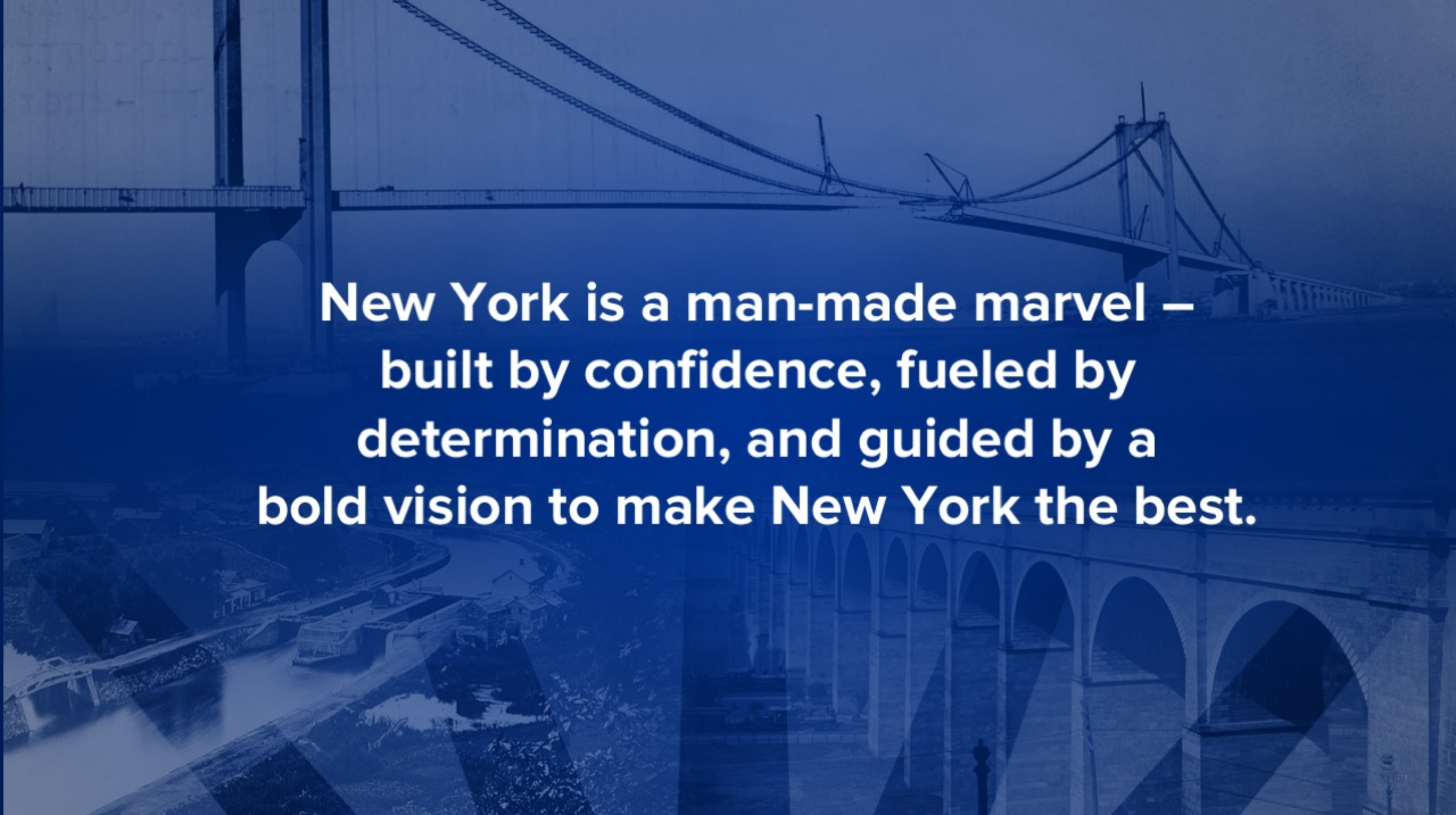
BUILDING TODAY FOR A BETTER TOMORROW

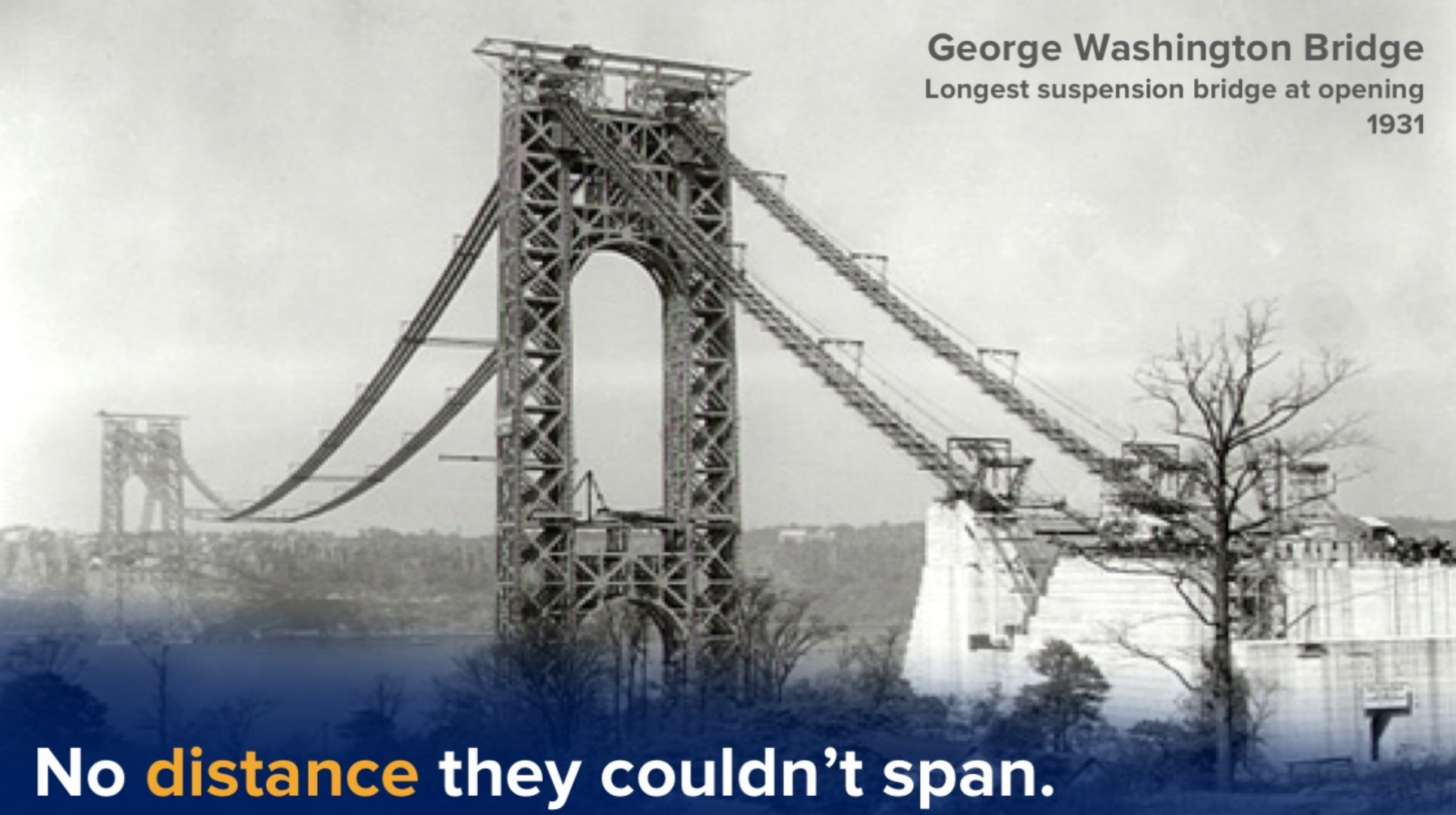
Reimagining New York's Crossings

NEW YORK STATE



New York is a man-made marvel –
built by confidence, fueled by
determination, and guided by a
bold vision to make New York the best.


These men and women
believed there was
Chrysler Building
Tallest building for 11 months
and tallest of its kind today
1932
No height they couldn't scale...


George Washington Bridge
Longest suspension bridge at opening
1931
No distance they couldn’t span.


These visionaries
built the greatest state in the nation.

The foundation of their vision was

an unmatched transportation system.

They knew that growth and development

were driven by mobility and access...

And what they constructed
carried us for decades.


New York must
continue to grow to lead and
to meet the challenges of today.

We are already on the way with our plan to rebuild New York's transportation system over five years.


We do not intend to repair or refurbish.
We intend to reimagine and transform
to meet today's new challenges.


We have a $100 billion
program to build a
“New New York”...


From the east...
N
W
E
S
New Airport at LGA
LGA AirTrain
MacArthur Airport
East Side Access
LIRR Third Track
LIRR Double Track
JFK
Republic Airport


From the north...
N
W
E
S
Upstate Roads & Bridges
Upstate Airports
Stewart Airport
New Tappan Zee Bridge
Bronx Metro-North Stations
New Airport at LGA
2nd Avenue Subway
LGA AirTrain
MacArthur Airport
East Side Access
LIRR Third Track
LIRR Double Track
JFK
Republic Airport


From the west...
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Bronx Metro-North Stations
Javits Convention Center
New Airport at LGA
2nd Avenue Subway
LGA AirTrain
MacArthur Airport
Gateway Tunnel
Penn-Farley Complex
East Side Access
LIRR Third Track
LIRR Double Track
JFK
Republic Airport

BUILDING THE NEW NEW YORK


Today we're focusing on the
MTA bridges and tunnels.

The MTA is known for running subway, bus and commuter rail service, but it also operates the TBTA – our bridges and tunnels.

What made New York?

Our harbor – water


A major component of our infrastructure
is our bridges and tunnels.

Our crossings present
challenges and opportunities –

Bottlenecks? Security? Danger?


They must be reimagined
for a new reality.

We are calling it the

New York Crossings Project

New York Crossings Project

Today we will discuss 5 components to New York Crossings:

1. Reducing Traffic
2. Enhancing Security
3. Hardening and Remediation
4. Conservation
5. Design and Public Art

1

Today our roads are some of
the most congested in the nation...

Peoples' commutes are among the longest in the world and cited as a reason for moving away from the region.

- From Suffolk County: 2 hours 15 minutes
- White Plains: 1 hour 15 minutes
- North Jersey: 1 hour 25 minutes
- South Jersey: 1 hour 45 minutes


4 new Metro-North stations in the Bronx
2nd Avenue Subway
East Side Access
LIRR Third Track
Penn-Farley Complex
LIRR Double Track
The best way to reduce traffic is
to increase mass transit – which we're doing.


The second best way is
to make traffic flow faster.

On average, 800,000 vehicles cross MTA tunnels and bridges each day, and drivers can wait up to **1 hour and 45 minutes** in cash lanes every month.

As a whole, New York drivers spend
more than 6,400 hours every day
waiting to pay tolls at MTA crossings.

The solution: Automatic tolling, which collects tolls without requiring vehicles to stop.

How Automatic, or "Open Road Tolling" Works: 3 Simple Steps

1. Sensors and cameras are suspended over the highway on a structure called a "gantry." Sensors can read cars speeding in excess of 90 MPH.
2. Each time a vehicle with E-ZPass travels under the sensors, it is automatically charged.
3. For non-E-ZPass vehicles, a camera records the license plate and a bill is mailed to the registered owner of the vehicle.

Automatic tolling is a proven system.

The Thruway uses it
on the Tappan Zee Bridge...

And the MTA has successfully tested All Electronic Tolling at the Henry Hudson Bridge.

All Electronic Tolling at the Henry Hudson Bridge has been a success.

- 94% of vehicles use E-ZPass.
- 6% are billed by mail and while 2/3 pay, fees from violations and late payments offset the loss of unpaid tolls.
- Collisions have been reduced from 32 prior to automatic tolling to 7 so far this year.


Building on this accomplishment and to save drivers time and money, we will now bring automatic tolling to every MTA crossing.
No more MTA toll booths.


We project that commuters will save
up to 21 hours of drive time every year.

2

Our nation is facing
a growing threat to its security.

New York is a target.

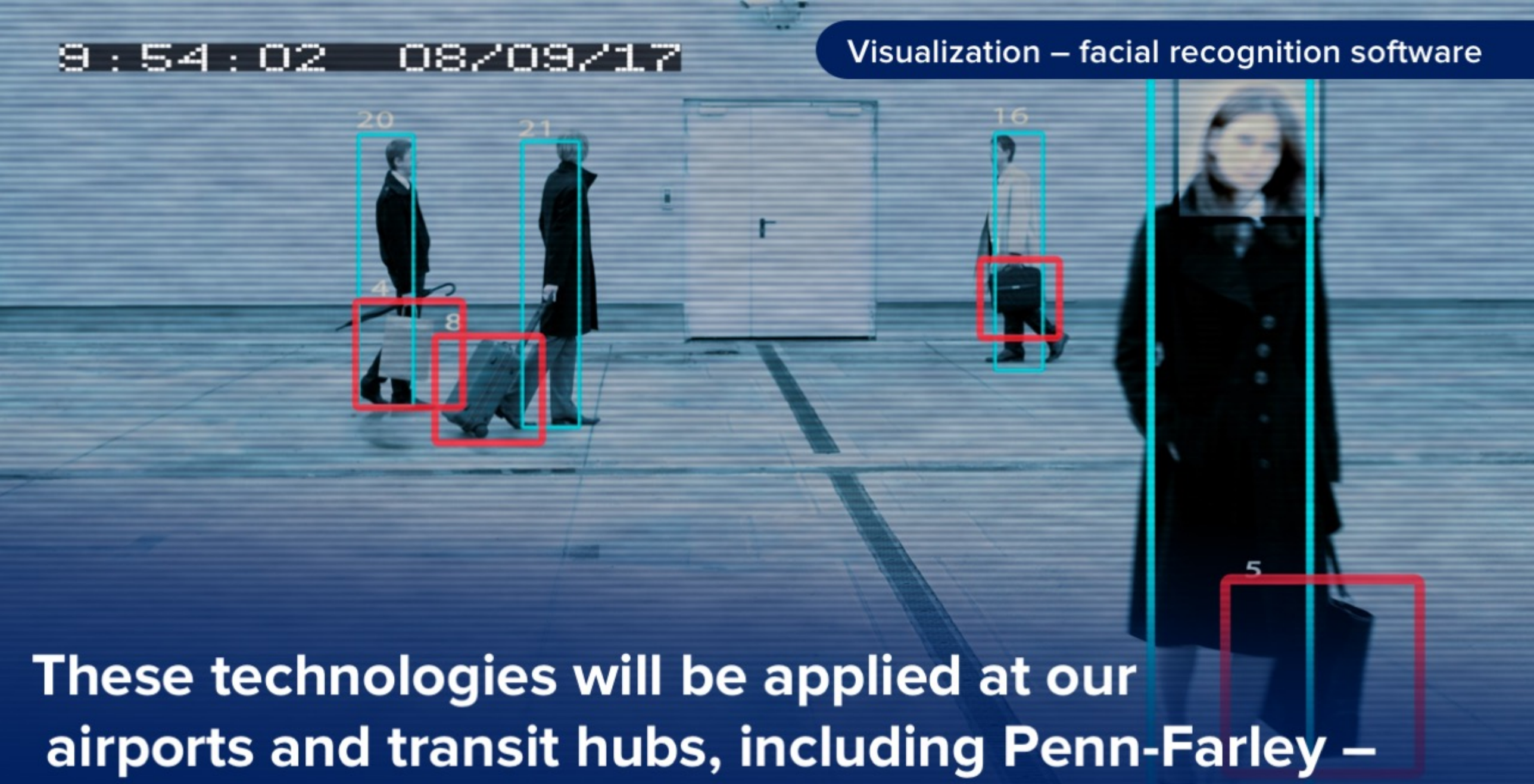
Our crossings are
both an opportunity and challenge:

Challenge: structural vulnerability

Opportunity: security checkpoint

We need to recognize the threat and
integrate emerging technologies
into our security design.

At each crossing, we will install advanced cameras and sensors to read license plates and test state-of-the-art facial recognition software and equipment.



Visualization – facial recognition software

These technologies will be applied at our airports and transit hubs, including Penn-Farley – ultimately becoming one system-wide plan.

Sensors and cameras will be installed at structurally sensitive points on bridges and tunnels.

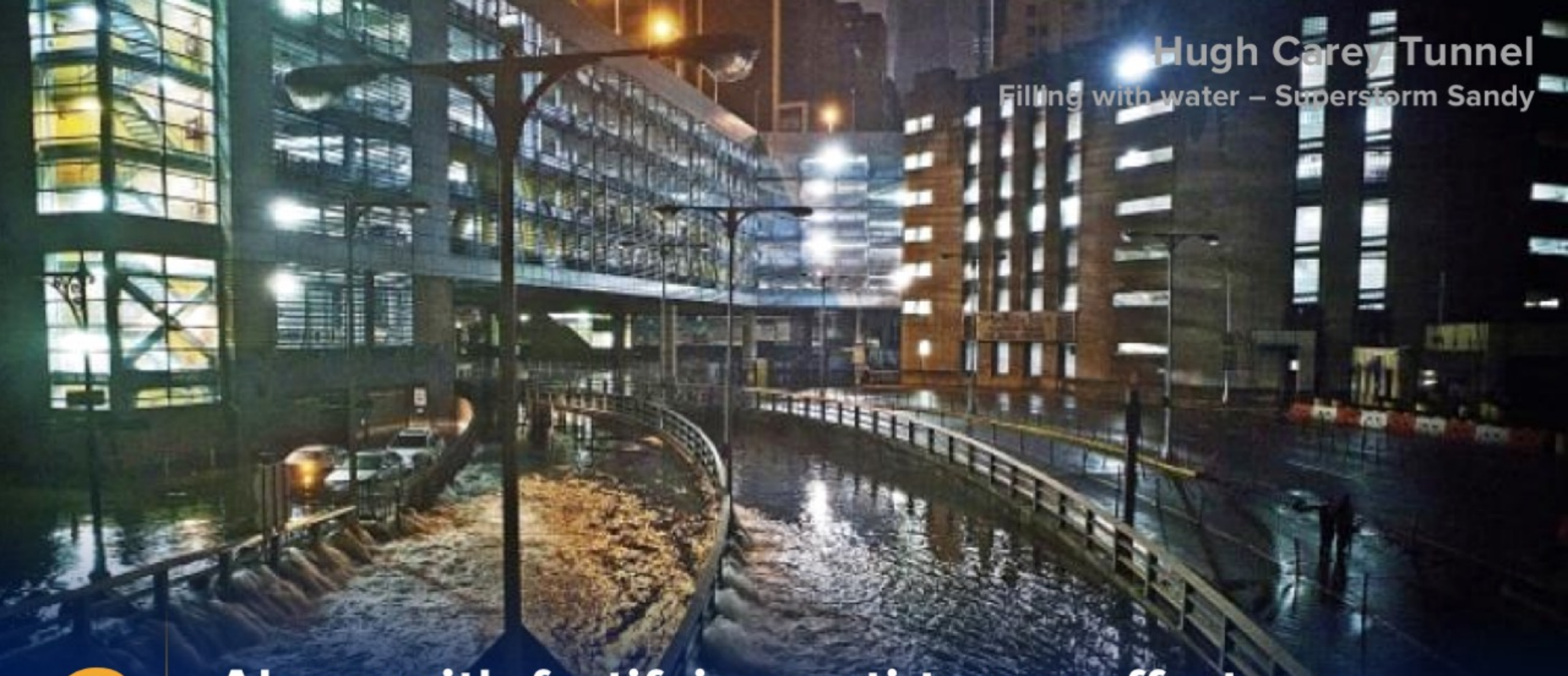
We will combine anti-terrorism teams with traffic enforcement at our crossings while developing new operating protocols across agencies.

New Equipment + New Personnel

- 525 TBTA officers will provide security and traffic management at bridges and tunnels and collaborate with State Police on toll enforcement.
- 150 members of State Police Troop NYC will be assigned to crossings to handle security and anti-terror activities.
- 150 National Guardsmen will reinforce troopers on security and anti-terror initiatives.

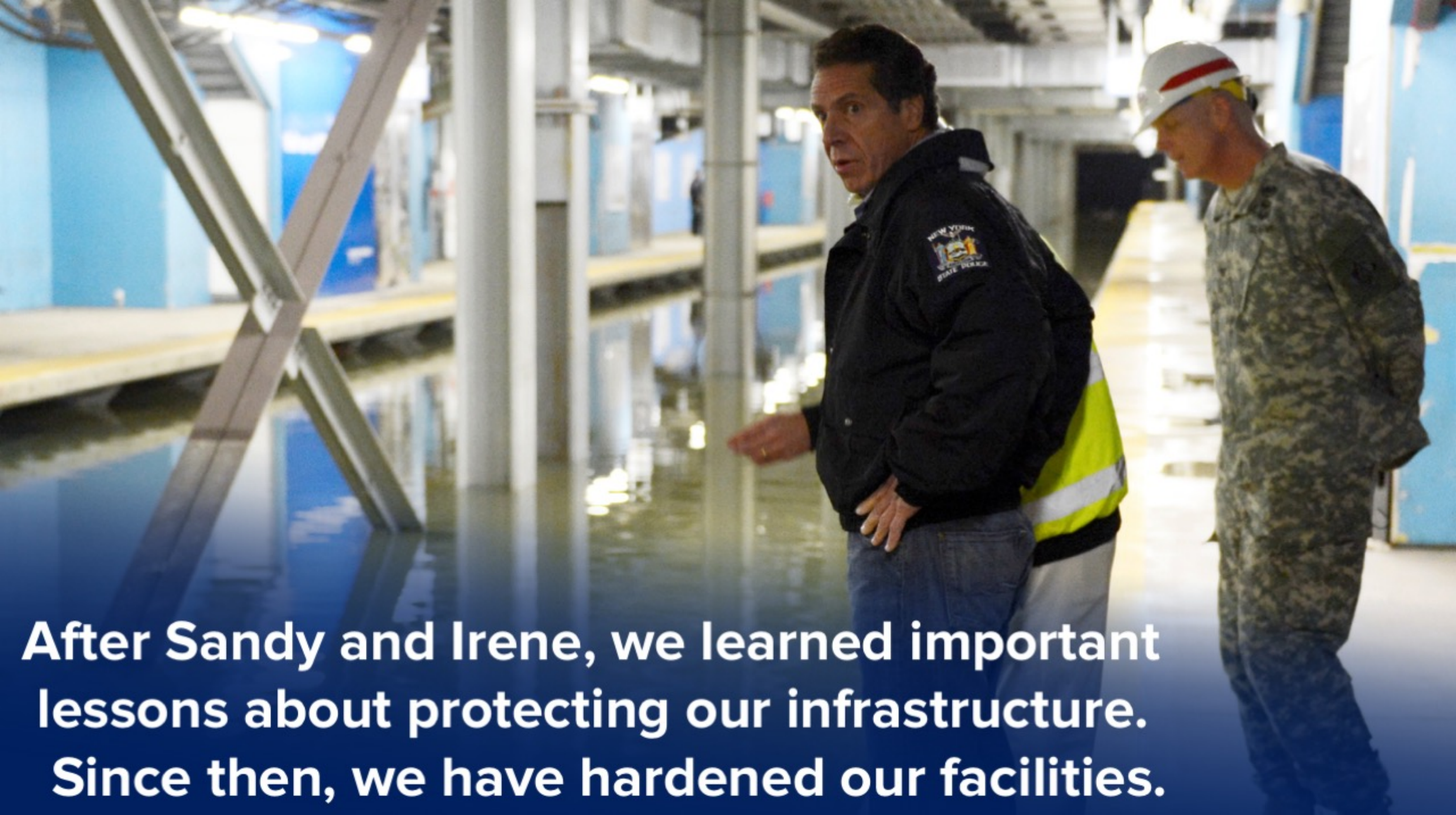
Law enforcement will be staged at **both ends of the tunnel or bridge** – and prepared to intercept the suspect or toll evader or scofflaw.

We are also positioning special barricade trucks at both sides of each crossing to serve as intercept vehicles and mobile barriers in the event of an emergency.



Hugh Carey Tunnel
Filling with water – Superstorm Sandy

3 Along with fortifying anti-terror efforts, we must ensure our region is prepared to confront devastating impacts from Mother Nature.



After Sandy and Irene, we learned important lessons about protecting our infrastructure. Since then, we have hardened our facilities.

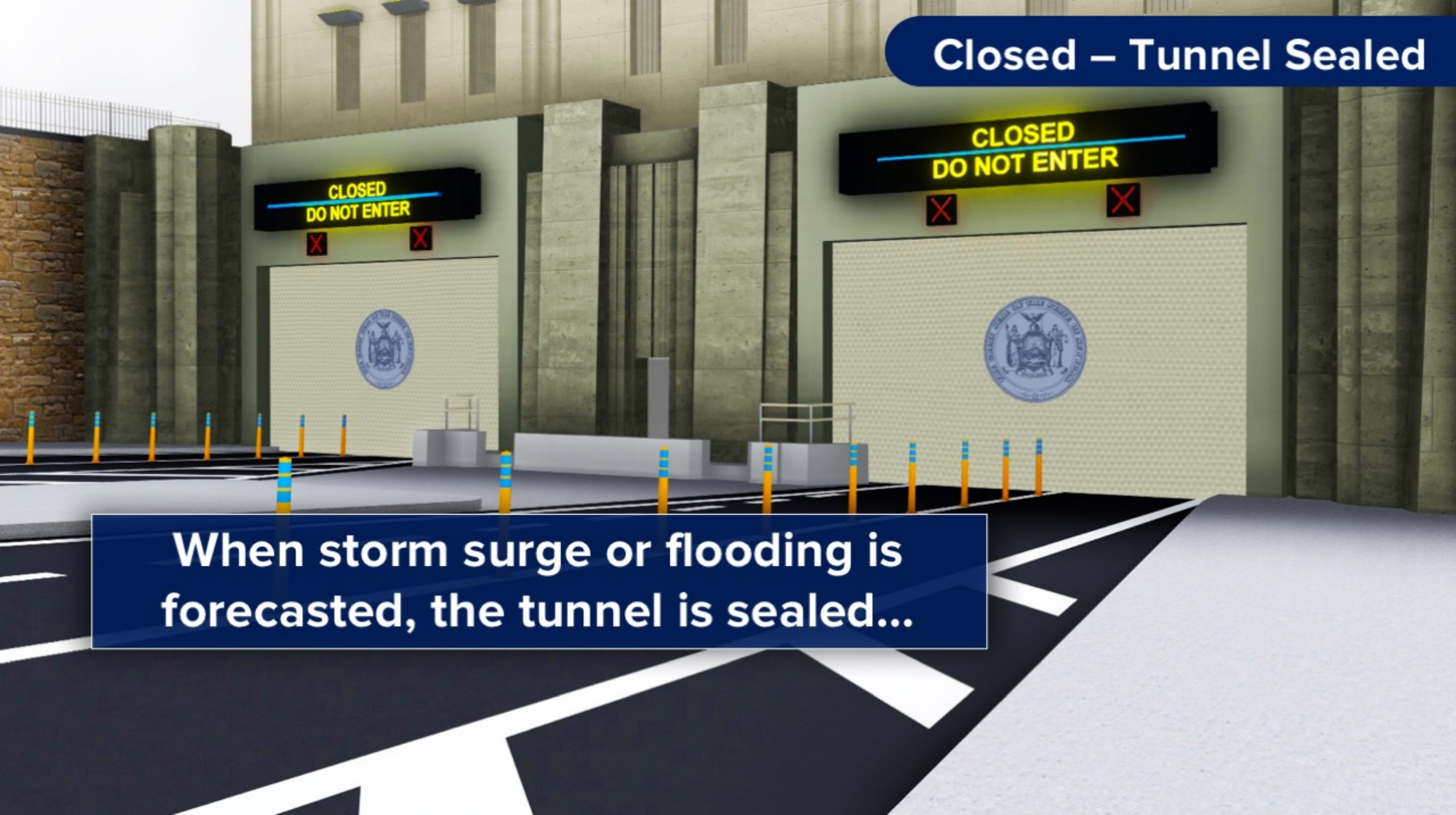
Up until now, we built our assets to protect against a 100-year flood. That was clearly not enough.

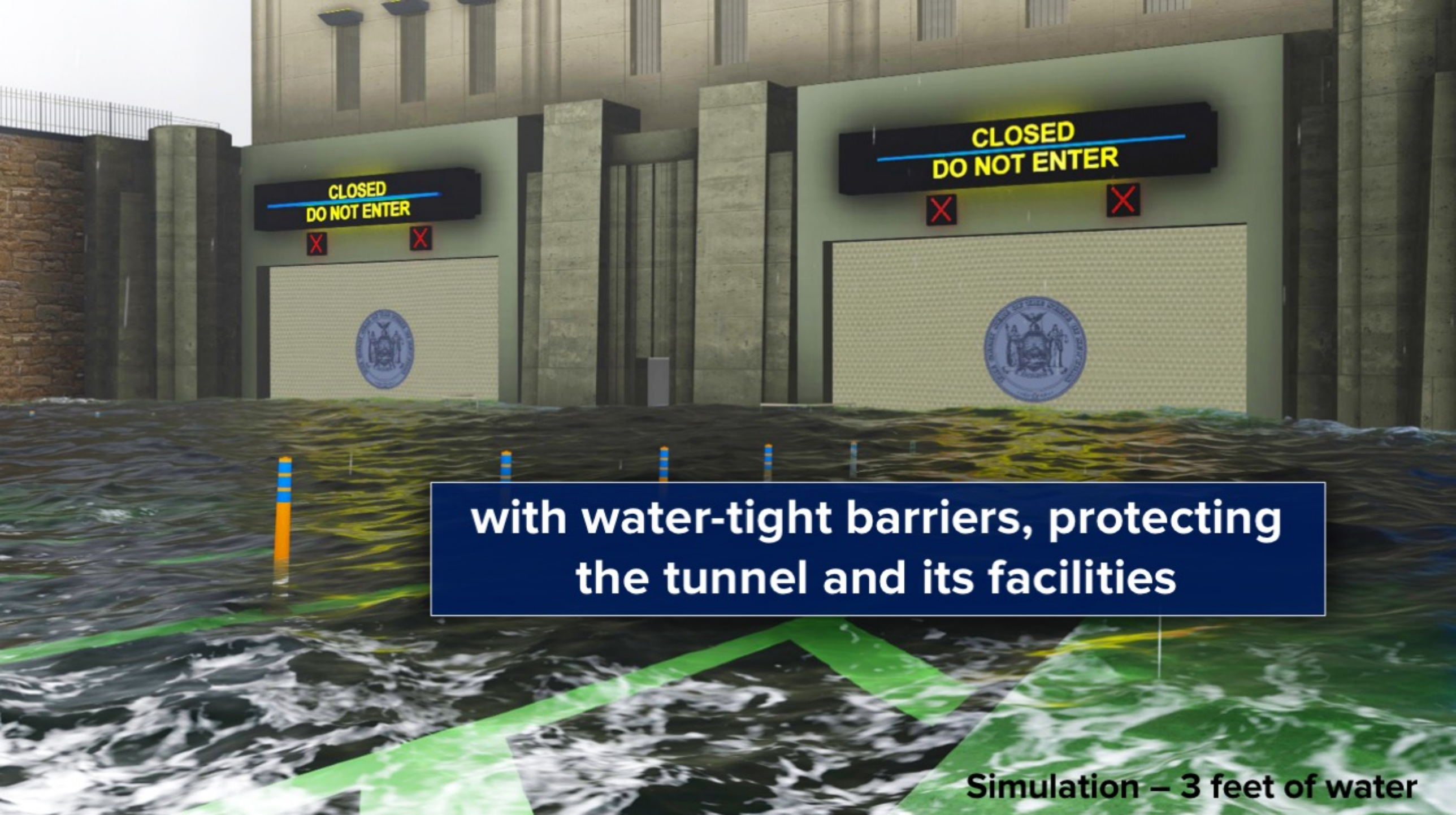
We will now enhance our

protections to withstand a 500-year flood...

AT OUR TUNNELS

We are installing barriers to block flood water from entering and increasing our submersible pumping capacity.


Closed – Tunnel Sealed
CLOSED
DO NOT ENTER
CLOSED
DO NOT ENTER
When storm surge or flooding is forecasted, the tunnel is sealed...


CLOSED
DO NOT ENTER
CLOSED
DO NOT ENTER
with water-tight barriers, protecting
the tunnel and its facilities
Simulation – 3 feet of water

Many of MTA's bridges were designed more than a half-century ago without taking into account seismic hazards.

ON OUR BRIDGES

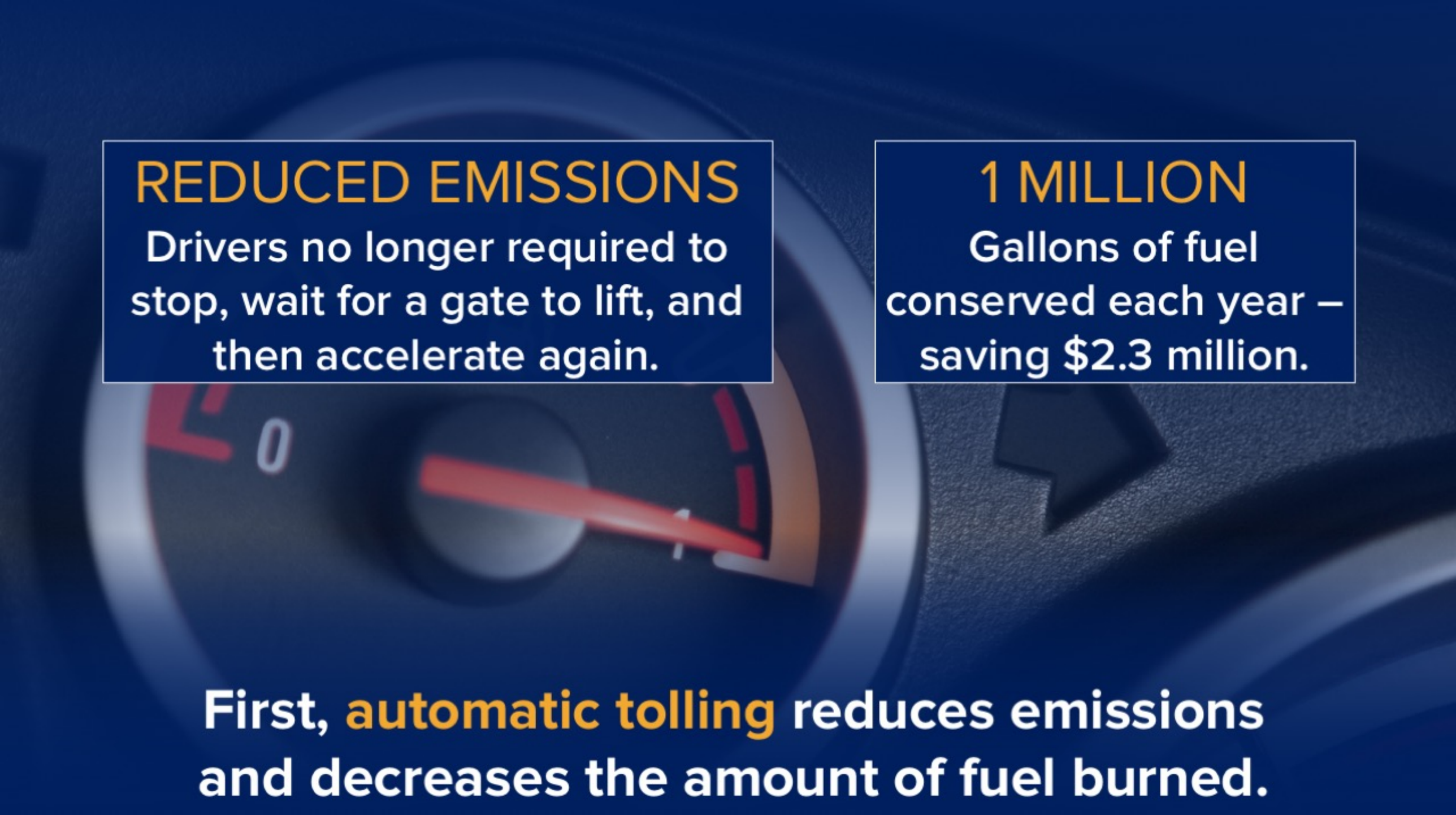
To make MTA bridges more flexible in the devastating event of an earthquake – thus limiting damage – we are launching a comprehensive seismic upgrade plan.

First, we are replacing all existing bridge bearings with “seismic isolation bearings” that allow for rotation, thereby reducing the transfer of seismic forces and mitigating damage.

Second, we are adding reinforcement to bridge columns and piers to provide greater resistance to seismic forces.

Lastly, to provide long-term protections beyond seismic events, we are installing concrete armor units around the underwater portion of bridge piers.

4 While we deploy all of these measures, the MTA is committed to promoting environmental conservation wherever possible.

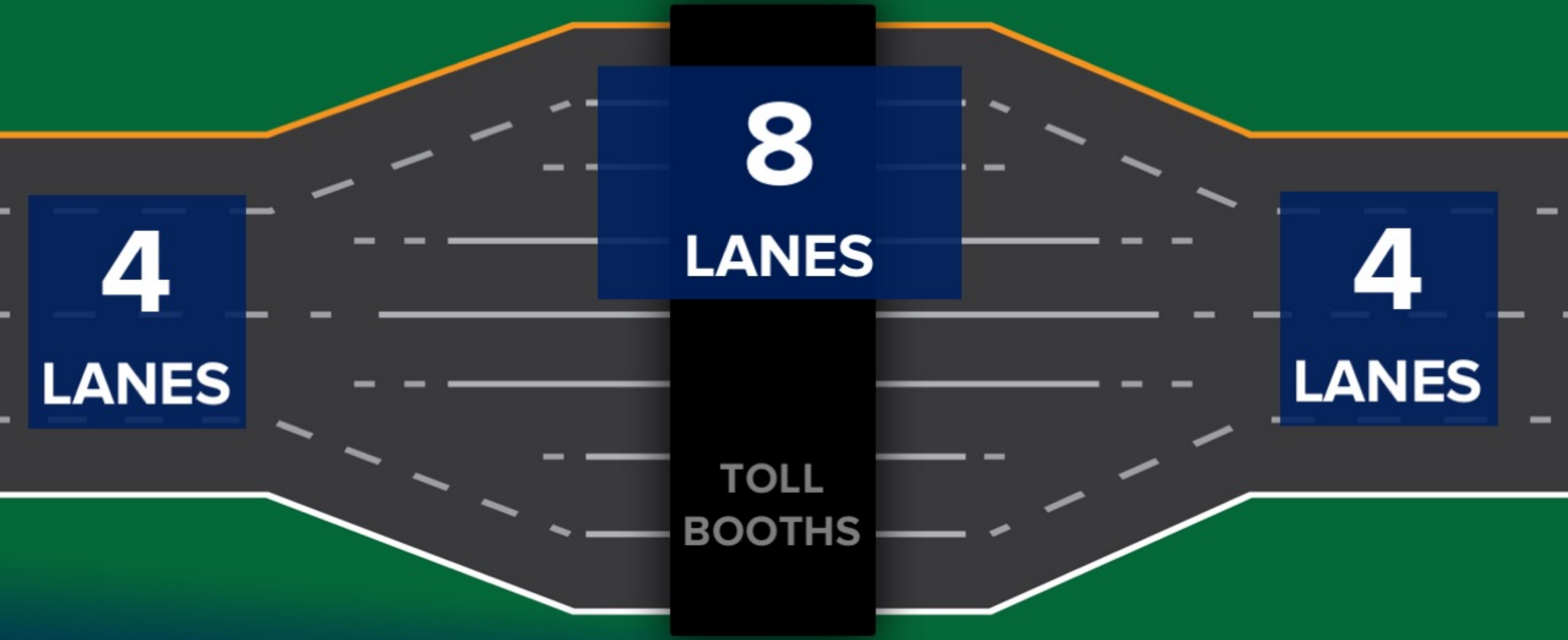

REDUCED EMISSIONS
Drivers no longer required to stop, wait for a gate to lift, and then accelerate again.
1 MILLION
Gallons of fuel conserved each year – saving $2.3 million.
First, automatic tolling reduces emissions and decreases the amount of fuel burned.

We are also adopting widescale use of LED lighting on all MTA bridges and tunnels.

- LEDs use 40% to 80% less power than other types of roadway lighting and last 6x longer.


The New York Power Authority will
begin LED installation this January.

Implementation Steps



First, removal of the toll booths will

require a reconfiguration of the toll plazas...

Next, we must add gantries to
suspend automatic tolling equipment.


Henry Hudson Parkway Gantry

We have additional security personnel and equipment that need to be strategically placed.

We must redesign and upgrade our tunnel and bridge plazas to meet these new needs.

And lastly, we are testing
new video message boards
with real-time communication to drivers.

New York Crossings - Schedule

Automatic Tolling & LED Lighting	Automatic tolling begins on both MTA tunnels in January; all bridges by end of next year. LED lighting begins in January.
Security Components	State Police, National Guard and barricade vehicles deployed in January.
Resiliency - Tunnel Barriers	Installed on both tunnels by end of next year.
Seismic Measures	Currently underway.

New York Crossings – Cost Breakdown

Automatic Tolling & LED Lighting	$500 million Capital Budget
Security Measures	$37 million annually
Resiliency - Tunnel Barriers	$100 million State and Federal Storm Recovery Funds
Seismic Measures	Ongoing structural rehabilitation – included in Capital Plan

This is not a proposal – funding is secured and implementation is underway.

5

When we were more ambitious and more confident, our goal was to build projects that were not only practical, but public art.

Look at the David N. Dinkins Municipal Building...

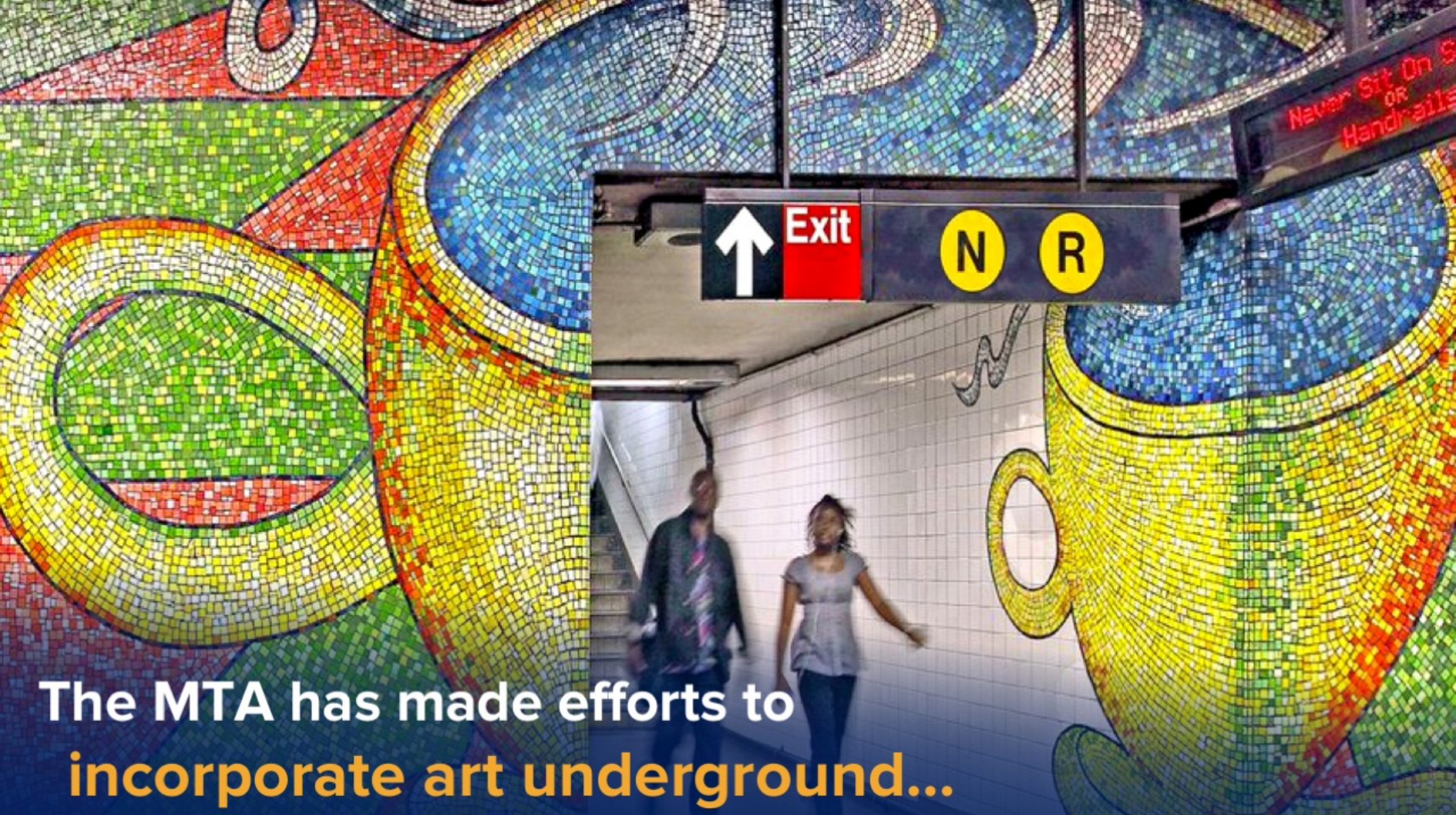

Our magnificent
New York State Capitol...


The original
Penn Station...

Central Mall Mosaics

And

Jones Beach.



The MTA has made efforts to

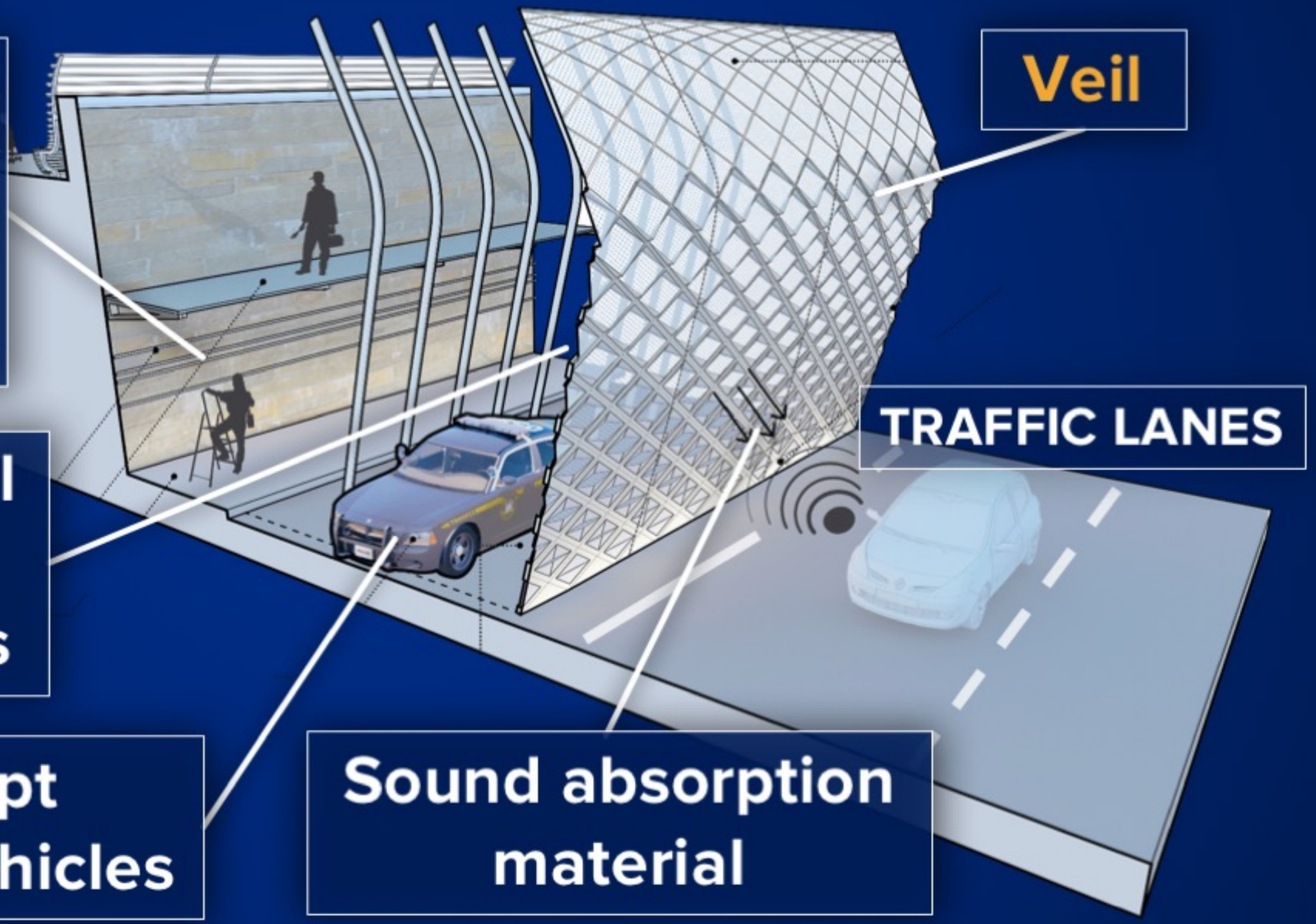
incorporate art underground...


Now it’s time to bring art aboveground.

ON OUR TUNNELS

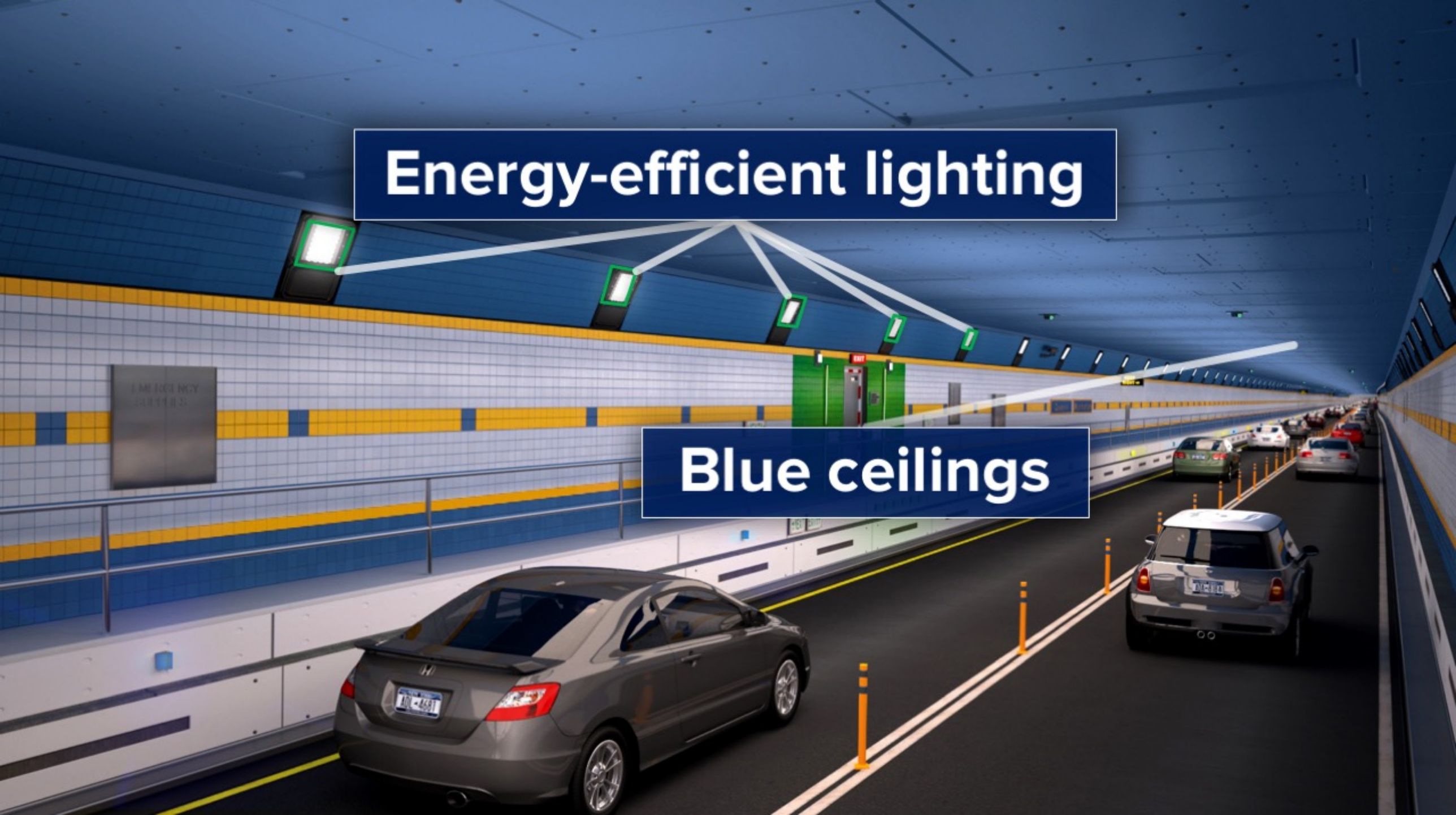
The plaza walls will have covering veils that shield security personnel and equipment, while acting as LED message boards – all in an attractive redesign.

The veil shields security equipment...



And also houses messaging boards.

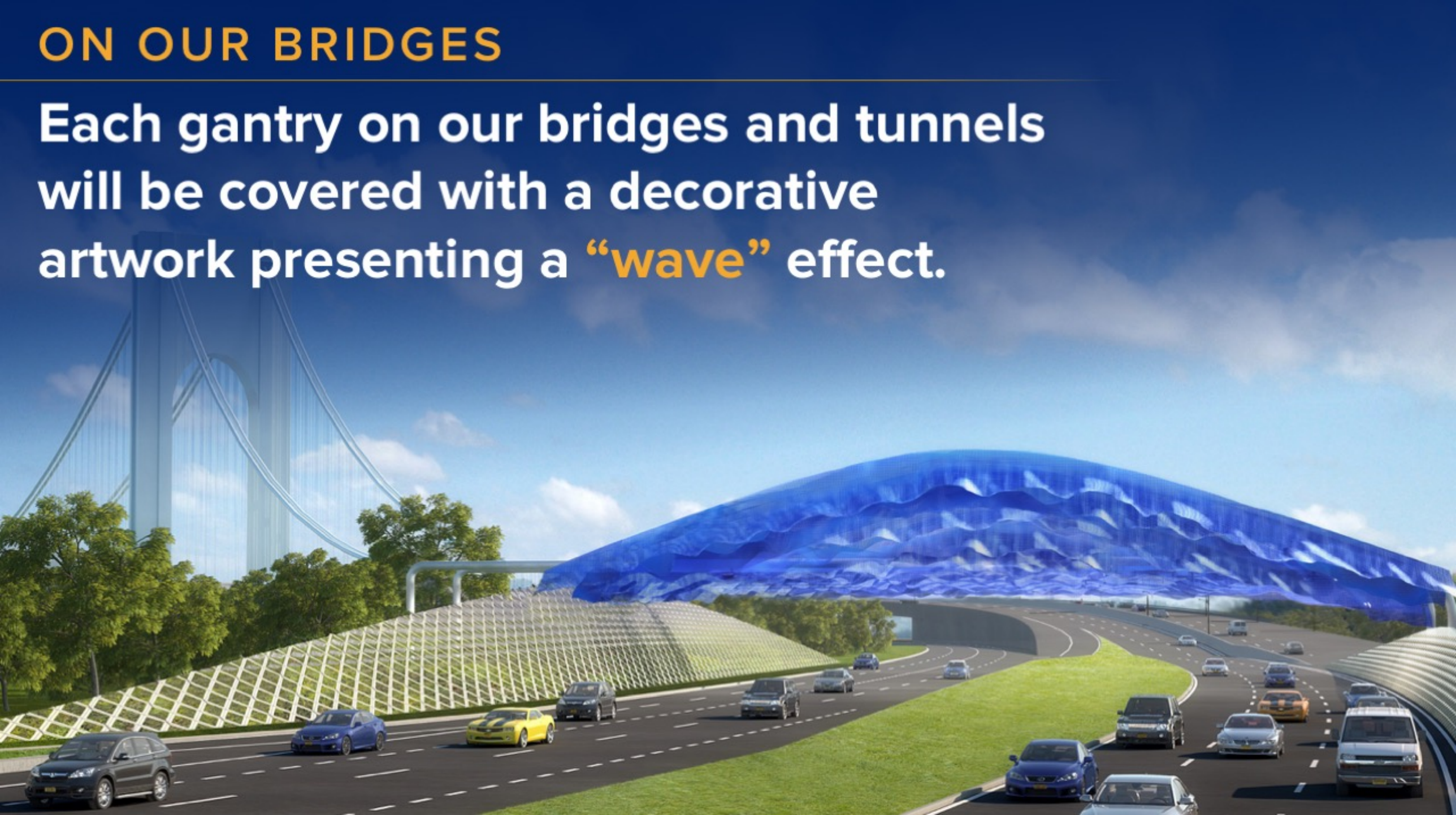

Queens Midtown Tunnel
The inside of the tunnels will
have color accents and LED lighting.


Energy-efficient lighting
Blue ceilings


Blue and gold LEDs

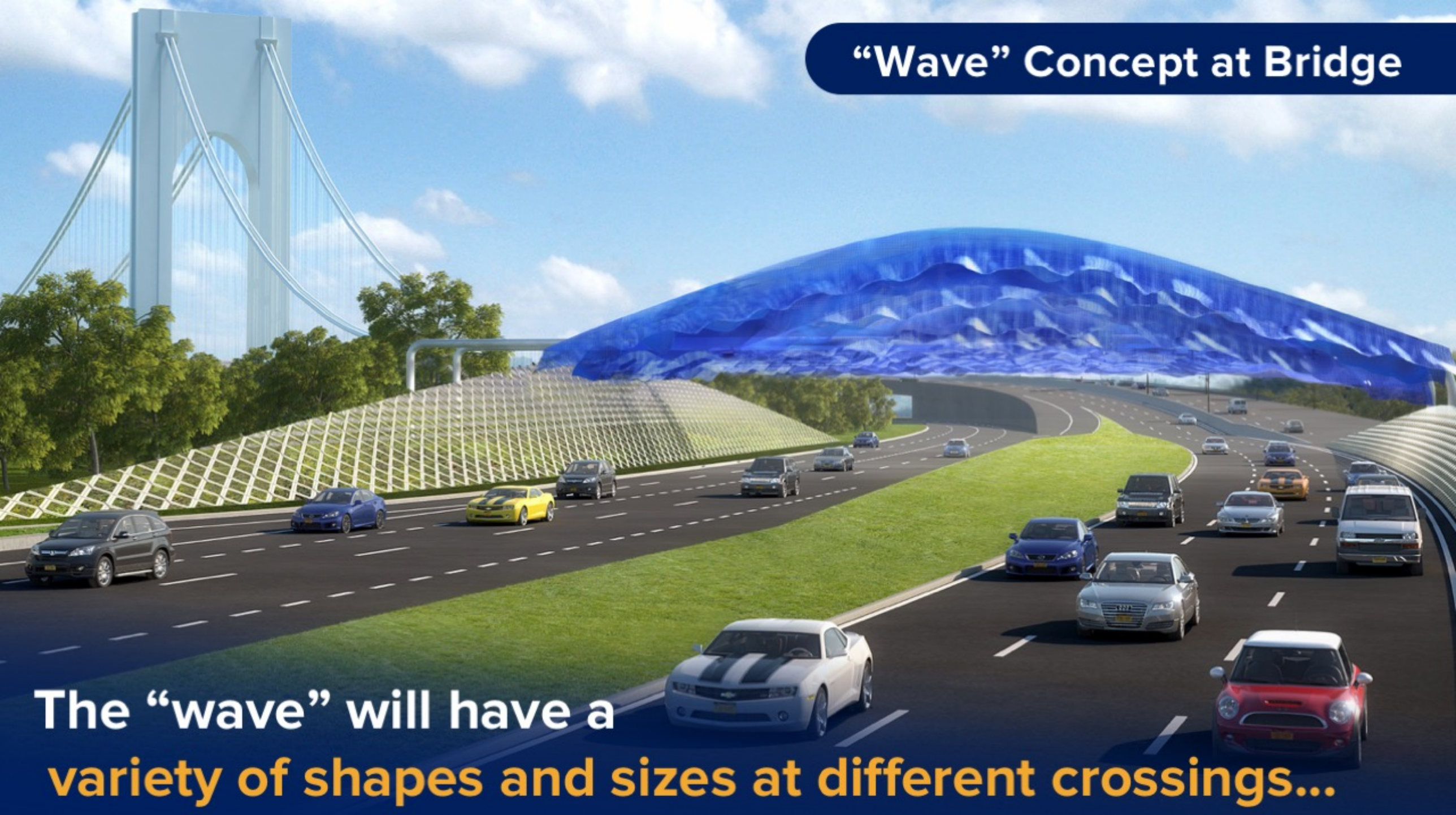
ON OUR BRIDGES

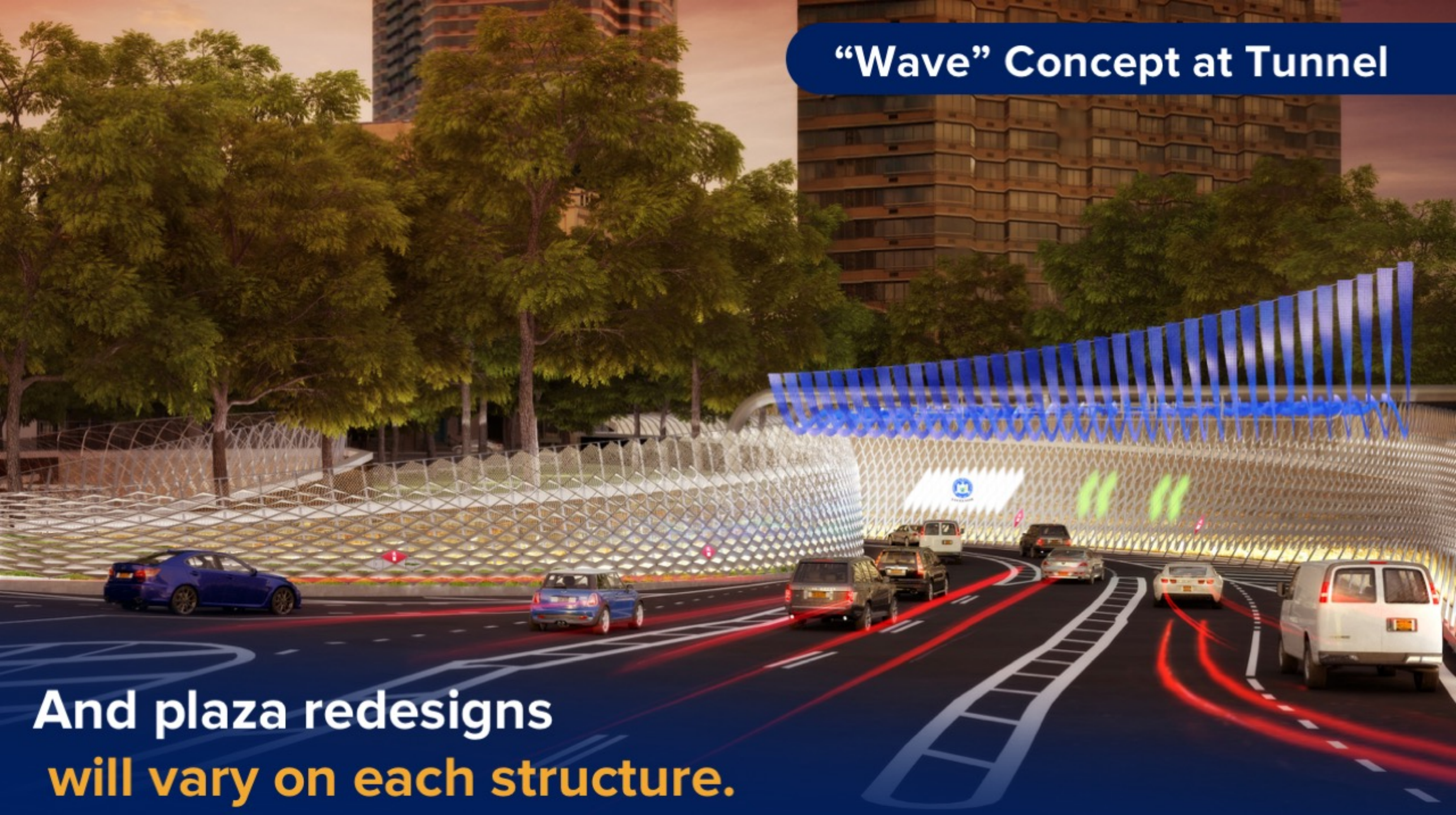
Each gantry on our bridges and tunnels will be covered with a decorative artwork presenting a “wave” effect.

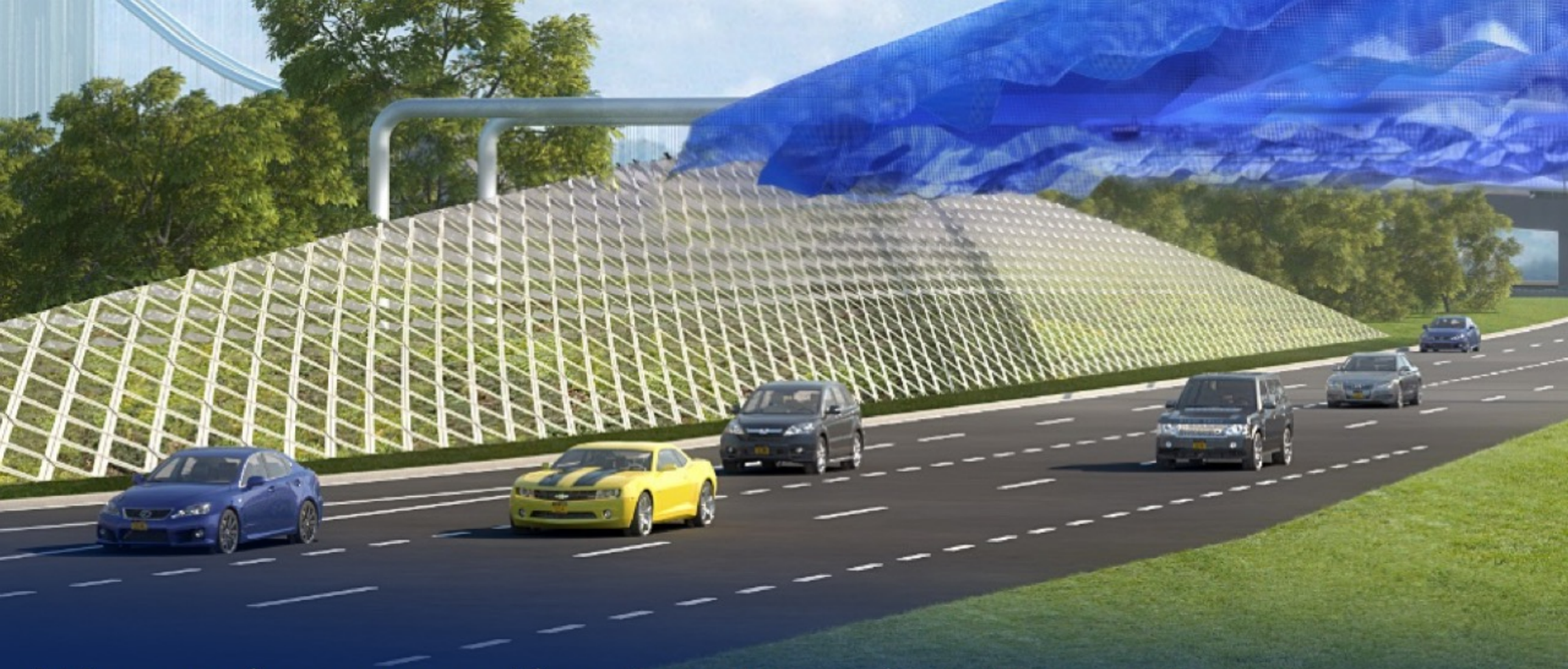



The “wave” will be constructed from
a chainmail fabric which moves with the wind...

Chainmail fabric applied to parking garage


"Wave" Concept at Bridge
The "wave" will have a
variety of shapes and sizes at different crossings...


“Wave” Concept at Tunnel
And plaza redesigns
will vary on each structure.



We are incorporating landscaping throughout, and some gantry coverings will include veil walls to protect and cover equipment and personnel.


New York is about
imagination,
creativity,
and the arts.


We are implementing the
world's most dynamic use of
digitally-controlled LED lighting...

In addition to costing less to operate and lasting significantly longer, LED lights can be programmed into different colors and patterns.

In recent years, governments across the globe have begun lighting single bridges or buildings with LEDs...

Buffalo/Canada – Peace Bridge

Ben Franklin Bridge - Philadelphia

Zakim Bunker Hill Memorial Bridge - Boston

Tower Bridge – London

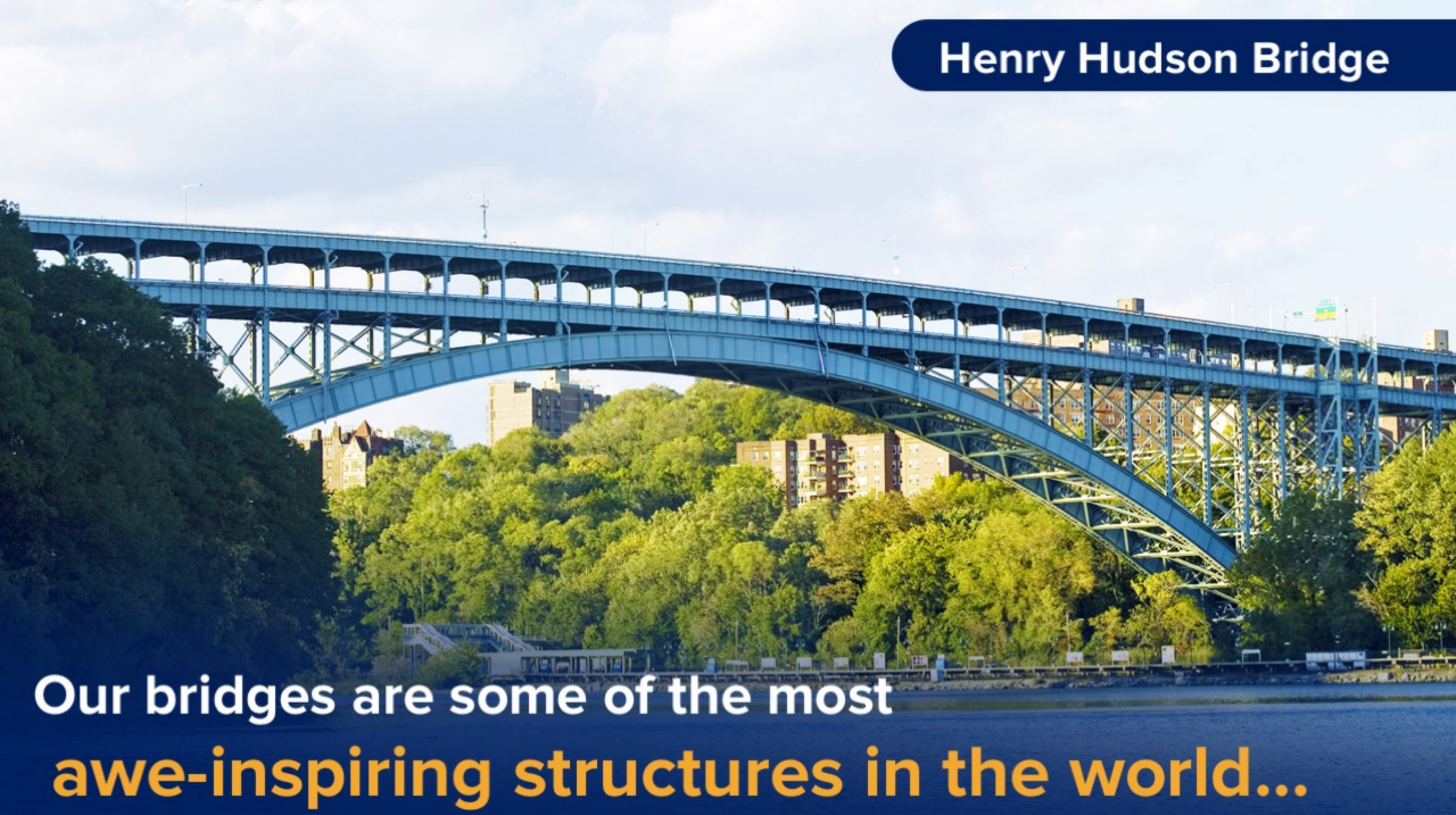
The City of London is in the
midst of a project to illuminate a
series of bridges over the Thames River.

Applications of these lights have become tourist attractions in and of themselves.

San Francisco's lighting of the Bay Bridge generates $100 million in economic activity from increased tourism every year.

Photo: Lucas Saugen
Source: >20 independent analyses


But we are
New York...


Henry Hudson Bridge
Our bridges are some of the most
awe-inspiring structures in the world...


If we illuminate our crossings,
they can be breathtaking
and an international tourist attraction.

Our theme will be

“The City That Never Sleeps.”

A dusk to dawn lighting cycle.


Imagine the possibilities...

Spectacular, multi-color light shows

will be visible for miles.


We will add the Port Authority's
George Washington Bridge.


We could also coordinate with
the Empire State Building and
Freedom Tower – New York icons.


We need to do the work –
Let’s do it right!


Let’s do it the New York way!
Let’s lead.


REIMAGINING
NEW YORK'S CROSSINGS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