venture estimated to take 12 years (2035) and cost $4 billion. In Orange County, the relocation cost estimate is $16 billion. But is moving the rail worth the cost? To answer this question, OCTA and SANDAG need a forward-looking benefit-cost analysis — as the US Department of Transportation requires — to identify the best option to achieve our goals.

Our major research universities and institutes have international experts in economics, transportation, engineering, public health, and policy who are eager to engage in addressing societal challenges. We encourage the relevant government organizations to create an initiative to examine this topic. Talented research teams would then submit research proposals for evaluation and peer review. An expedited study

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would take more than a year to complete, but this is time well spent. The sooner we are on the right path, the lower the cost, the higher the benefit, and the faster the resolution.

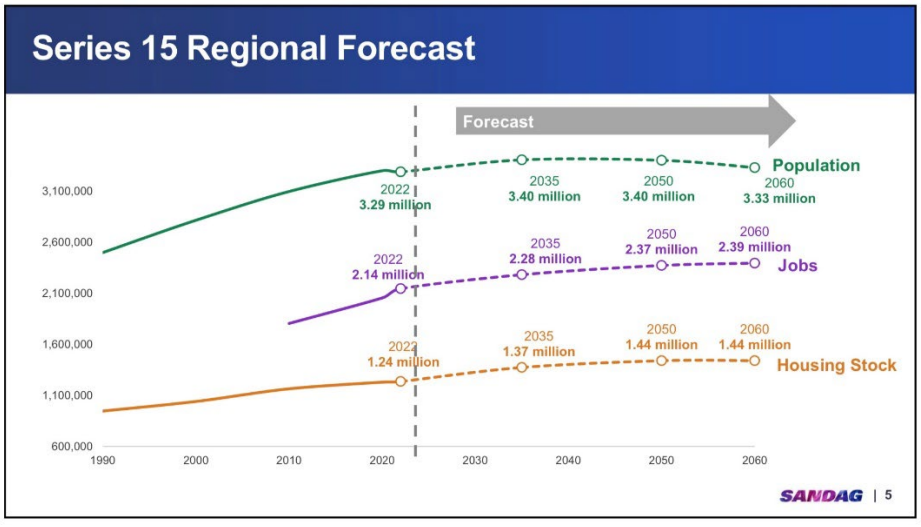
The alternatives evaluated should include the retirement of the rail line. The rail line is not essential. San Diego was not significantly affected when coastal collapse led to months-long train outages. Consider each rail line use: military, freight, and passenger train.

A spokesperson for Camp Pendleton said that closure would have "little to no impact" because most military equipment is moved on trucks. The little that is carried by train can be diverted to nighttime trucks.

Regarding freight, the rail moves 0.04 percent of California's freight. Its role is tiny between San Clemente and San Diego because we are the last stop in the rail network. Trains move 28 percent of US freight and serve a vital role in the heartland of the US, moving coal, salt, oil, chemicals, cement, agriculture, and container goods. San Diego is far from the heartland and does not have an industrial economy. Interstate 5 could readily absorb San Diego's freight without increasing congestion. In the 12 years it would take to build a tunnel, vehicle technology advances will significantly increase I-5 capacity, especially at night when self-driving trucks can platoon effectively. These technologies exist today. Advanced versions will be implemented by 2035, irrespective of the train decision, so the incremental cost of these technologies is zero.

The prominent use of the rail line is passenger transit. Yet passenger use has been declining since 2016 [Surfliner, Coaster] on the Del Mar segment. If we optimistically assume ridership increases to the 2019 pre-pandemic levels of 1,134,881 roundtrips per year, a tunnel tax of $132 per roundtrip in 2023 dollars would be required to cover the $4 billion cost assuming a 3 percent real discount rate and a 100-year tunnel life. The analogous San Clemente tunnel tax to cover the $16 billion spent is $779 per roundtrip, totaling $911 per roundtrip through both towns. A nonstop economy roundtrip airfare from John Wayne International to New York City on United Airlines is $315. Thus, including only the tunneling cost, a roundtrip from San Clemente to San Diego (60 miles) is three times more expensive than a nonstop roundtrip airfare from John Wayne to New York City (2440 miles).

Won't train ridership increase because of population growth? No population growth is expected in the coming decades. Moreover, the train must compete with rapidly improving alternatives as we electrify transportation. Declining ridership is the norm as new technologies replace old ones.



SANDAG Board, July 2023, SANDAG Data Science Group

One of the train's glaring problems is equity. The train's tiny ridership caters to the highest-income residents in San Diego. Sixty-four percent of the Coaster's riders have incomes of $75,000 or more, and 97 percent own a car and typically drive their vehicles to the train station. There are many better opportunities to improve transit, especially for those with less income. To better serve lower-income groups, money should be spent on improving transit options targeted to the group's needs.

But wouldn't the rail line reduce emissions and traffic congestion? Sadly, no. Diesel trains are a source of noise, carbon, nitrogen oxide, and particulate emissions. Tunnel construction would release considerable emissions. The train diverts 4,500 out of 1.3 million daily automobile trips, or 0.3 percent from I-5. A rail-to-trail conversion would move many more without emissions.

Transportation is undergoing a rapid transformation. These new technologies offer consumers better options. Better options displace rail. Transportation technologies most apt to replace passenger trains include e-bikes, e-scooters, and electric vehicles. 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 transportation efficiency. Congested highways can benefit from the advanced features of electric vehicles. Freeway capacity increases with automated vehicle control—from enhanced cruise control to full self-driving. Advanced passenger and freight vehicles 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.

With retirement, the rail corridor can become 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.

Hikers on a trail in Torrey Pines State Park

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. Here are a few examples. The High Line in New York City is 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. The Emerald Necklace in Boston, Massachusetts, is a system of

parks and parkways; it includes several rails-to-trails, including the Charles River Bike Path and the Esplanade. These rail-to-trail conversions harness the natural beauty of the setting. The same — in abundance — would be true in San Diego and Orange Counties.

The current rail corridor from San Clemente to San Diego is 60 miles long. It would be a bold move to turn this entire right of way into a trail like the ones described. However, forward-looking efforts like this have precedents in California, with our national leadership in improving air quality and the California Coastal Act of 1976. These helped preserve and promote residents' health, well-being, and access to recreation state-wide. Such an extensive rail-to-trail effort in a densely populated area of the state could have an equal if not greater impact on the public's health and become internationally renowned.

Years of research have documented the positive benefits of rails-to-trails initiatives.

Increased physical activity across populations. Studies consistently show that rails-to-trails conversions increase physical activity among diverse populations. The availability of safe, accessible trails encourages more people to engage in walking, cycling, and other forms of active transportation.

Reduce the prevalence of obesity. The research links the presence of trails to lower obesity rates. By providing a convenient and enjoyable way to exercise, these trails help combat obesity across age groups by promoting regular physical activity.

Enhanced access to recreational spaces. The conversion of rail corridors into trails improves access to recreational resources. This is particularly valuable for children and families, as proximity to such resources is associated with reduced childhood obesity rates and promotes lifelong healthy habits.

Support physical activity among diverse groups. Rails to trails projects cater to a wide range of physical activities, including walking, biking, and using e-bikes. This inclusivity makes the trails appealing to a broad audience, from casual walkers to more serious cyclists and among older adults and those with disabilities, thereby supporting diverse fitness and mobility needs.

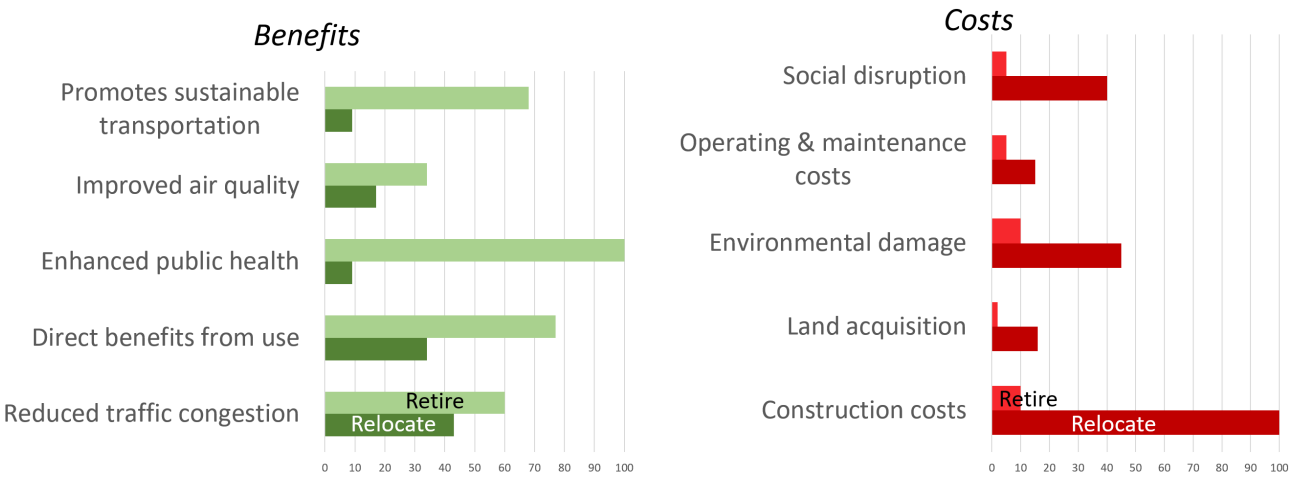
Perceived safety and positive public attitudes. The studies find that these trails are perceived as safe environments for physical activity, which is crucial for encouraging usage among all age groups. Positive public attitudes towards trails further support community engagement and participation.

Broader health and community benefits. Beyond physical health, the availability of trails contributes to improved mental well-being and social interaction opportunities. Trails serve as community assets that enhance the quality of life and foster a sense of community among users. They improve air quality by reducing emissions from cars, promote biodiversity, and reduce urban heat and noise pollution.

The combined population of Orange and San Diego Counties is about 6.5 million. Imagine the potential benefits to community health and well-being if just 5-10% of the population used this new trail for transportation and recreation every week. This estimate is not far-fetched. Research showed that one such trail in Northeastern Pennsylvania had 10,000 trail visitors per month over 10 months of 2018. More precise forecasting is needed, but it seems that the number who would benefit from a new OC-SD trail would dwarf those who are currently using the corridor for train commuting.

Our message is not that rail retirement dominates rail relocation. We do not know what the best option is. The stakes are sufficiently high that an independent, forward-looking analysis, including Orange and San Diego Counties, is needed. Such a study would rigorously explore the best rail relocation and retirement alternatives using state-of-the-art methods, data, and expertise from many disciplines.

We oppose plans to move ahead with rail relocation before considering retirement. Retirement may be the best choice, as these illustrative charts capture our intuition formed over many decades of research in transportation, medicine, public health, communications, information technology, and electricity. Our intuition may be wrong, hence the need for scientific evidence-based analysis.



Illustrative intuition of benefits and costs of rail retirement (light shade) and relocation (dark shade)

Retirement brings extensive benefits as the right-of-way is transformed into a vibrant trail for walkers, runners, and those on wheels— bikes, e-bikes, skates, skateboards, scooters, and e-scooters. There are direct benefits from use, both commuting and recreational. Indeed, we would expect recreation to be a prominent use. Our coastal resource brings joy to millions today; the trail would amplify that joy. The trail better promotes sustainable transportation and improves air quality.

For costs, the most significant differences are in construction costs, land acquisition, environmental damage, and social disruption. Spending even a small portion of the retirement cost savings on improving transit options for lower-income users would promote equity.

Careful study is needed to confirm our intuition or explain why it is wrong.

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 rail-to-trail pathway would move more people along our beautiful coast at a fraction of the expense and bring joy to all who use it. Let us study the leading alternatives to see what is best for Southern California.