AECOM Imagine it. Delivered.

Transformational **Infrastructure**

Innovations in transportation

The future is right

As we enter a new age of investment in infrastructure, there is considerable focus on mobility, disruptive technologies and the power of infrastructure projects to deliver positive change. The future is faster, smarter and more connected.

Imagine:
- Roads that charge trucks and cars
- Hyperloop transport for people and goods at 700 mph
- Autonomous public transit that gets you there safer and more efficiently
- Infrastructure that communicates and helps save lives

We are partnering with visionary clients, connecting the best ideas and knowledge from around the world to deliver infrastructure for our future.

Spaceport America
Truth or Consequences, New Mexico, U.S.

Cover:
Hyperloop One
Moapa, Nevada, U.S.

up ahead

Imagining what's next, together

Bold thinking and bold actions drive progress. We know that we can't simply build our way out of congestion, so we take the most innovative technologies available and work with you to improve the safety, mobility and effectiveness of your transportation systems.

When we bridge the gap between existing infrastructure and innovation, we help you imagine things once thought impossible, and deliver the solutions you need today while laying the foundation for your breakthroughs of tomorrow.

From safely and efficiently moving people and freight, to connecting and helping cities become smarter and more resilient, our transportation experts are at the forefront of our industry's leading edge technologies.

Projects **in motion**

Smart powered lanes

Charge on the go with electrified highways

Electric vehicles are becoming more common on our roadways but their growth is limited by motorists' concerns over vehicle range and charging infrastructure. And while the cost of smaller passenger electric vehicles has decreased over time, bigger vehicles like freight trucks are still substantially more expensive because they need large and costly batteries, even for short-range trips. Our experts are working on building solutions to these challenges — inductive roadways that allow electric vehicles to charge as they drive.

The Colorado Department of Transportation, working in partnership with AECOM, is investigating a pilot project to develop a wireless technology that will allow vehicles to charge their electric batteries while driving at full speed over a roadway. A process of shifting stored energy from batteries located on the vehicles to the roadway is used. This technology has been tested on a closed track and has proven to transfer energy safely without impacting vehicle operation.

Connected and autonomous vehicles

A disruptive and beneficial change to travel and mobility

Connected and autonomous vehicles (CAV) are about to usher in a whole new transportation experience. It's expected that the CAV industry could generate $5.0 to $7.5 trillion in net economic benefits over the next 30 years. Our extensive research and implementation of this technology – in North America and abroad – ideally positions us to assist agencies and technology companies to prepare for and implement this exciting industry advancement.

Among our many CAV projects, we are working with the Minnesota Department of Transportation on a pilot project to research requirements and solicit a vehicle partner for an autonomous bus that can safely operate in cold climates. Our CAV team is also assisting the New Zealand Ministry of Transport to assess its technical readiness for the deployment of level three and four CAVs.

Bringing infrastructure projects to life

Commuters take a trip to the future

Two-dimensional plans can be hard to interpret and they don't convey the true impacts of big construction projects. Immersive technology is a powerful communication tool that's being used on large infrastructure projects from high-speed rail to new highways and bridges. It allows us to show people the near reality so they better understand what is proposed and are more inclined to support major infrastructure projects.

In the United Kingdom (U.K.), we supported Network Rail in their use of immersive technology to get passengers on board with the US $1.02-billion Waterloo Station expansion. Using virtual reality headsets, passengers were given a glimpse of the completed future station. And their response was impressive. Once they saw how the station would look, most were excited by the benefits of the upgraded and extended facilities. The animation produced by the immersive studio team is also the centerpiece of a media launch for the press and politicians to visually explain the Waterloo Station expansion story.

Above, right:
Network Rail's virtual reality headsets
Waterloo, London, U.K.

Right:
CDOT's RoadX program
Colorado, U.S.


Boots

Projects in motion

Optimizing infrastructure lifespan

High and dry

Originally developed by AECOM for suspension bridges in Japan, an innovative cable dehumidification process has been successful in slowing corrosion of high tensile steel wires within the main cables of suspension bridges. This technique is being fitted on almost all new suspension bridges and retrofitted on many existing structures. It optimizes performance by allowing main cables to reach a 120-year design life.

This system is in use around the world, notably on a number of bridges in the U.K., and on the Chesapeake Bay Bridge and the Delaware Memorial Bridge in the United States. Our transportation experts stay abreast of emerging sustainability and resilience technologies and effectively apply them to the projects on which we work. Whether its a stand-alone structure or a comprehensive asset management program, our professionals work with you to optimize the lifespan of your infrastructure assets.

Alternative delivery to create world-class transportation hubs

Airports of tomorrow

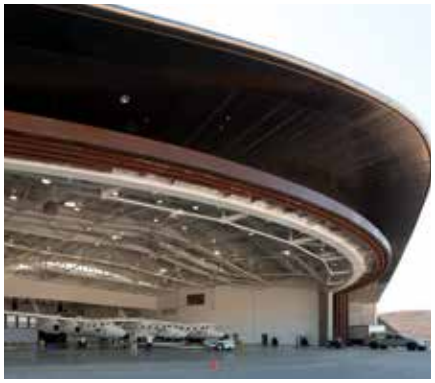
In this era of constrained public finances and growing demands for improved infrastructure, innovative funding mechanisms are needed to speed up project delivery. Scarce public funds are being leveraged with private capital to accelerate large-scale public infrastructure projects. As a fully integrated provider of design, build, finance, operate and maintain services, we can guide infrastructure owners through this complex process, or partner with private industry on some or all aspects of an alternative delivery project model.

At New York City's LaGuardia Airport, a deal is now in place using the public-private-partnership (P3) model for replacing the Central Terminal Building — the largest P3 in American history. For this groundbreaking transaction, we served as the P3 technical advisor in support of LaGuardia's owner, the Port Authority of New York and New Jersey. In Toronto, Canada, we were lead engineer and lead designer on the design-build-finance of the UP Express elevated guideway and station, connecting Pearson International Airport with the rail corridor to Toronto's Union Station.

William Preston Lane Jr. Memorial (Bay) Bridge
Anne Arundel and Queen Anne's Counties, Maryland, U.S.
Photo credit: U.S. Army Corps of Engineers

California High-Speed Rail Authority
California, U.S.

Hyperloop One DevLoop
Moapa, Nevada, U.S.



Spaceport America
Truth or Consequences, New Mexico, U.S.

Connecting cities – safely, faster and more reliably

Bringing people together for a better world

As cities grow, urban regions form and demand for transportation connecting people in these distant urban centers also grows. To address this need, we are working with clients to plan and design high-speed ground transport systems that rapidly move more people between major urban centers.

Our presence in the high-speed rail (HSR) market is felt across North America and around the world with projects in Europe, Africa, Asia and Australia. Our recent efforts include examining the feasibility of implementing Maglev service versus HSR on proposed routes for the Maryland Transit Administration and for the Georgia and Tennessee Departments of Transportation. Maglev vehicles are moved by magnetic levitation; they don't make contact with the guideway, they don't need engines, and they don't burn fuel. Vehicles travel along a guideway using magnets to create both lift and propulsion, reducing friction and allowing very high speeds.

Hyperloop – a new form of transport

Imagine traveling at airline speeds for the price of a bus ticket. In 2012, SpaceX founder Elon Musk questioned whether there could be a fifth mode of transportation – one that is faster than air travel to connect cities that are less than 900 miles apart. Musk proposed the Hyperloop, a mode of passenger and freight transportation that would propel a pod-like vehicle through a reduced-pressure tube, potentially exceeding airliner speeds.

AECOM is leading a study on how this new high-speed transportation technology could efficiently transport goods between the Ports of Los Angeles and Long Beach and their inland distribution centers, as well as how it can be used along Colorado's Front Range. Aside from the obvious mobility benefits, we anticipate this new high speed system can improve environmental air quality, alleviate congestion on southern California roadways and increase port volumes over the next 20 years.

Space travel

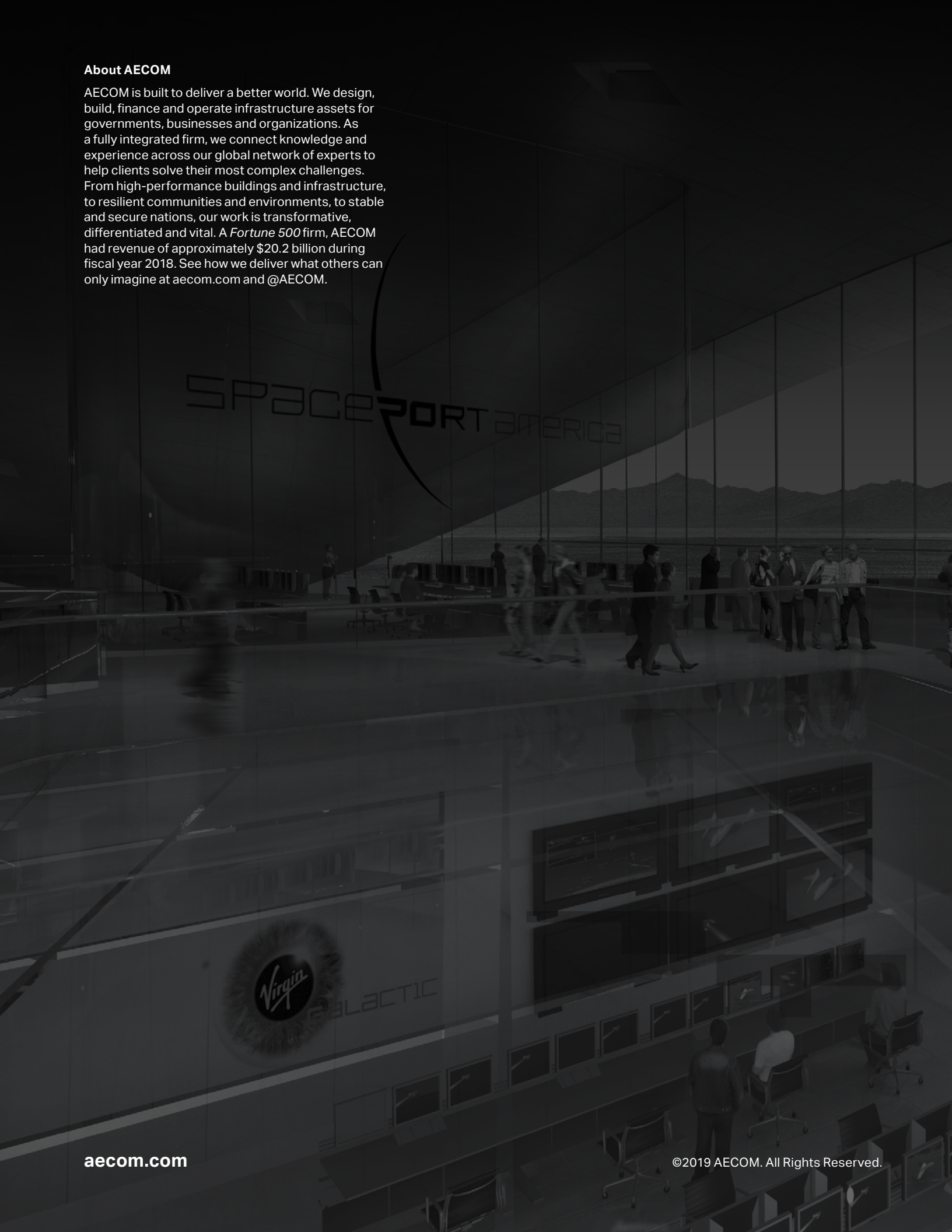
Turning a vision into reality

Humans have dreamed of spaceflight since before the Middle Ages, but it wasn't until halfway through the twentieth century that rockets became powerful enough to overcome the force of gravity and open space to human exploration. The U.S. was among the first countries to create a missile program, forging the way for future advancements in space travel.

Spaceport, the world's first hub for commercial space travel, aims to enable affordable and efficient access to space. Through our legacy companies, we were the lead consultant for the main facility, responsible for architectural oversight and building engineering. Our professionals also provided architecture and engineering for airfield, road, utility infrastructure, system integration and terminal design to help make this space age vision a reality. Not only the headquarters for the New Mexico Spaceport Authority, this LEED Gold facility is the operating base for Sir Richard Branson's Virgin Galactic suborbital spaceline.

About AECOM

AECOM is built to deliver a better world. We design, build, finance and operate infrastructure assets for governments, businesses and organizations. As a fully integrated firm, we connect knowledge and experience across our global network of experts to help clients solve their most complex challenges. From high-performance buildings and infrastructure, to resilient communities and environments, to stable and secure nations, our work is transformative, differentiated and vital. A *Fortune 500* firm, AECOM had revenue of approximately $20.2 billion during fiscal year 2018. See how we deliver what others can only imagine at aecom.com and @AECOM.



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