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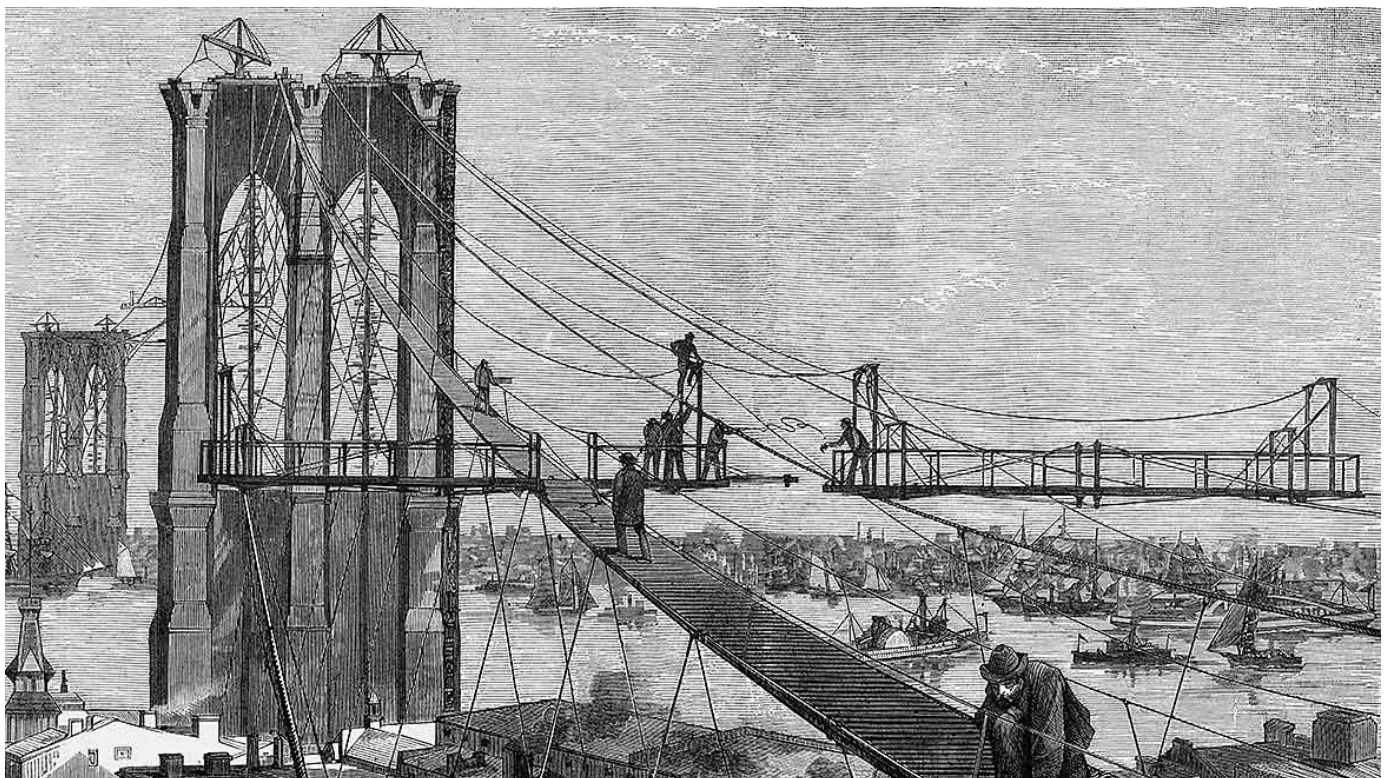
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PLANNING MAGAZINE

Lessons on American Infrastructure

As Washington contemplates a new infrastructure plan, we round up the documentaries that detail some of our most enduring mega-projects.



A Ken Burns documentary explores the building of the Brooklyn Bridge, illustrated here in an 1877 engraving. Image courtesy of bauhaus 1000/DigitalVision Vectors.

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By EZRA HABER GLENN

This summer, everyone is talking about infrastructure.

At the time of this writing, no final agreement has been reached in Washington, but competing federal proposals contemplate spending upward of a trillion dollars or more (<https://www.nytimes.com/2021/06/10/us/politics/infrastructure-biden-senate.html>). It's music to the ears of many planners eager to attend to a long backlog of delayed projects and deferred maintenance on our roads, bridges, rails, subways, water and sewer systems, electric grids, public housing, and civic buildings — to name a few.

While the exact shape of the eventual compromise is yet to be determined — and the definition of what should and shouldn't count as "infrastructure" remains up for debate — it nonetheless seems like an opportune moment to devote this column to some marvels of American infrastructure.

A number of big Hollywood films star roads, bridges, and rails: everything from Cecil B. DeMille's *Union Pacific* or the early science-fiction classic *Transatlantic Tunnel* (just what it sounds like — check it out! (https://www.youtube.com/watch?v=gYWwEgZwzrI#_blank)) to the Academy Award-winning *Bridge on the River Kwai*, plus more "road movies" than I could name. (We'll save those for another column ...) Alternately, we could feature a tongue-in-cheek series of infrastructure films with Jeff Bridges, Jean-Claude Van Damme, Roddy Piper, Eugene Levy, and Sydney Greenstreet.

But to keep things on the serious side, let's focus on the real-world projects, planners, and engineers of American infrastructure, as viewed through a number of excellent documentary films.

The Race Underground Promo



One nation, underground

Although infrastructure has been a feature of city life since the early days of fortified walls and Roman aqueducts, American urban development entered a truly transformative phase with the introduction of underground subways. Just as the elevator allowed architects to build skyscrapers and exploit unused space high above the ground, subway tunnels helped planners make use of space below our city streets to untangle the increasingly crowded networks of urban transportation.

The Race Underground (<https://www.pbs.org/wgbh/americanexperience/films/race-underground/>) (2017) — an excellent installment of PBS's *American Experience* (<https://www.pbs.org/wgbh/americanexperience/>) series — explores this amazing period of innovation and growth as cities competed to develop new subway networks and pioneered entirely new techniques of engineering and construction. The documentary is based on a book of the same name (<https://us.macmillan.com/books/9781250061355>) by Doug Most, and (as with most of the excellent programming from PBS) is accompanied by rich troves of supplementary material online, including articles, interviews, and some great archival photographs. You can watch it on Amazon Prime.

Divided Highways - CAPTIONED



From sea to shining sea

While the short- and long-term effects of America's interstate highways — from suburban sprawl and the destruction of low-income and minority neighborhoods to pollution, climate change, and the obesity epidemic — have been critiqued, debated, and opposed by planners and activists for decades, the system is nonetheless a striking example of a big plan implemented at an epic scale over an impressive time period.

Divided Highways: The Interstates and the Transformation of American Life

(<https://peabodyawards.com/award-profile/divided-highways-the-interstates-and-the-transformation-of-american-life/>) (1997) is a well-paced, engaging, and surprisingly fresh documentary about the decades-long effort to build it. Directed by Lawrence Hott and Tom Lewis (who, as above, wrote the book upon which the film is based), the Peabody-Award winning film features cameo appearances by Julia Child, Dave Barry, and even Mr. Rogers. You can watch it for free in the YouTube video above.

For an old-timey kick, you might want to follow this one up with *We'll Take the High Road*

(<https://archive.org/details/62784-well-take-the-high-road-vwr>), a promotional film about the Interstate Highway System produced in 1957 by the American Road Builders Association.

Ken Burns discusses producing his documentary on the Brooklyn Bridge - EMM'



Star spangled spanners

The 1981 Oscar-nominated documentary *Brooklyn Bridge* (<https://www.pbs.org/kenburns/brooklyn-bridge/>), introduced now-celebrated filmmaker Ken Burns to the world and set a new standard for using film to bring archival sources to life.

The film recounts the tale of the construction of the titular bridge, which took more than a decade. With a main span of 1,594 feet, the Brooklyn Bridge was the longest suspension bridge in the world (1.5 times longer, in fact) by the time it opened in 1883. The price tag was immense for the time: over \$15M. That's more than \$400M in today's dollars, which might sound like a bargain, but remember, this was before many modern regulations, and both labor and materials were a lot cheaper. Even more costly, over two dozen workers died during construction (again: this was before many more modern regulations — nearly a century before OSHA). Nonetheless, the end result was considered a marvel of technology, engineering, and the emerging science of project management, and has been celebrated in painting, poems, literature, and dozens of famous films. You can stream this film, along with every documentary from Ken Burns, through PBS and on Amazon Prime.

For an intriguing short to follow up this weighty story, be sure to view the so-called "[Pearl Harbor of Engineering](https://www.youtube.com/watch?v=GBa_USoZxFM) (https://www.youtube.com/watch?v=GBa_USoZxFM)," the infamous archival footage of the long span and short life of the original Tacoma Narrows Bridge, affectionately known as "Galloping Gertie."

More than 1,000 feet longer than the Brooklyn Bridge, it was constructed in record time at a huge savings using state-of-the-art suspension techniques. Unfortunately, as soon as it was completed in 1940, it was observed to sway more than anticipated, especially in high winds. Later that year, on a particularly windy day, the rhythmic swaying developed into an oscillating pattern that reinforced itself through a process of harmonic something or other (the physics is complicated here — and hey, I'm just a film reviewer). As a result, the bridge literally tore itself apart.

But don't take my word for it — you can [view the footage \(https://www.youtube.com/watch?v=GBa_USozxFM\)](https://www.youtube.com/watch?v=GBa_USozxFM) yourself. Amazingly for a time before ubiquitous smartphone cameras, the whole thing was captured on film, serving as a poignant (if expensive) cautionary tale about the importance of planning, design, and complex math where new technologies are concerned.

Woody Guthrie's Columbia River Songs in The Columbia (1949 Film)



This dam is your dam

One of the oldest forms of mega-project — blocking a river to provide irrigation, flood control, hydropower, or lakes for fishing and recreation — is also one of the most contentious. For over 5,000 years, humans have been damming rivers (beavers, of course, have been at it much longer), and for most of this history we've been fighting about it as well. Given the awesome scale, cost, complexity, and controversy — and the potential for both big winners and powerful opposition — it's no surprise that the success or failure of a dam project may depend as much on politics as on engineering.

A case in point is the damming of the Columbia River in the Pacific Northwest, part of FDR's New Deal program of public works to provide both jobs and infrastructure. Eleven dams and associated waterworks were constructed over more than a decade, including the famous Grand Coulee Dam. To win public support for the massive undertaking, the federal government funded a promotional film and hired folk singer Woody Guthrie to compose a series of ballads celebrating the project.

The documentary, *The Columbia River* ([https://archive.org/details/TheColumbiaRiver# blank](https://archive.org/details/TheColumbiaRiver#blank)), wasn't completed until 1948 and only included three of Guthrie's original tunes. But the full collection (<https://open.spotify.com/album/6XkynkX5r41RV8qfMVcztr>) — over two dozen ballads written in just 30 days, including "Roll on Columbia," "Pastures of Plenty," and "The Biggest Thing That Man Has Ever Done" — is considered to be some of his most powerful and enduring work, demonstrating the power of song to inspire a struggling and downtrodden nation to work together to create a brighter future. (Imagine today the Biden administration hiring Bruce Springsteen or Lin Manuel Miranda to record an album promoting the latest infrastructure deal.)

In closing this celebration of infrastructure, it's also worth noting the many less dramatic — but equally important — systems that support our lives and work every day. From housing (ideally high-quality, well-maintained, and affordable) and utilities (ideally reliable, sustainable, and equitably provided) to the "softer" infrastructure of public services and facilities (schools, daycare, clinics and hospitals, mail trucks and buses – if we rely on it, it's a kind of infrastructure). Even information and planning capacity. That's right, you're infrastructure, too.

A lot of hidden structures are crucial to the daily functioning and continued growth out our cities and regions. They've supported us for years. Now it's time to return the favor ([/policy/priorities/](#)).

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