



From Paris to Madrid: What Great Stations Teach Us

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- **Inmaculada Mohino, PhD**, Associate Professor, Universidad Politécnica de Madrid
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Moderator: **Eric Eidlin**, Station Planning Manager, City of San Jose
Adjunct Faculty, SJSU Mineta Transportation Institute

September 4, 2025 | 9:00-10:00 a.m. (PT)

SJSU SAN JOSÉ STATE
UNIVERSITY



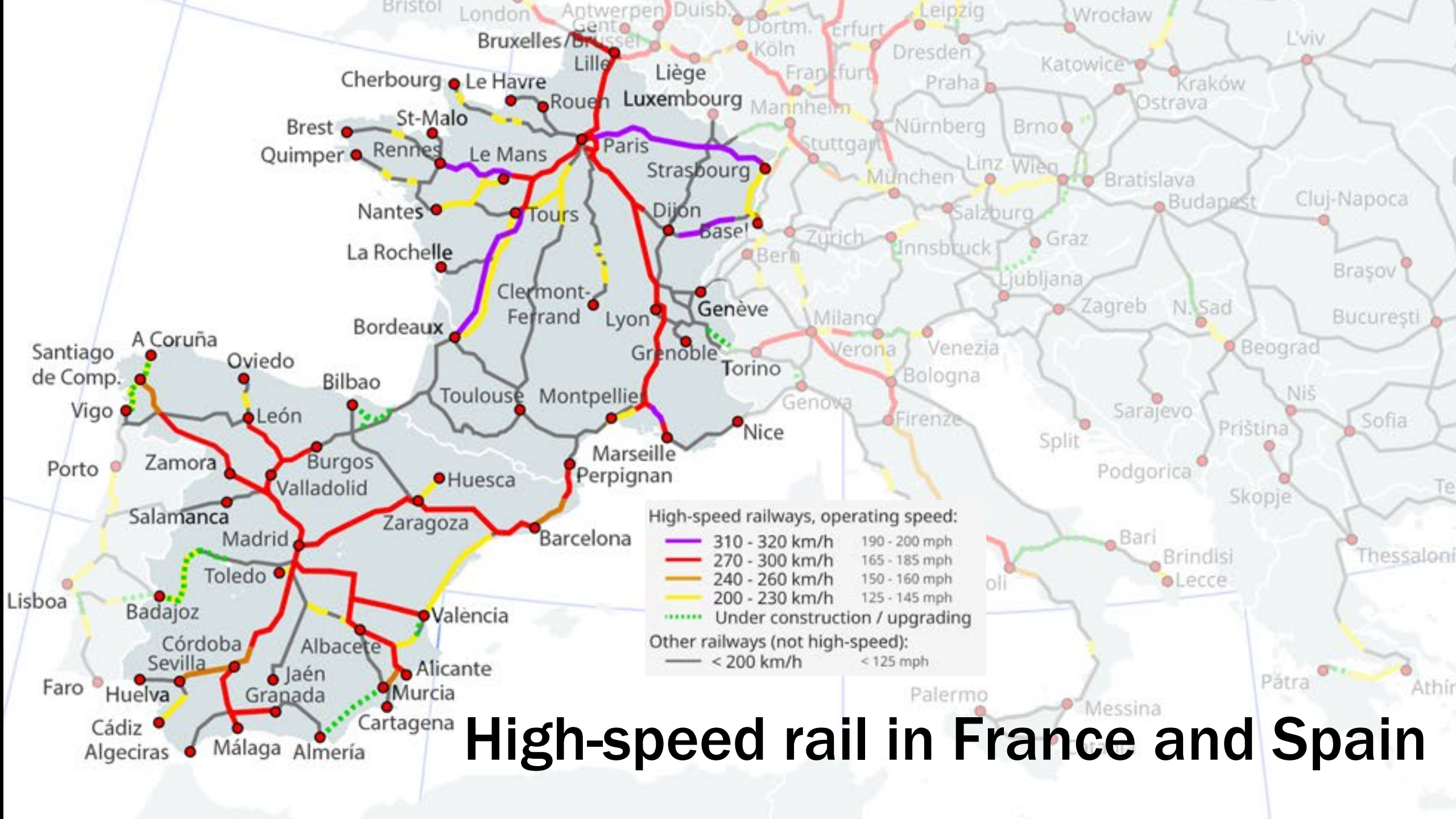


Today's Journey

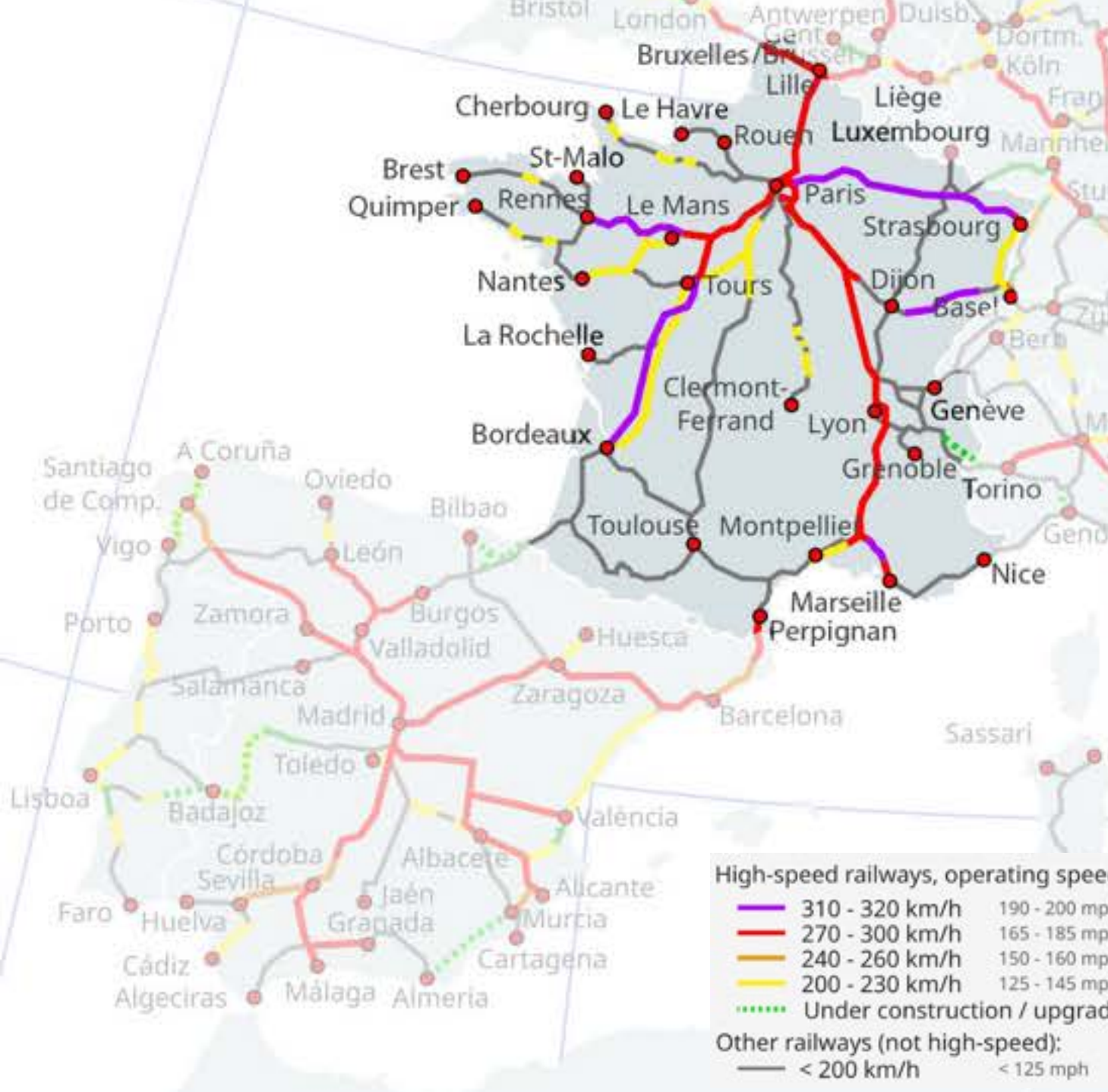
- Basic info about study trip, France and Spain
- Lessons Learned:
 - Advantages of high-speed rail as a mode of travel
 - Mobility
 - Stations
 - Futureproofing
 - Organizational questions
 - Public engagement
 - Project delivery
 - Economic effects
- Questions for next year's trip!

- **2 countries**
- **6 cities**
- **13 days**
- **Approx 1,700 miles of high-speed train travel**





High-speed rail in France and Spain

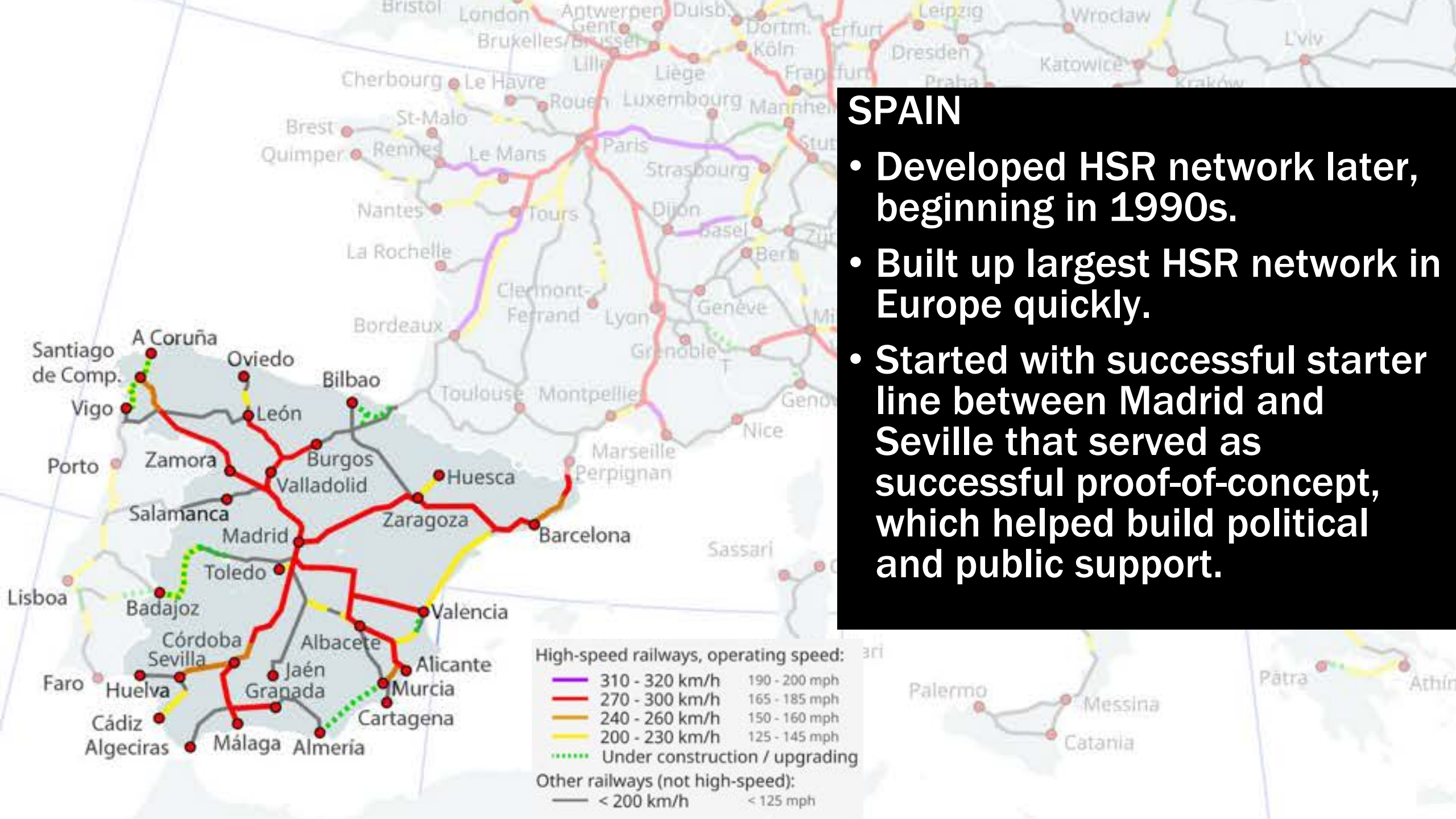


FRANCE

- First country in Europe to develop HSR with service beginning in early 1980s.
- System prioritizes fast travel times between Paris and other major urban centers in France.
- System as a whole is heavily used. Paris-Lyon corridor is busiest in Europe.

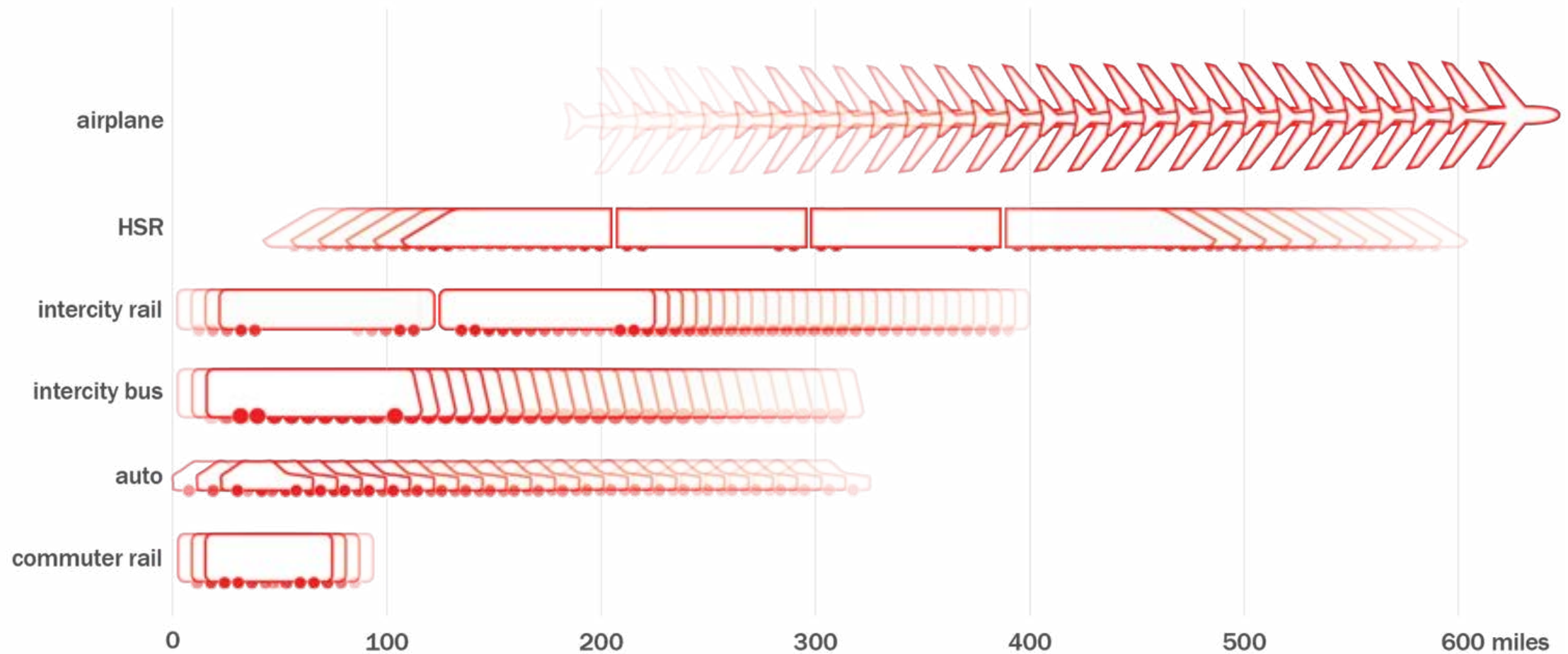
SPAIN

- Developed HSR network later, beginning in 1990s.
- Built up largest HSR network in Europe quickly.
- Started with successful starter line between Madrid and Seville that served as successful proof-of-concept, which helped build political and public support.



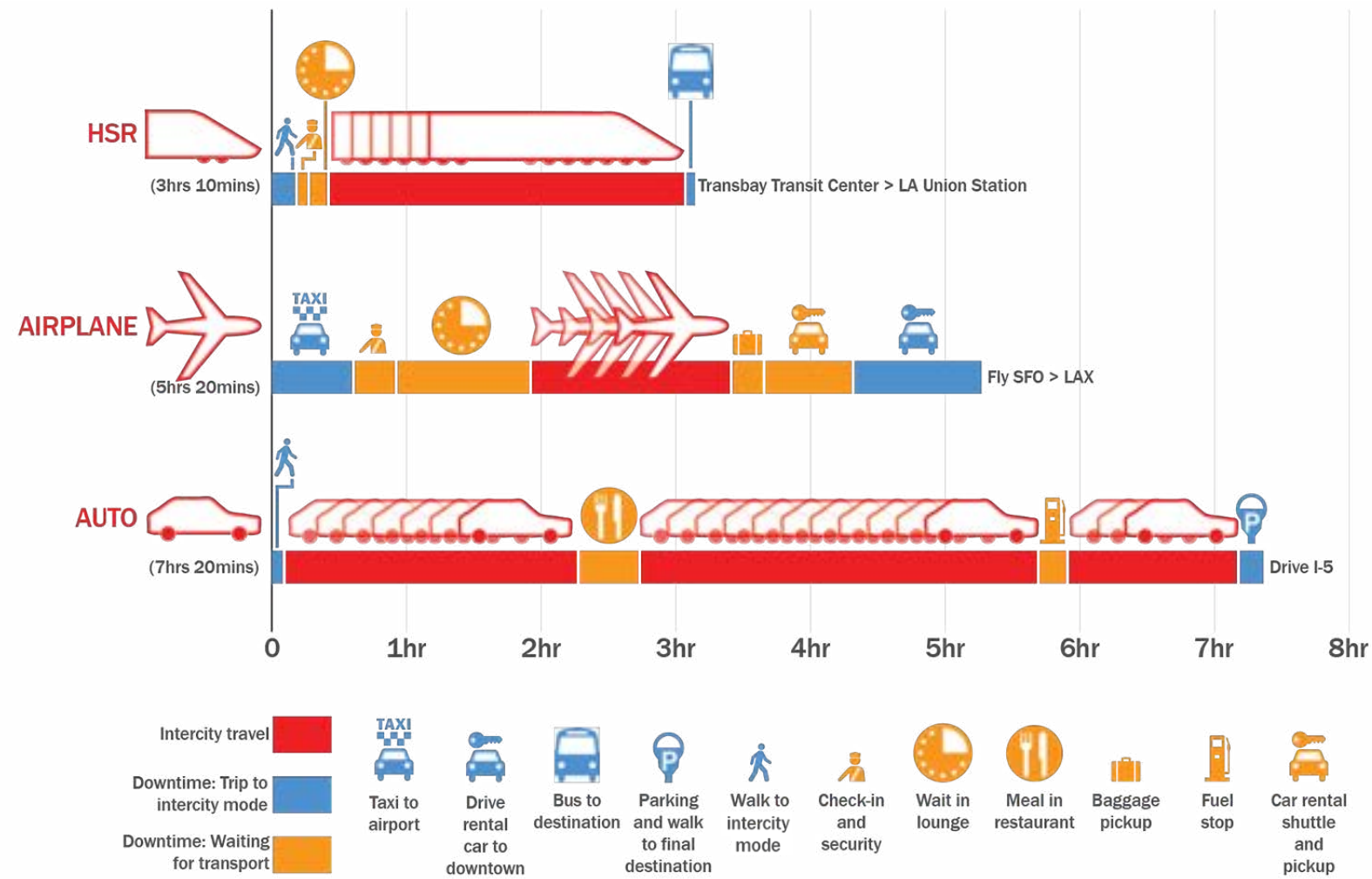
1. High-speed rail is a superior mode of travel for many trips and for many reasons.

Optimal Distance Ranges of Intercity Travel Modes



HSR Advantage: Central City to Central City Travel

Trip from downtown San Francisco to Downtown Los Angeles*



*Projected travel time from San Francisco Ferry Building to Los Angeles Grand Central Market. Graphic by Eric Eidlin, adapted from Brian Stokle



Leah Greenblat



Eric Eidlin

A more comfortable way to travel

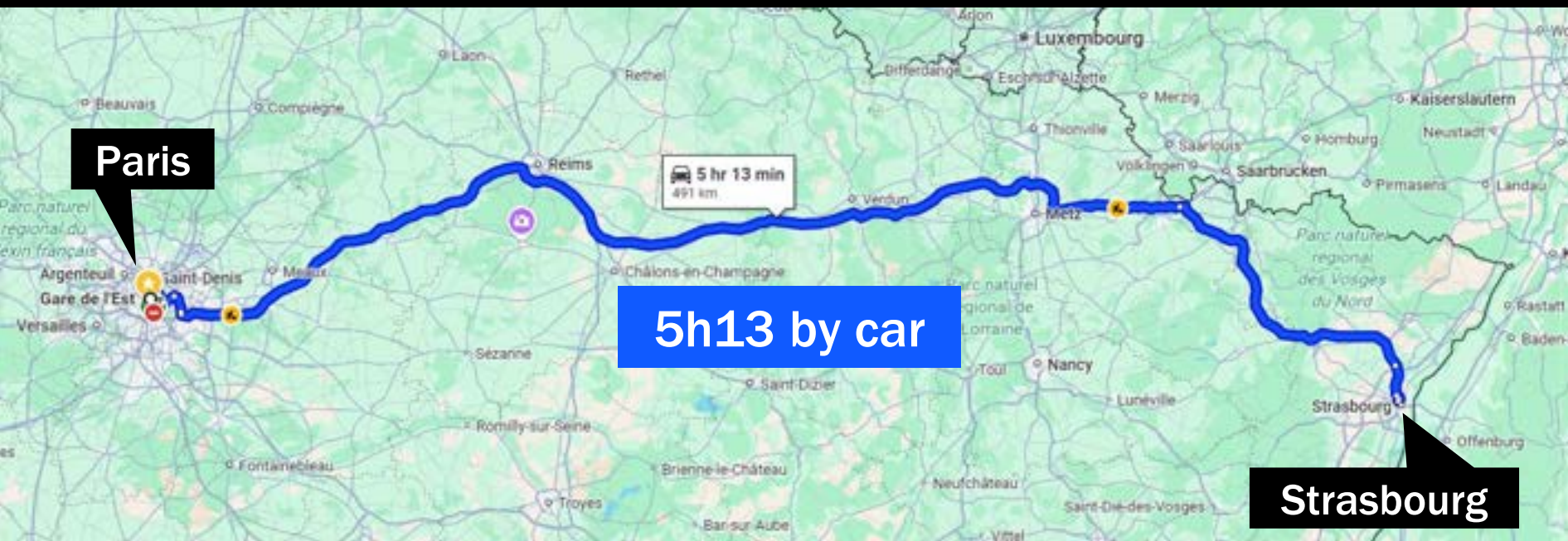


Paris <> Strasbourg = 304 miles by car

**Approximately the
same distance as**

Boston <> Philadelphia

Gilroy <> Los Angeles



**TGV-East is among
fastest high-speed lines
in Europe with trains
cruising at 190-200mph**

9:25am

10:25am

12:11pm

1:00-2:30pm

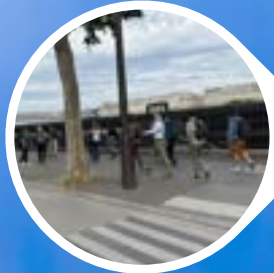
2:30pm

4-6pm

4:15-6pm

6:39-8:11pm

9pm on



Walk to
Paris
East
Station

Train
departs
Paris East
Station

Train arrives
Strasbourg
Main
Station
Station tour

Tour old town
on foot

Traditional
Alsatian
lunch

COOP
District tour

Return to
Strasbourg
Main
Station

Return train
to Paris East
Station

Dinner,
watch Paris
St. Germain
defeat Inter
Milan



David Iliff

Strasbourg

Spent several hours visiting
historic downtown core



**Also made site visit to
the COOP neighborhood
along the German
border accessible by
one of the city's famous
streetcars**



Strasbourg



Barcelona <> Madrid = 382 miles by car

Approximately the
same distance as

SF <> LA

NYC <> Buffalo



8:20am

9:03am

11:03am

1:00pm

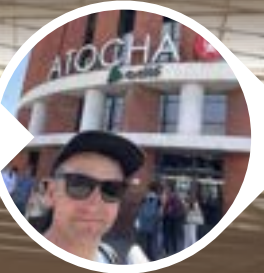
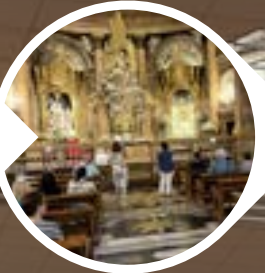
2:30pm

4-6pm

5:45-7:15pm

7:15pm

9pm on



Leave
hotel for
Barcelona
Sants
Station

Train
departs
Barcelona
Sants

Train arrives
Zaragoza
Delicias
Station tour

Take bus and
streetcar to
downtown

Traditional
Aragonese
lunch

Tour of Old
Zaragoza,
Cathedral

Return to
Delicias, take
HSR to
Madrid

Arrive Madrid
Atocha
Station

Casual tour
+ dinner in
center of
Madrid



Zaragoza

2. Great stations facilitate mobility across scales, from the local, to the regional, to the state, national, and even global levels.



Aldg692VX

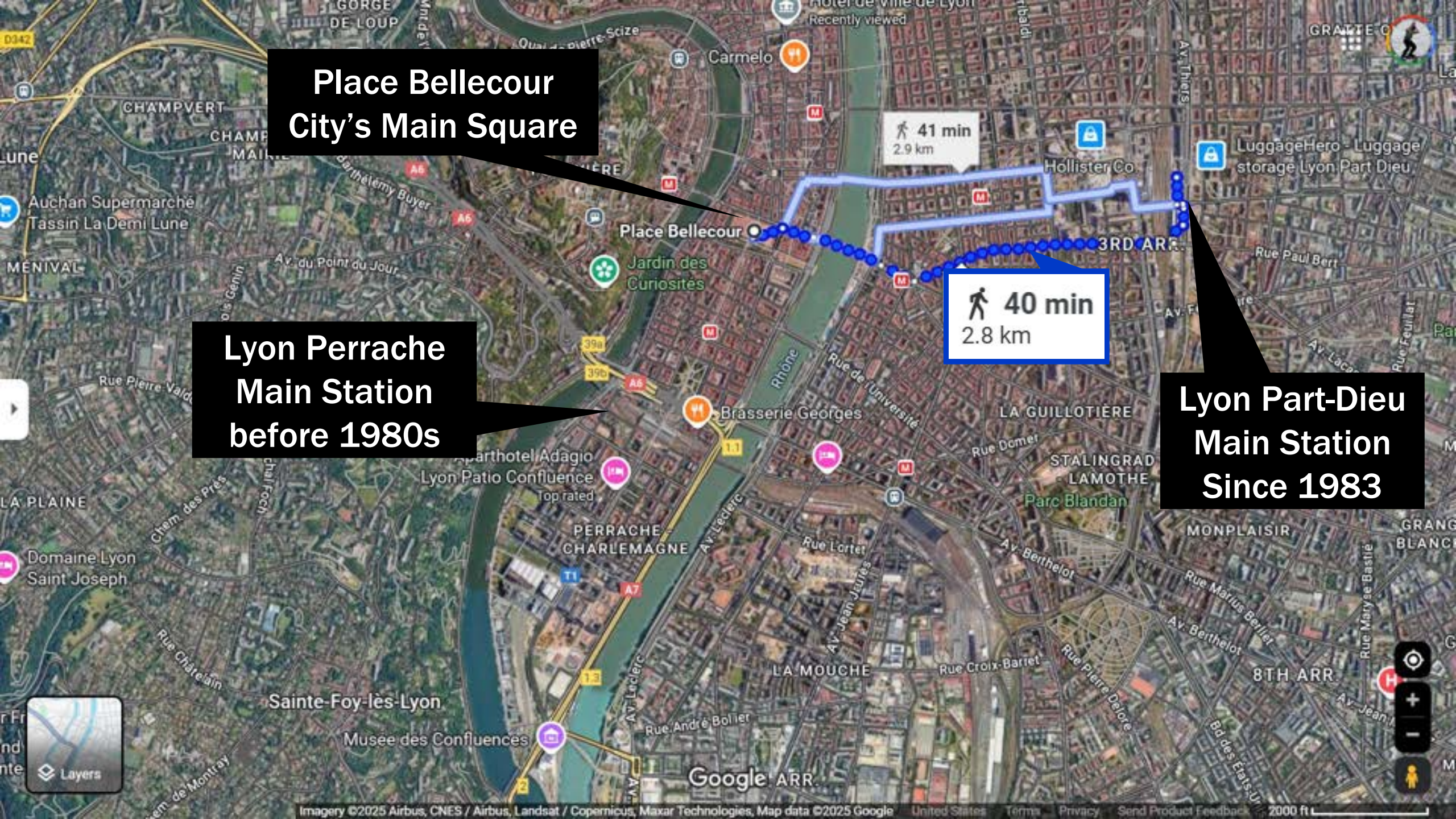
Lyon

**Place Bellecour
City's Main Square**

**Lyon Perrache
Main Station
before 1980s**

**40 min
2.8 km**

**Lyon Part-Dieu
Main Station
Since 1983**



Lyon Part-Dieu Station and surrounding district as originally laid out. As shown in these photos, primary pedestrian circulation routes were one level above the surrounding street level. District included what was the largest central city shopping mall when it first opened.



An aerial photograph of the Lyon Part-Dieu 2.0 station redevelopment project. The image shows a large, modern, circular station building with a glass facade and a flat roof. To the left of the station is a large, multi-story building with a brick facade. To the right of the station is a large, modern building with a glass facade. In the background, there are several railway tracks and a large parking lot. The foreground shows a busy street with cars, buses, and pedestrians. The overall scene is a mix of old and new architecture, with the station building being the central focus.

**Intercity
and HSR**

**Bike
Station**

Subway

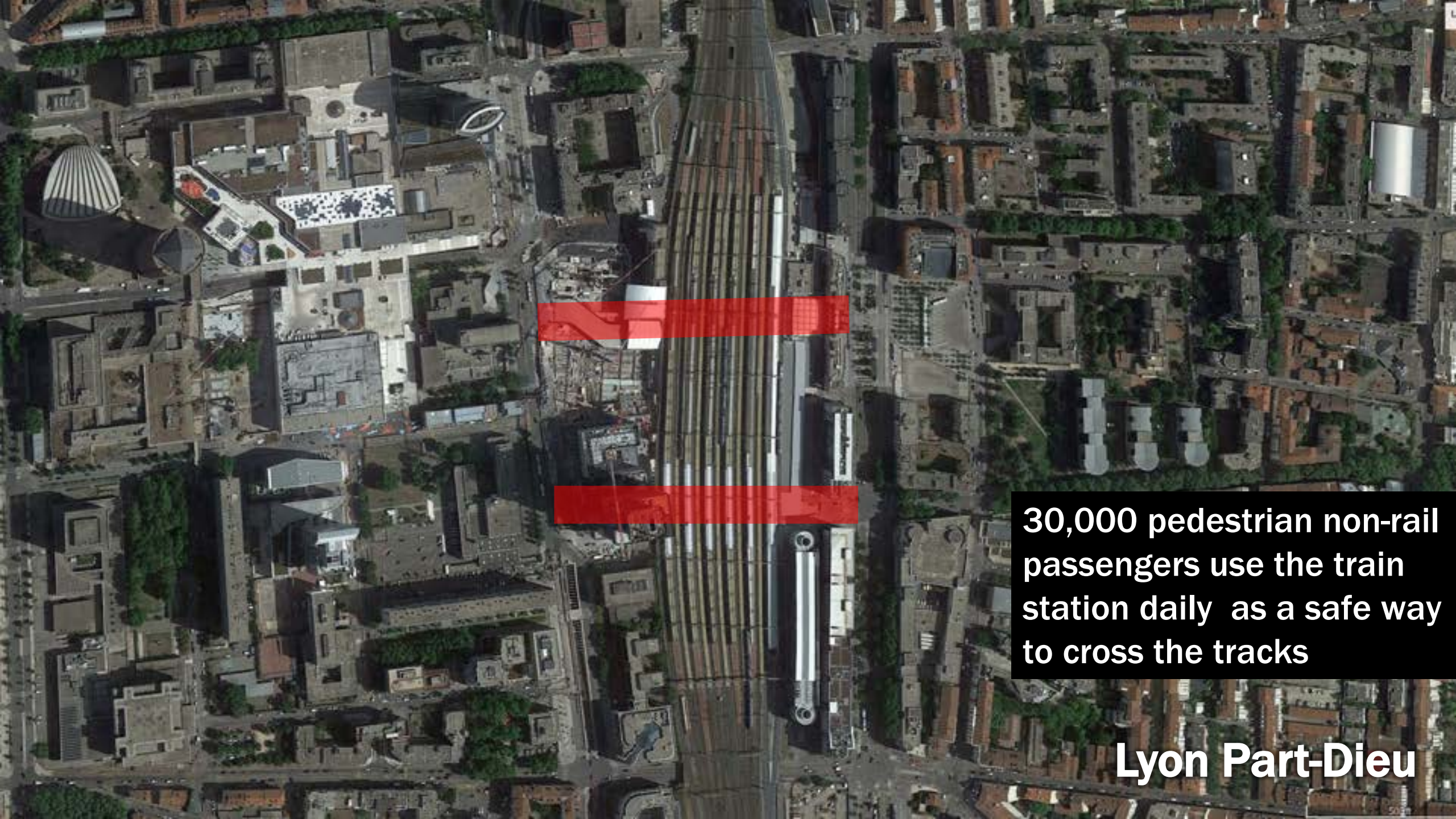
Tram/bus

**Lyon Part-Dieu
Station has been
thoroughly
redesigned to
prioritize the most
sustainable and
space-efficient
modes.**



The new station prioritizes access by sustainable and space-efficient modes (rather than by car.)

Lyon Part-Dieu 2.0



30,000 pedestrian non-rail
passengers use the train
station daily as a safe way
to cross the tracks

Lyon Part-Dieu

The Passage Pompidou enhances the station's purpose as a neighborhood connector across the tracks.

Previously a four-lane roadway, it was converted to a bike/walk connection and an inside concourse that now provides secondary access to the station.



Lyon Part-Dieu

SPL Lyon Part-Dieu



Barcelona-Sants is undergoing
a similar transformation to
Lyon Part-Dieu.



Barcelona Sants 1.0

The Barcelona-Sants transformation project will increase the ratio of pedestrian to car surface area to 85%/15% respectively.



Barcelona Sants 2.0

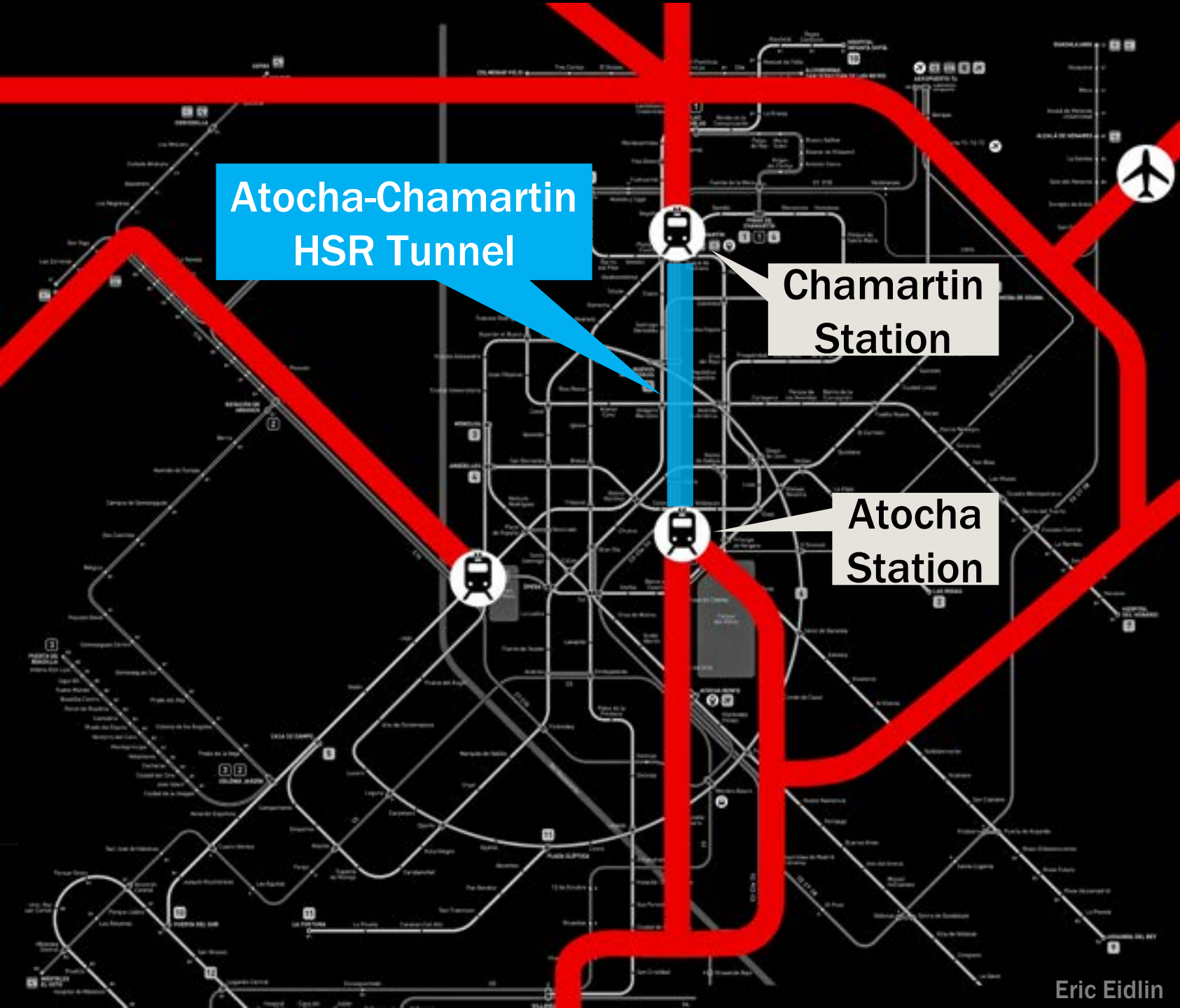
Like the Lyon-Part-Dieu project, Adif is prioritizing pedestrian access from all sides of the station with urban walkways.



Barcelona Sants 2.0

Connecting the National Rail Network in Madrid

The Atocha- Chamartin Tunnel



Station is at heart of Nuevo Norte, one of Europe's largest urban regeneration efforts. Project heals the divide caused by rail tracks.

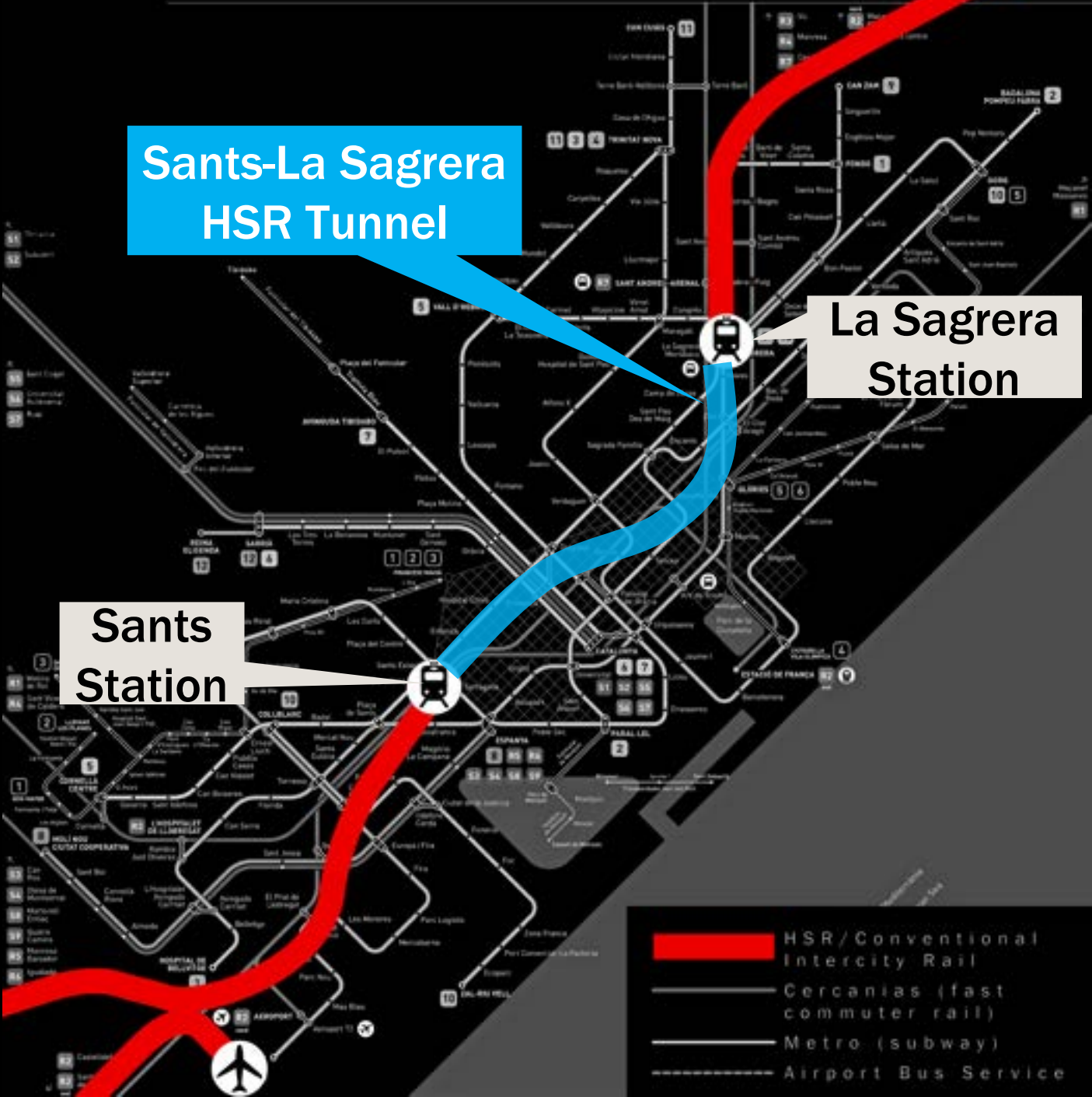
New standard gauge tracks and the tunnel connecting to Atocha make Chamartín a key interchange point for The entire Spanish high-speed network. Lines from northern Spain will connect with Those from the south and Mediterranean coast at the station.



Marid Chamartín

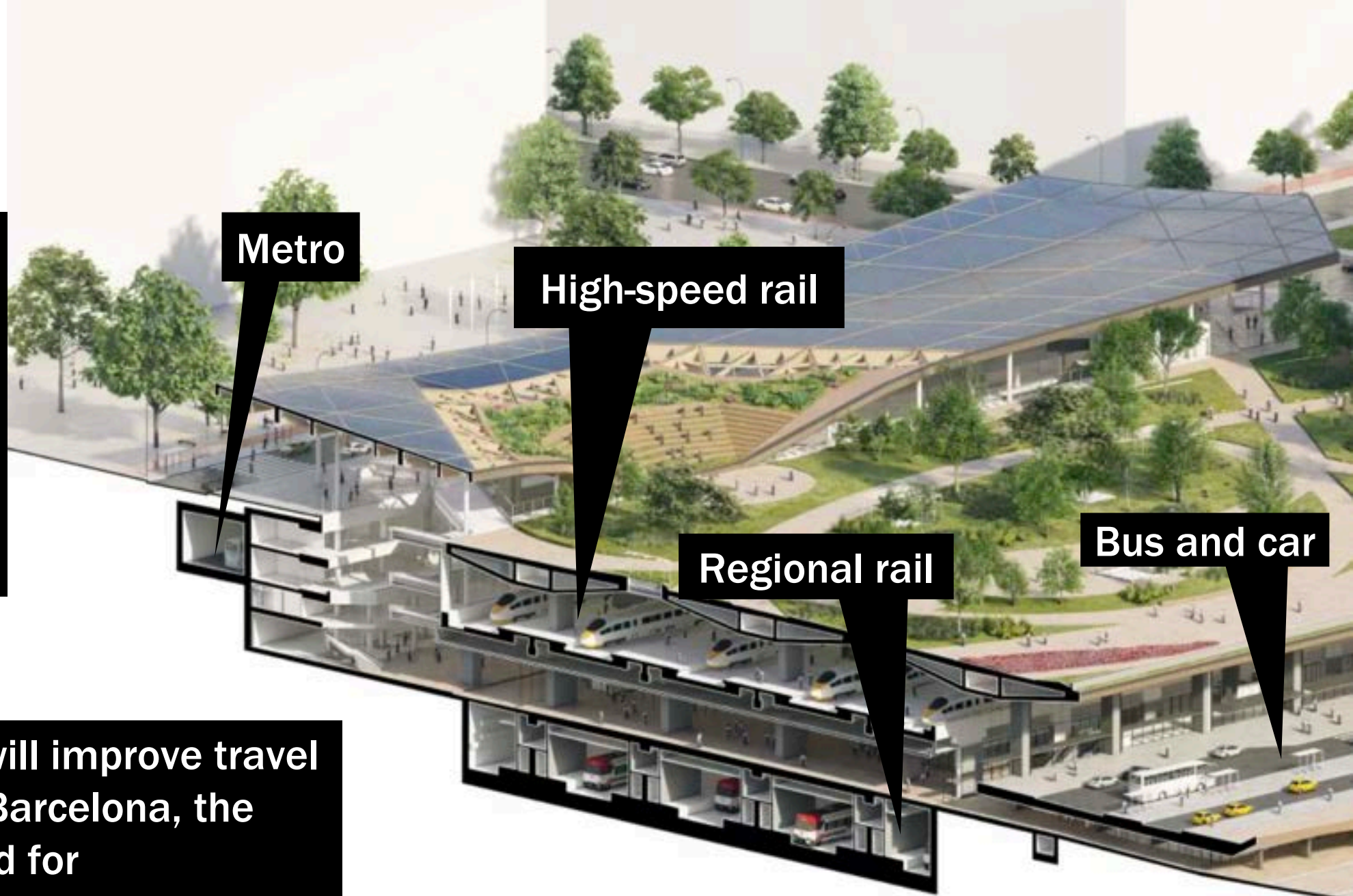
Enhancing Megaregional Connectivity in Catalonia

Sants – La Sagrera High-Speed Tunnel

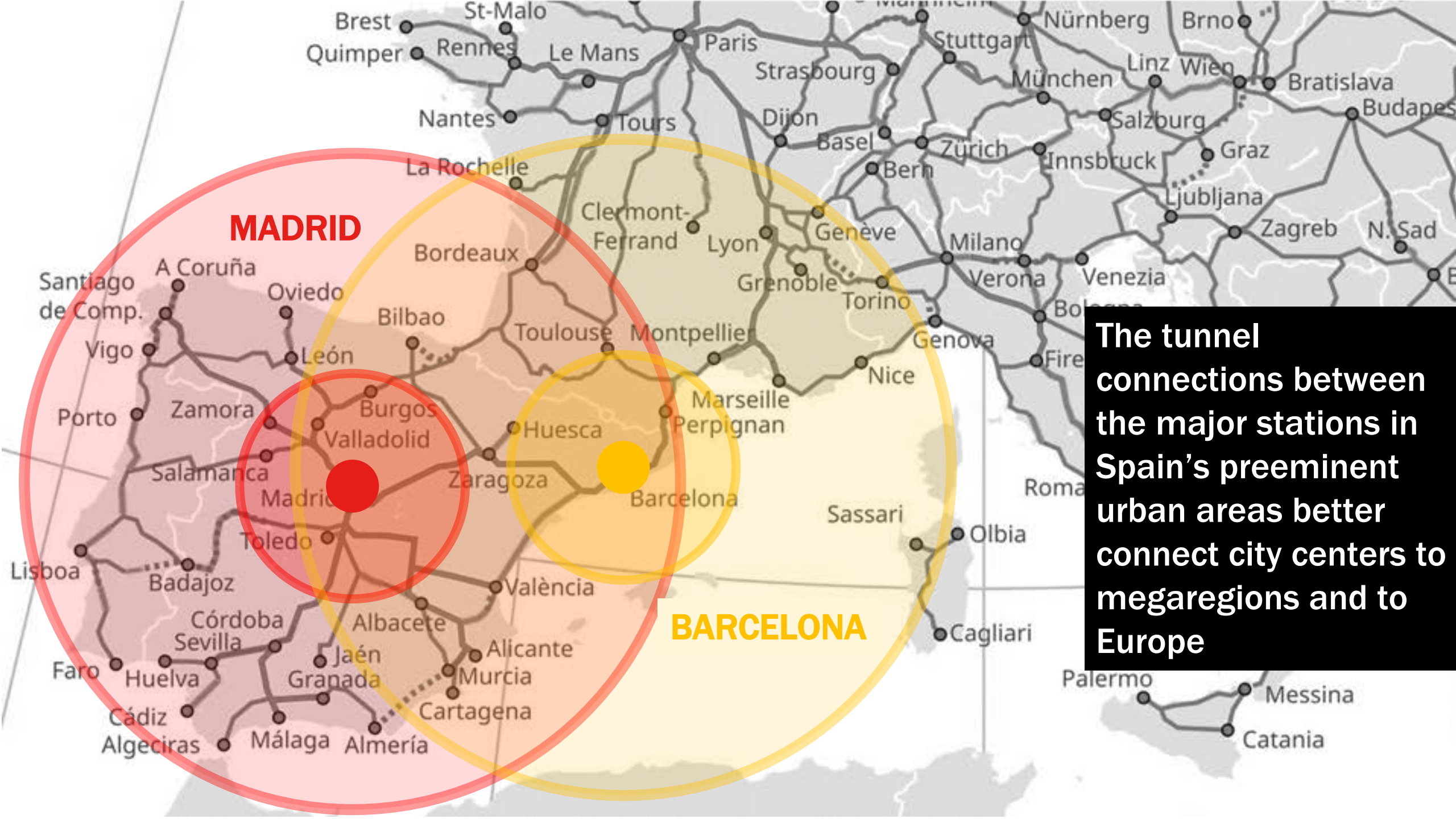


New station planned for over 275k daily travelers and will relieve overcrowded Barcelona-Sants Station.

La Sagrera Station will improve travel locally in northeast Barcelona, the Catalonia region, and for international high-speed rail travelers.



Barcelona La Sagrera



MADRID

BARCELONA

The tunnel connections between the major stations in Spain's preeminent urban areas better connect city centers to megaregions and to Europe

Paris CDG Airport effectively connects regional, national, and global transportation networks.

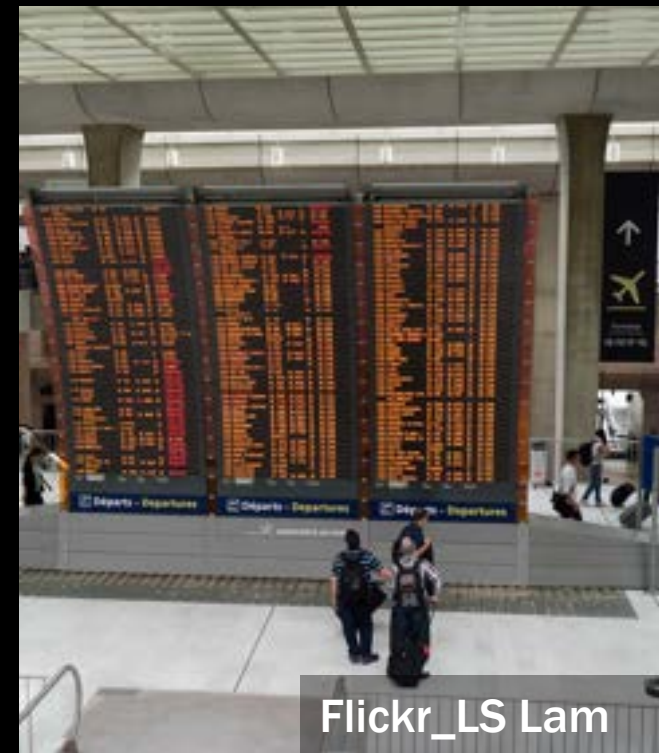


Paris Charles-de-Gaule Air/Rail Hub

Antony-22



Paris by Train



Flickr_LS Lam

3. Stations shape the neighborhoods and broader urban areas around them.

This is the front door of a station that welcomes 450k passengers daily, 3x as many as San Francisco International Airport



Eric Eidlin Paris St. Lazare



Historic neighborhood
shaped by rail
Gare St. Lazare & the
8th Arrondissement

Paris St. Lazare

Transforming an old freight yard into "a city within a city."

**A large multi-modal
travel hub for 100
million passengers
annually plus:
-25k new homes
-30k jobs
-40-hectare park**



Before

After

Project eliminates a "historic urban scar."



La Sagrera

The new 4 km El Parc del Camí Comtal will reconnect two neighborhoods long divided by railroad tracks.

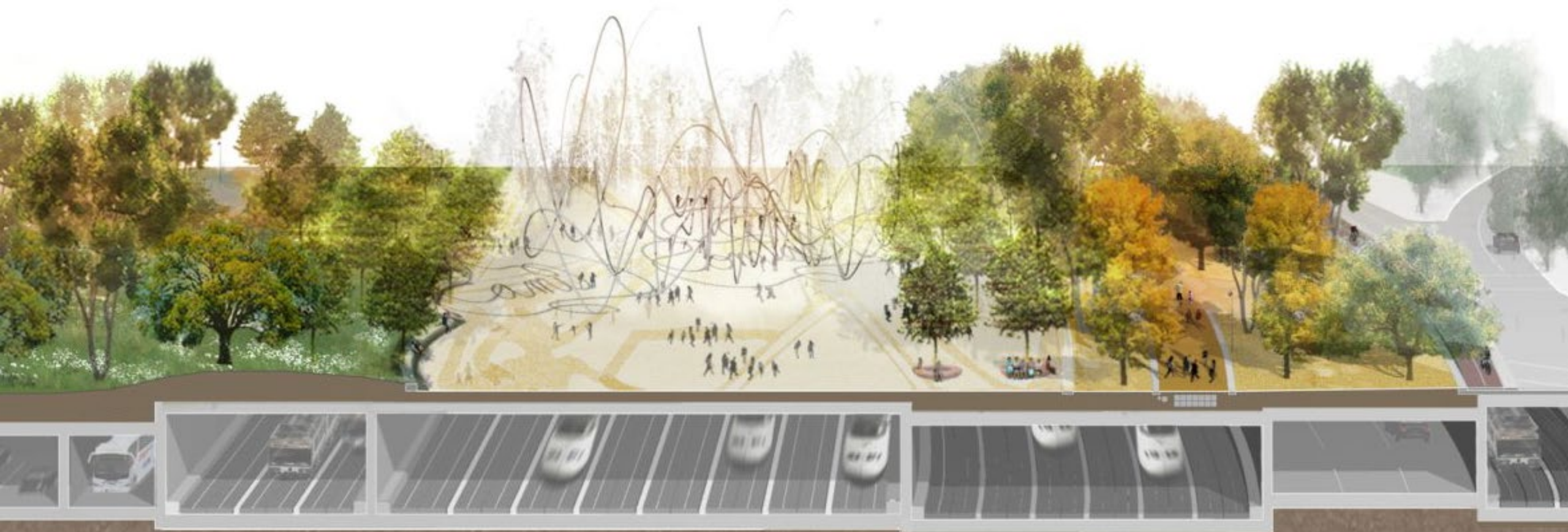
**Sant Martí
neighborhood**

**Sagrera
neighborhood**



El Parc del Camí Comtal

El Parc del Camí Comtal buries rail and road infrastructure and brings 180,000 locals new access to a massive urban park.






Over a period of several decades, new development is being constructed on top of the tracks leading into Gare d'Austerlitz in Paris

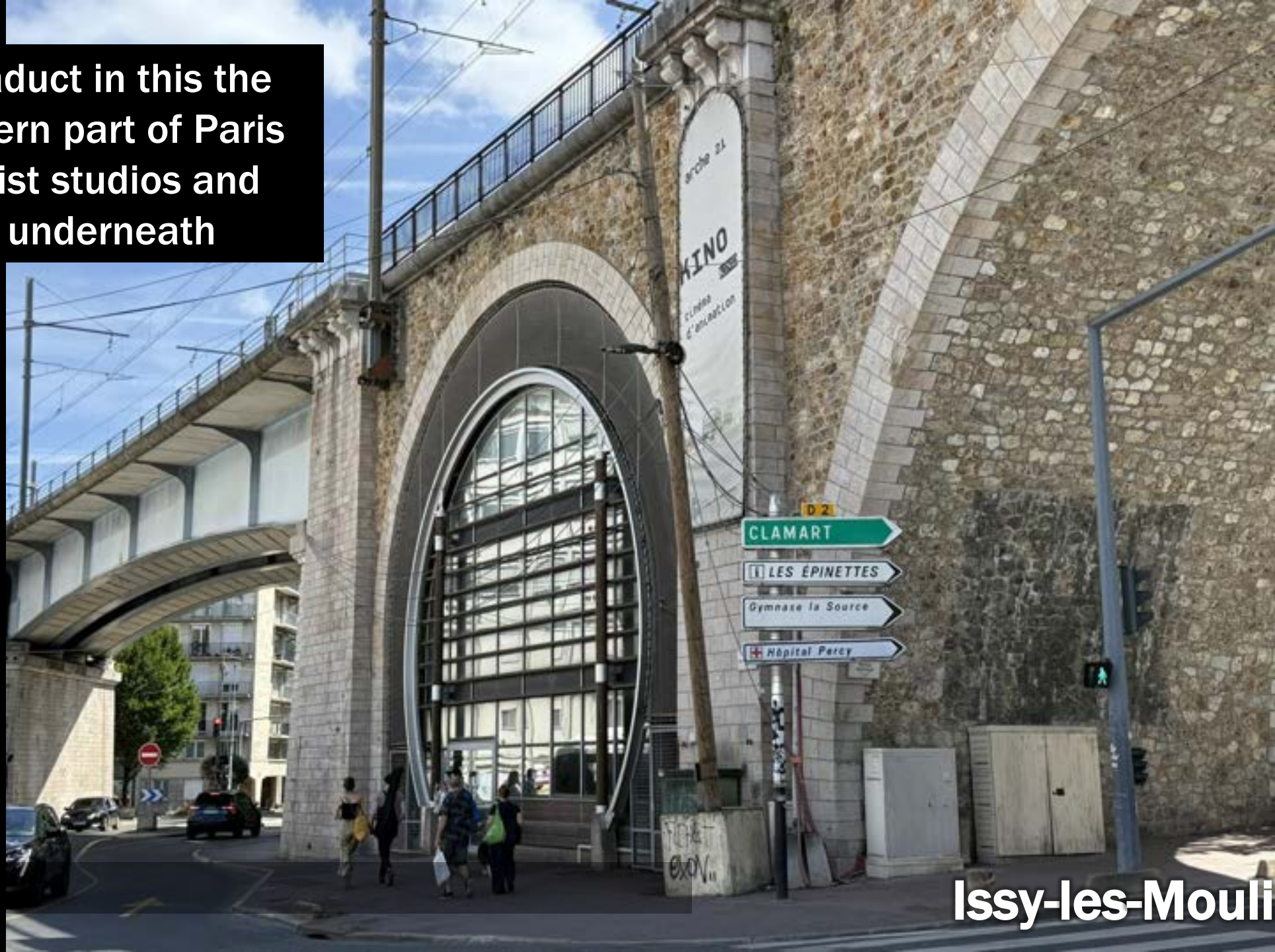
Eric Eidlin

Paris Rive Gauche



Gare St. Denis-Pleyel in the north of Paris is a bridge station that connects a working-class neighborhood to a growing office district on the other side of the tracks

The rail viaduct in this the southwestern part of Paris houses artist studios and other uses underneath



4. Great stations provide reasons for people to pass through them whether they are train passengers or not.

Madrid Atocha includes a large tropical garden inside the main atrium, an oasis of greenery in a highly urbanized part of the city.



Many great stations offer a wealth of retail and dining options, including Gare St. Lazare in Paris, with 80 different storefronts extending over three levels and 100,000 square feet of retail space



Madrid Principe Pío is similar to St. Lazare in that it includes a shopping mall attached to a station hub. It also includes a theater where people can watch live performances housed within one of the historic station buildings.

Eric Eidlin



Madrid Principe Pío

Matt Miller



Valence TGV



Beyond shops and services, the French Railways have made efforts to get more people to pass through stations as part of their daily routines. Childcare facilities are one example of this.

SNCF

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Childcare at Paris region stations

To make life easier for parents in the outer suburbs of Paris, SNCF Gares & Connexions and transport authority Île-de-France Mobilités have added childcare centres to local stations. The initiative is part of our joint Stations of Tomorrow and Micro-Care programmes.



Zaragoza Delicias

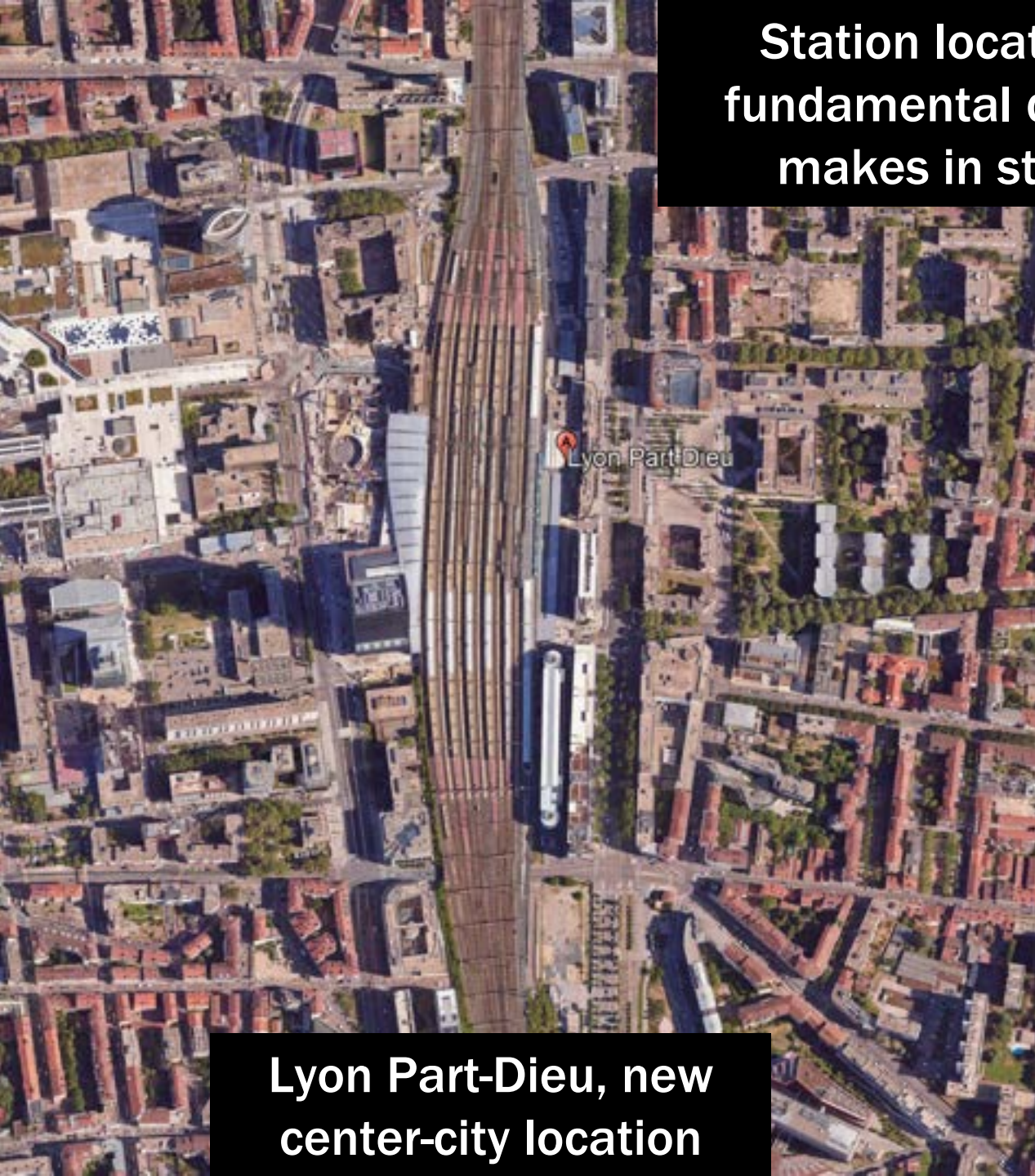
Throughout Europe, another approach has been to install parcel delivery lockers at stations. Here are examples from France and Spain.



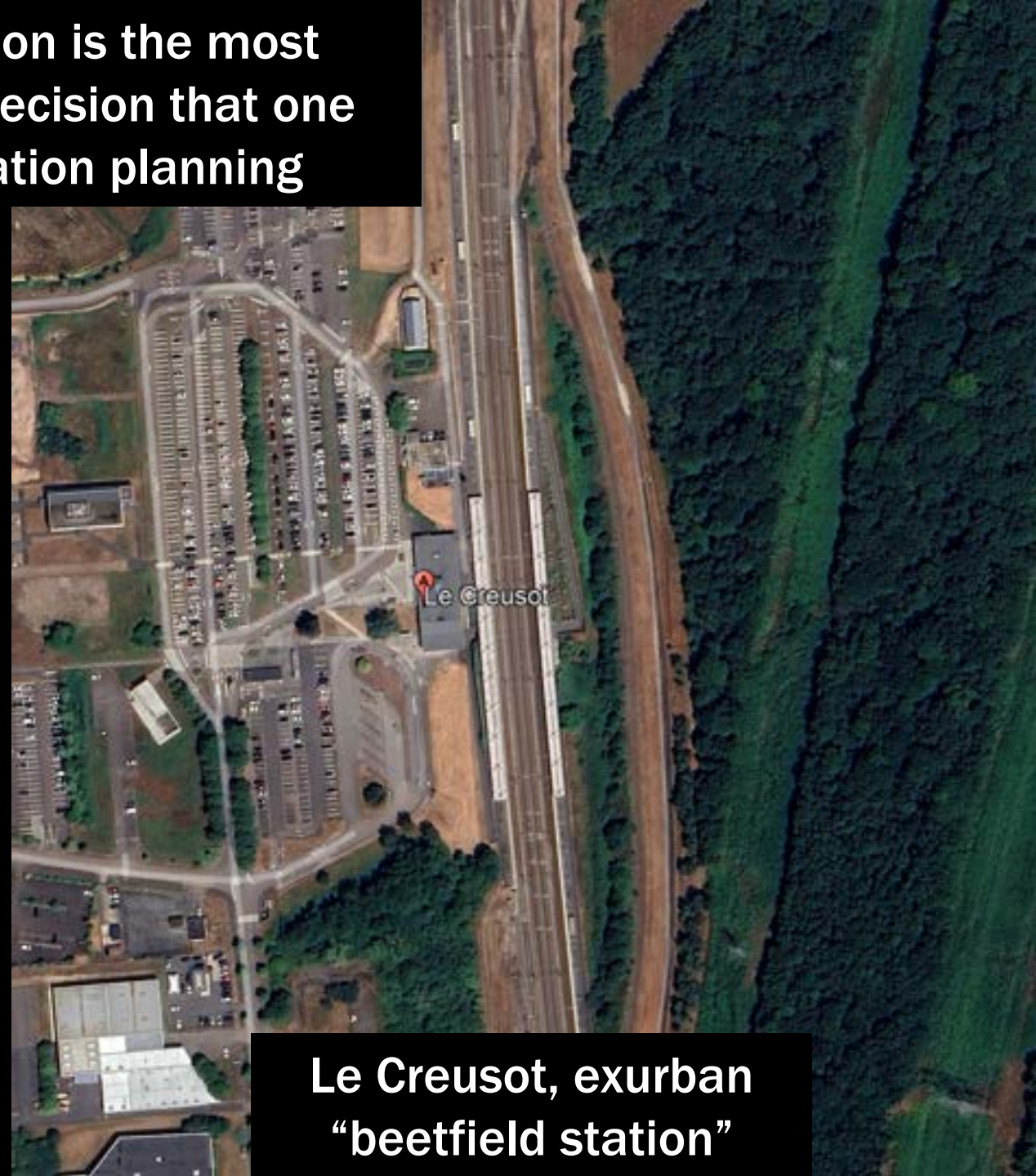
Paris Gare de Lyon

5. Building with the future in mind is essential. When planning a station, you should start with the least flexible elements first such as tracks and platforms.

Station location is the most fundamental decision that one makes in station planning



Lyon Part-Dieu, new center-city location



Le Creusot, exurban "beetfield station"

Expanding some of the basic physical elements of a station can be very difficult once a station is already operational.

The width of platforms can be as important as the number of tracks in determining how many passengers can pass through a station.




6. The presence of strong national actors leads to better station management and a more unified passenger experience.

Strong involvement by the national rail operators in the overall customer experience, including on issues of wayfinding, makes for a more seamless and coherent passenger experience than is typical in the U.S.



Eric Eidlin

Paris Gare de Lyon

A photograph of the interior of San José Diridon Station. In the center, a man in a green jacket and dark pants stands near a phone booth, talking on a blue mobile phone. To his left are several Caltrain ticket machines with red "tickets" signs. To his right is a blue and white kiosk with a screen. Further right is a tall, silver "Clipper Add Value Machine". The background shows large windows with a metal fence and a view of the city. A black speech bubble points from the text to the screen of the kiosk.

Info screen shows train information
only for Caltrain, not other rail
operators that serve station

The lack of a dominant regional,
statewide, or national rail operator is
evident in the lack of integrated passenger
information at many stations in the U.S.

Context-sensitive signage ensures information is seen and understood. Banners used on upper levels with natural light; on-floor projection is used on darker lower levels of stations.





Barcelona

7. Rail and rail projects benefit from comprehensive and colorful PR campaigns that focus on communicating project benefits.

LE
NOUVEAU
MÉTRO

Grand
Paris
express

Si on démarre
les travaux
tôt aujourd'hui,
**c'est pour
vous permettre
de vous lever
plus tard
demain.**

LE 16 OCTOBRE
VISITEZ LES CHANTIERS
DU GRAND PARIS EXPRESS



Inscriptions sur
societedugrandparis.fr

LE
NOUVEAU
MÉTRO

Grand
Paris
express

Si on travaille
sous terre
aujourd'hui,
**c'est pour
vous emmener
prendre l'air
plus loin
demain.**

LE 16 OCTOBRE
VISITEZ LES CHANTIERS
DU GRAND PARIS EXPRESS



Inscriptions sur
societedugrandparis.fr

Grand Paris Express, le nouveau métro



68
gares



4

nouvelles
lignes de métro :
les lignes 15,
16, 17, 18 et
le prolongement
de la ligne 14



mises en
service entre
2024
et **2030**



200

kilomètres de lignes de métro
s'ajoutent aux 200 km actuels

Issy-les-Moulineaux

GRAND PARIS EXPRESS
LE METRO DU GRAND PARIS

LIENS 19-200
GARE VITRY CENTRE

NOUS PRÉPARONS
LE CHANTIER
DU MÉTRO

En savoir plus sur les travaux
www.societedugrandparis.fr/vitry



San José Diridon Station

NOUS PRÉPARONS
LE CHANTIER DU MÉTRO

Vitry Centre

Maison du Projet – "Project House"

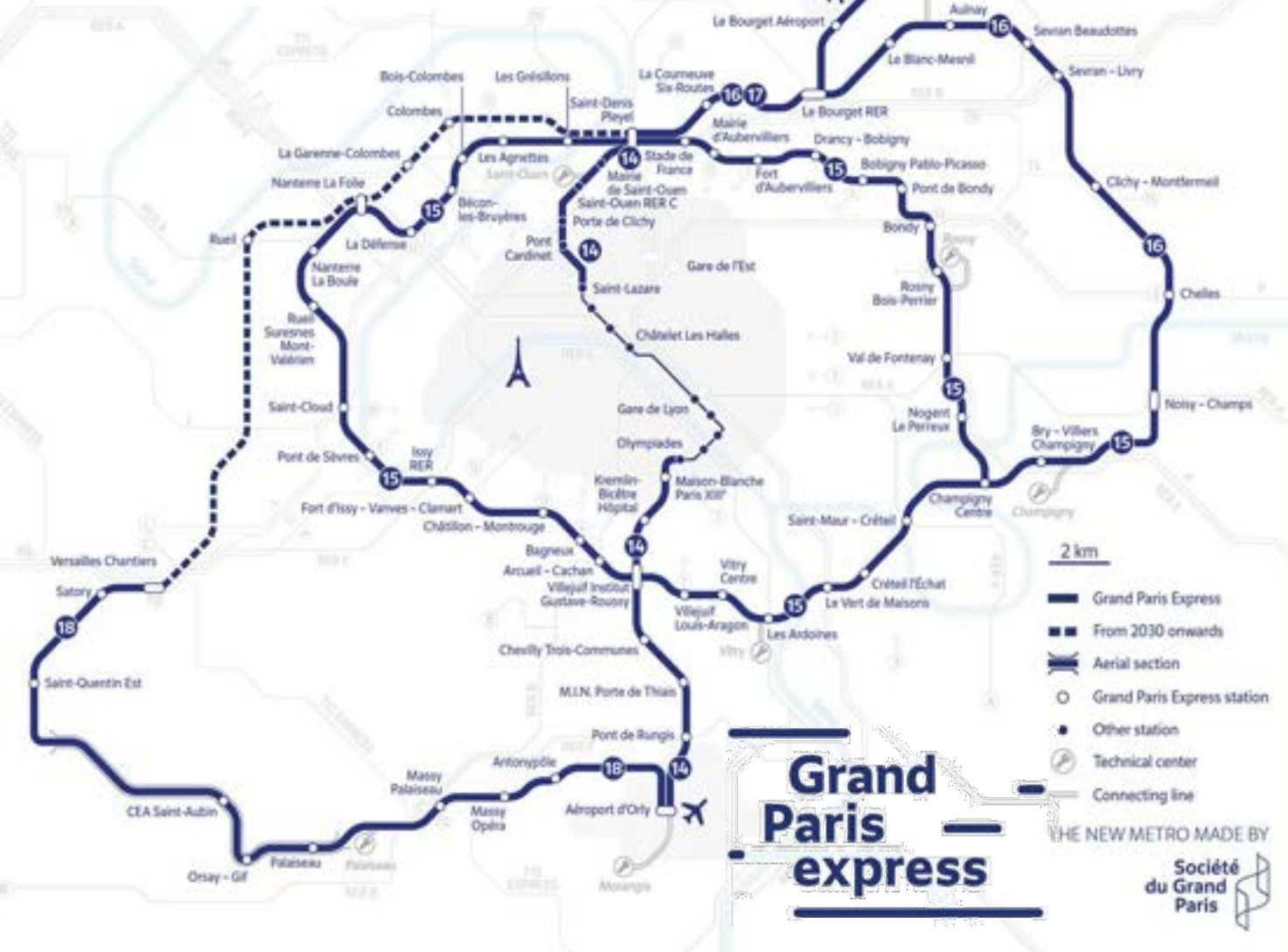
Located several blocks from the station for members of the public to learn about the Part-Dieu neighborhood.

Features 3-D models, maps, wall exhibits, brochures and postcards for people to take home, and more.



**8. Spain and France build
transportation megaprojects faster
and cheaper than the U.S.**

Paris Regional Metro Expansion



Opening
2020-2021



2024



2027



2030



125 miles of new track

68 stations

Estimated total cost \$49B

\$390M per mile

Madrid Metro Expansion



Total cost: \$12B (\$2023)

193 miles of new track

152 new stations



Source: Wikimedia

1994

\$62M / mile



Source: Wikimedia

2007

LYON PART-DIEU



\$514M

**1/3 of
budget
for public
spaces**

**\$225M for station and station facilities
\$119M for construction of new Track L
\$157M for public spaces
\$14M for car rental facility**

Public Sector Entities with High Levels of In-House Capacity



**Société
des Grands
Projets**

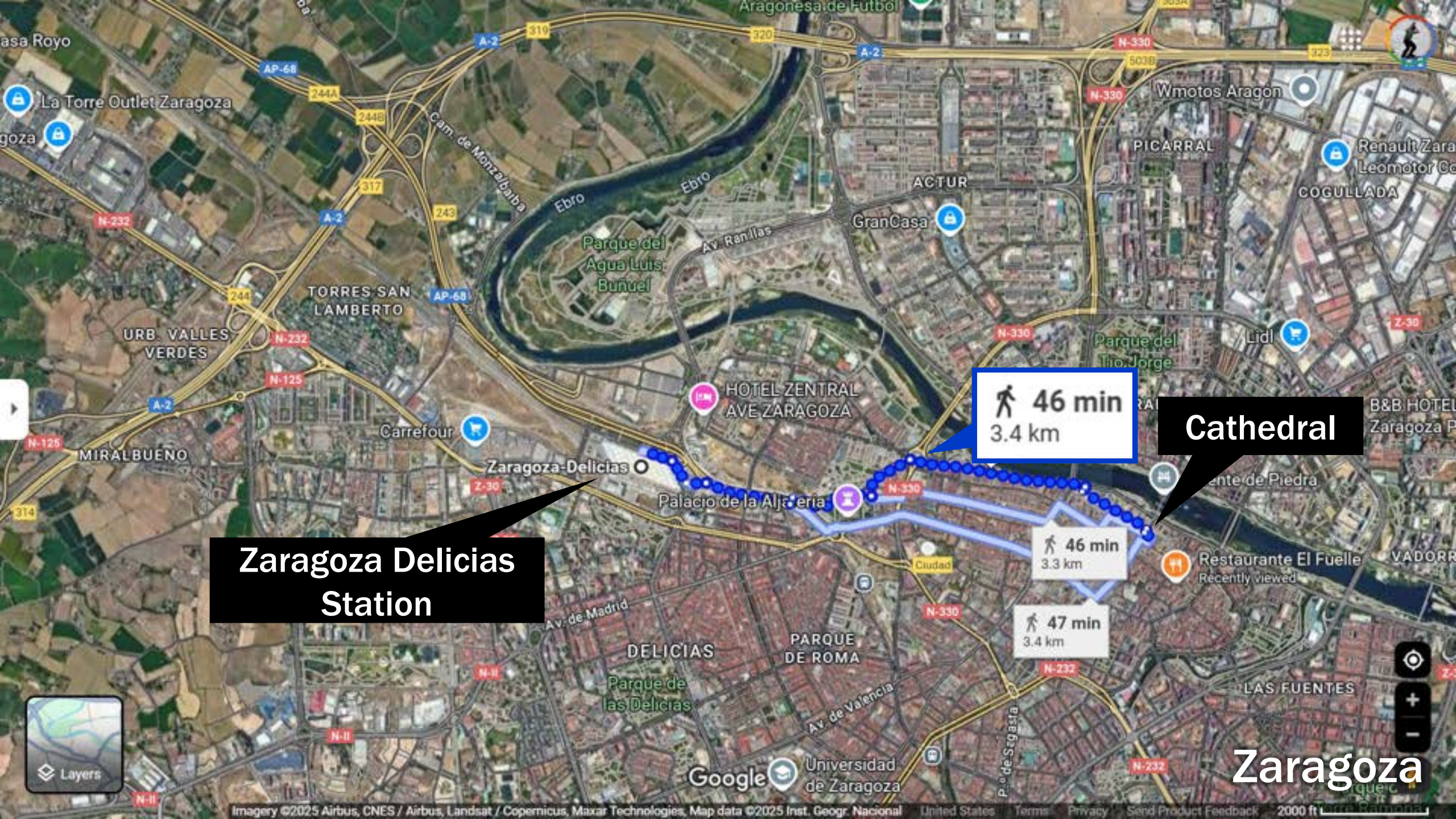


9. HSR doesn't change everything everywhere immediately.



Alejo Bagué

Zaragoza Delicias



**Zaragoza Delicias
Station**

46 min
3.4 km

Cathedral

46 min
3.3 km

47 min
3.4 km

Zaragoza

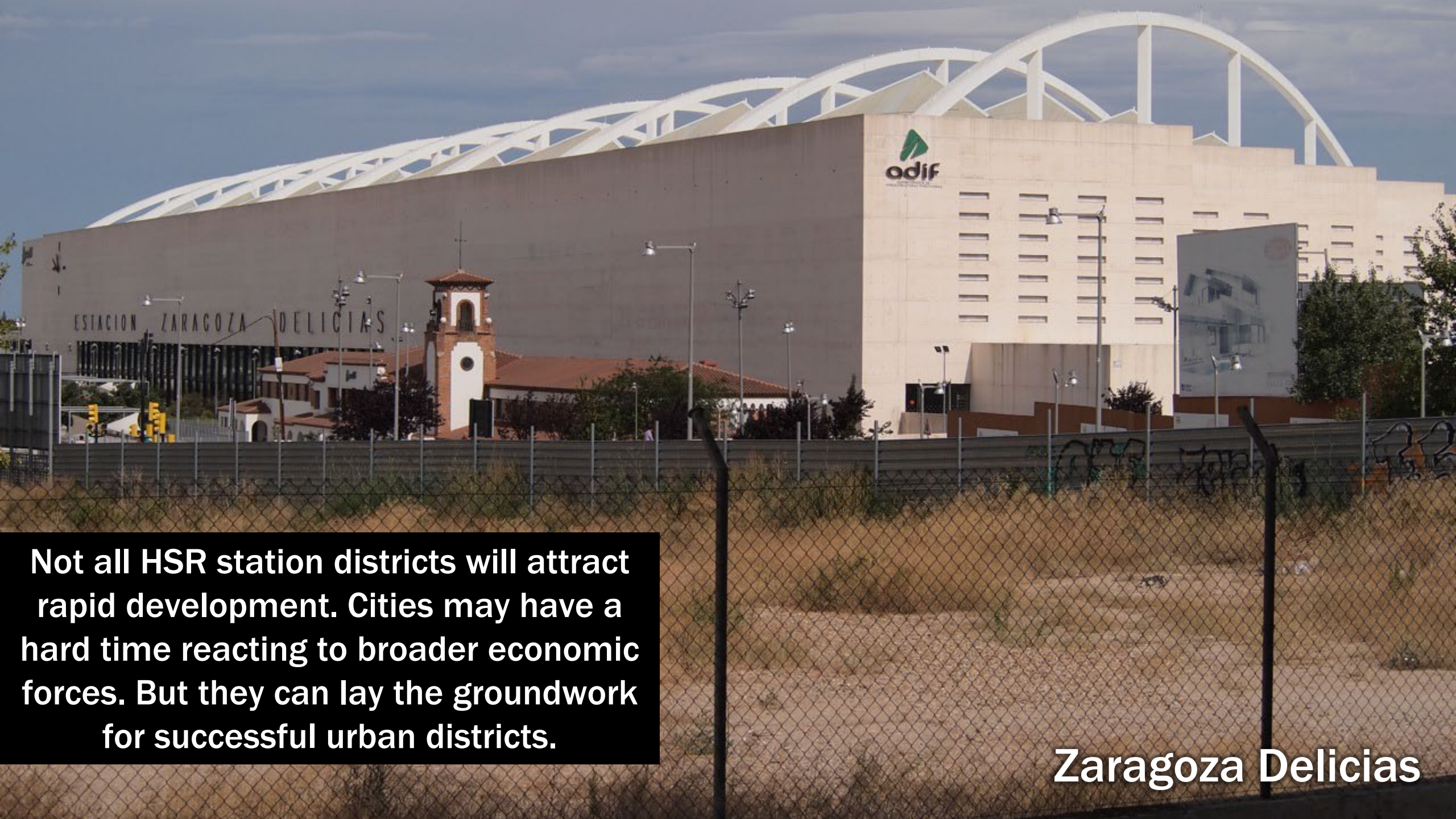




Rob Lawrence



Zaragoza




Not all HSR station districts will attract rapid development. Cities may have a hard time reacting to broader economic forces. But they can lay the groundwork for successful urban districts.

Zaragoza Delicias

reserved for cars, with direct access to station platforms via an underground car parking garage. Taxis have more convenient access than local buses.



Zaragoza Delicias



Direct access to the
platforms via
underground parking
garages is provided

Zaragoza Delicias

Topics for future research



Barcelona Sants

While many stations provide shops, services and amenities that go beyond the basic needs of travelers, some stations – or parts of stations – lacked basic elements such as public seating areas.

Madrid Atocha



Security checks for intercity rail in Spain reduce the ease of travel by rail.



Eric Eidlin

Ticketing and boarding processes are more rigid in Spain. It is difficult to board trains with little advance notice, including even for trips of less than one hour away.



Barcelona - Sants

Monaco Station

AI-Powered Video Analysis Software by XXII

XXII CORE monitors density in commercial areas and meets the counting requirements at the station's access points.

Counting - Entries/Exits



Counting - Trains



Counting - Passengers on the platform



Detection - Parking





BARCELONA

Q&A: Two Barcelona Bike Activists On Mobilizing Against ‘Bikelash’

Streetsblog sat down with two cycling advocates from Barcelona to discuss their strategies for combating “bikelash.”



L'ÉPOQUE • MOBILITÉS URBAINES

« Les vélos ont pris le pouvoir sur tous les autres usagers. Ils ne respectent rien ! » : la montée de la grogne anti-cyclistes

Par Olivier Razemon

Publié le 11 novembre 2024 à 08h15, modifié le 11 novembre 2024 à 12h15



FLORIAN THEVENARD POUR L'ÉPOQUE

Too much density?



Vue sur les tours Incity, Oxygène et Part-Dieu De Lyon. @WilliamPham

Fin des tours à la Part-Dieu : "On n'a pas tous envie d'habiter à Manhattan"



High-Speed Stations in Spain and France 2026

This is your chance to build upon this year's work!

2025 students explored:

- Station connections to the surrounding city
- Amenities for travelers and non-travelers alike
- Bicycle and pedestrian access points to stations
- Public Relations materials promoting new investments
- Select remote / transfer stations (e.g. CDG, Valence TGV)



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MTI MINETA
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