

MAKING THE MOST OF HIGH-SPEED RAIL IN CALIFORNIA

Lessons from France and Germany

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U.S. Department of Transportation
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REPORT

Making the Most of High-Speed Rail in California: Lessons from France and Germany

June 11, 2015

Eric Eidlin

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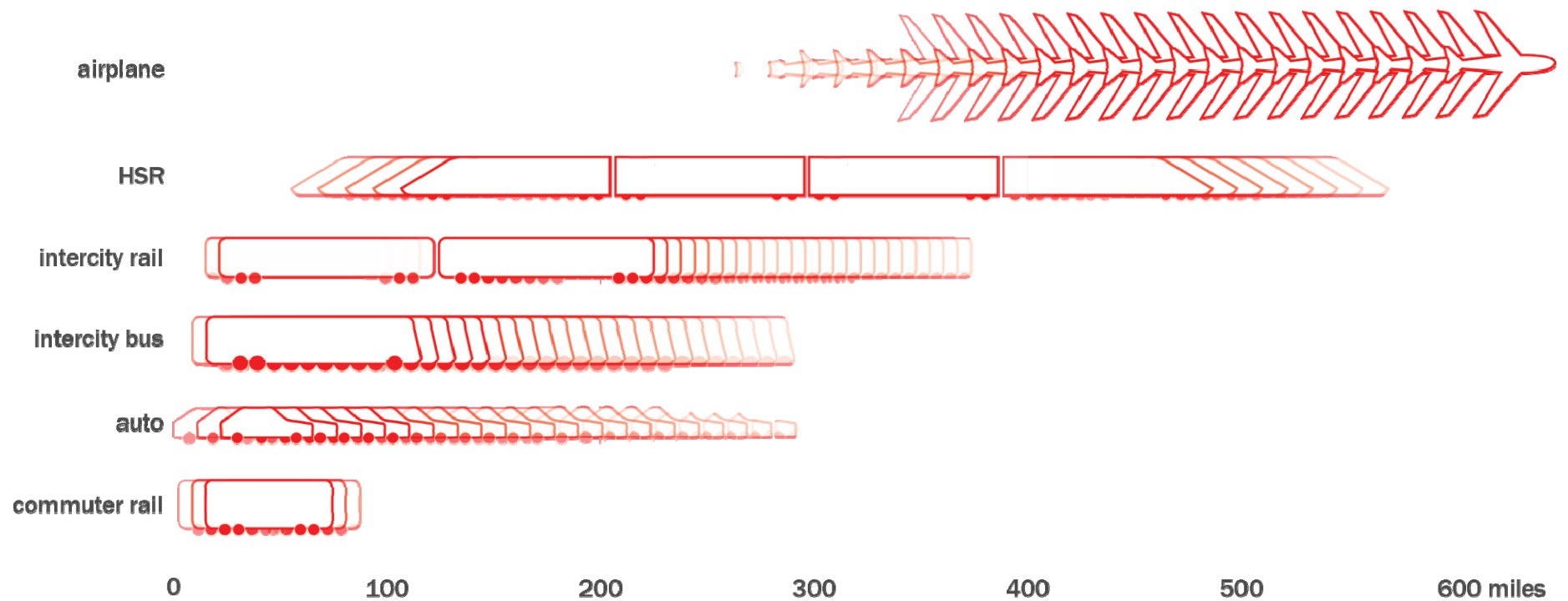


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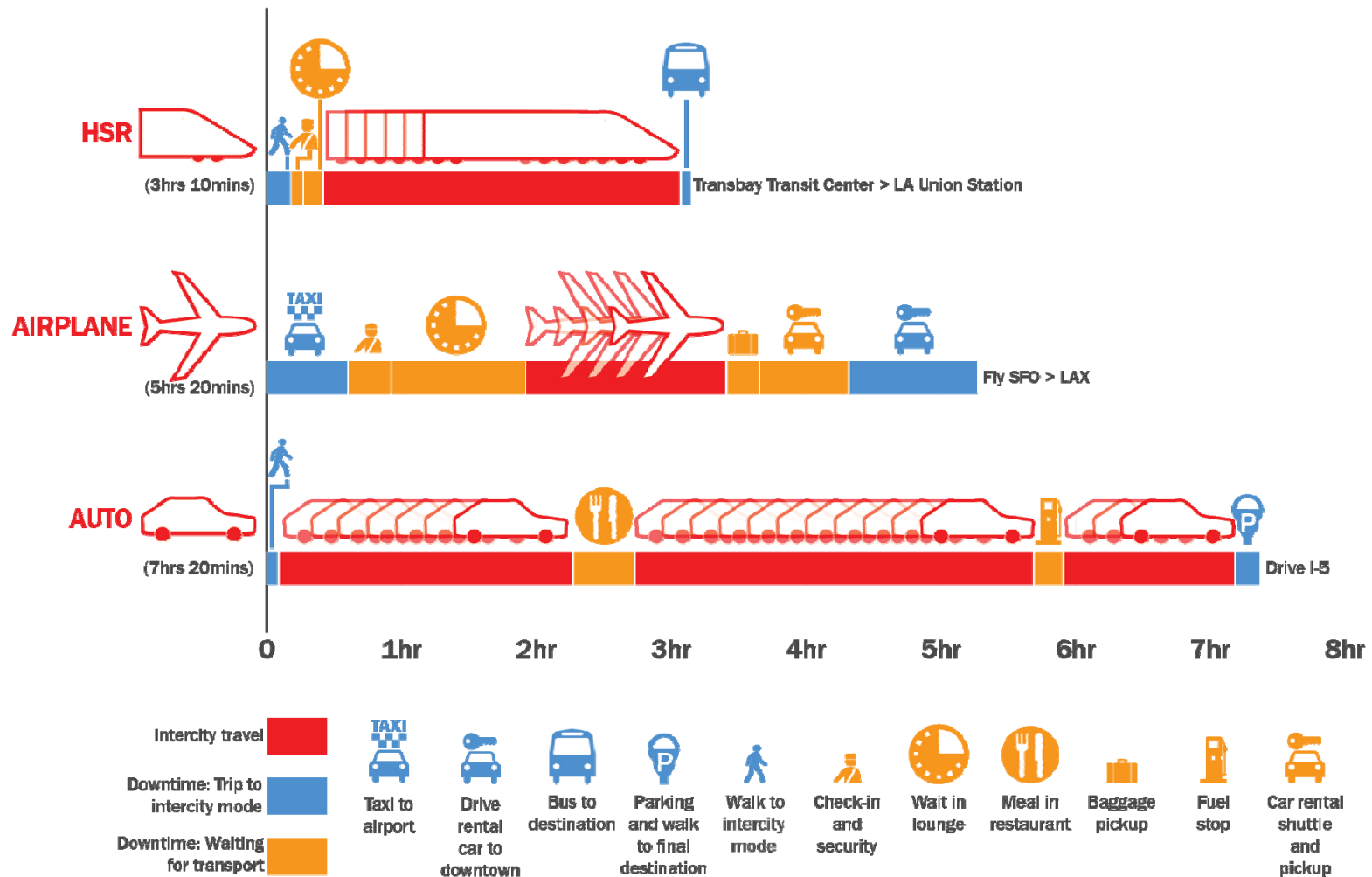
- **Why invest in high-speed rail?**
- **Rationale for California HSR**
- **Relevance for FTA and FRA**
- **HSR in France and Germany**
- **Key topics in HSR planning**
- **Lessons for California and the Bay Area**

Overview

Optimal Distance Ranges of Intercity Travel Modes

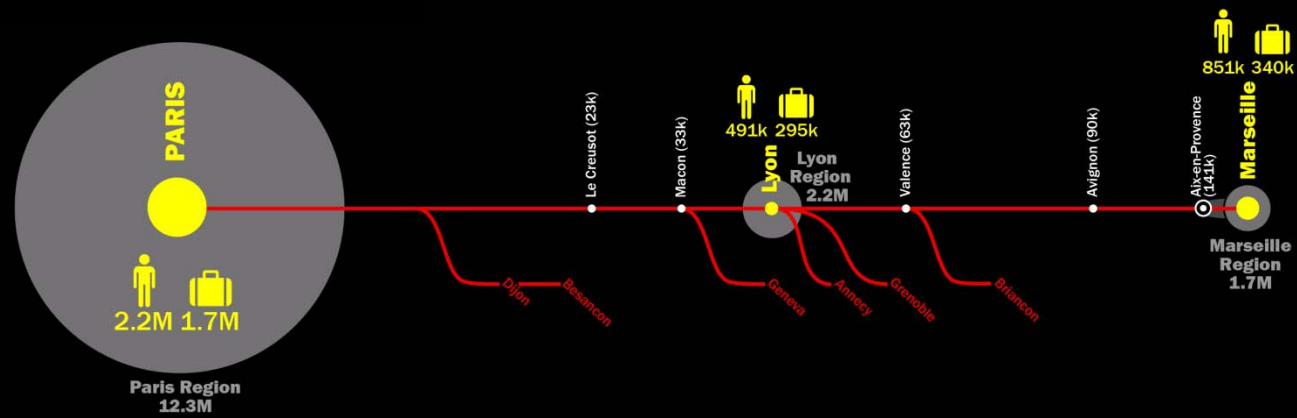


SF Ferry Building to LA Grand Central Market



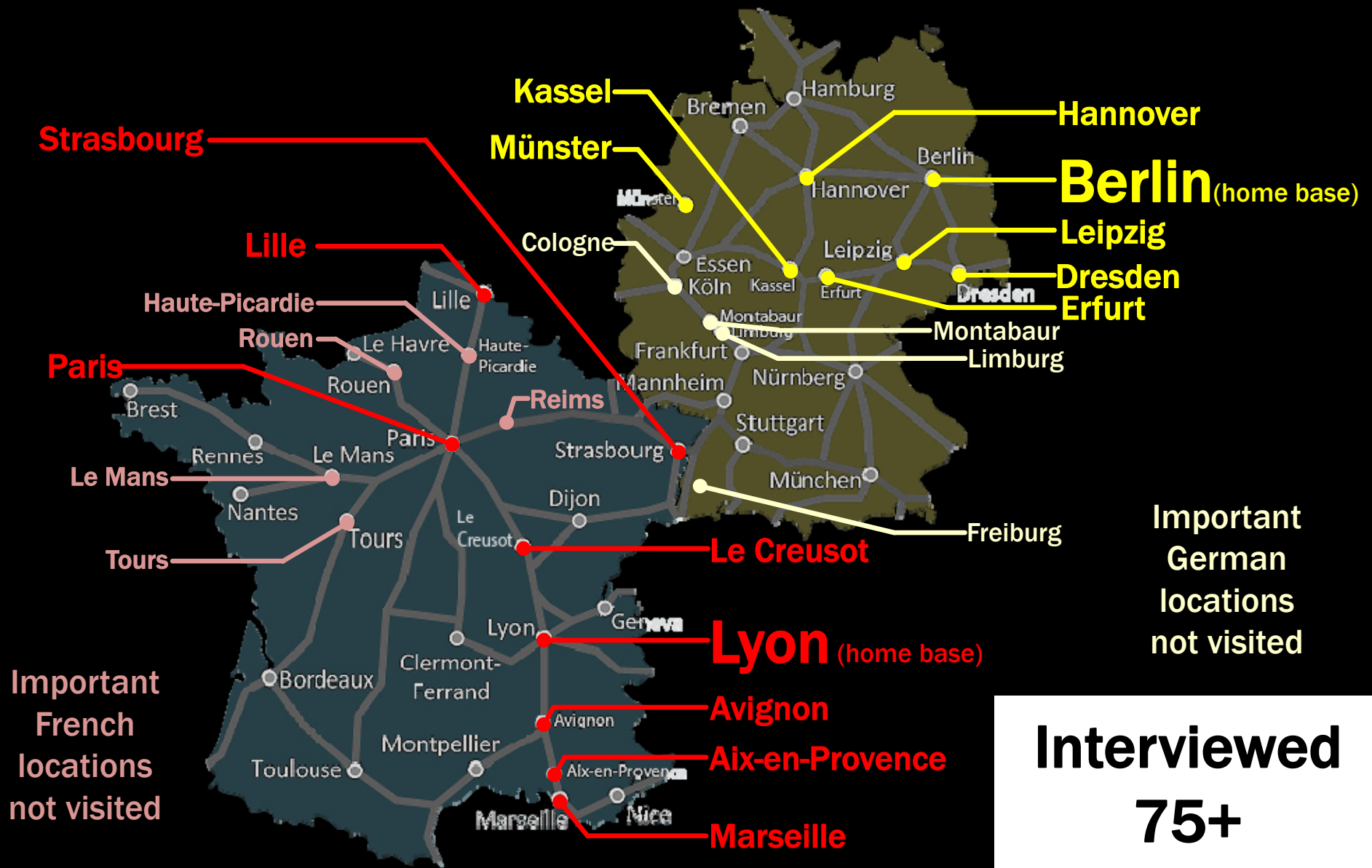
By Eric Eidlin, adapted from Brian Stokle

- HSR Line
- Metropolitan Region
- Primary City Within Metropolitan Region
- Population of Primary City
- Number of Jobs Within Primary City
- HSR Station City Population 100k-300k
- HSR Station City Population ≤ 99k



FRANCE

GERMANY



Important
French
locations
not visited

Important
German
locations
not visited

Interviewed
75+
individuals

Urban area size < 1 million ● 400k - 999k ●



FRANCE

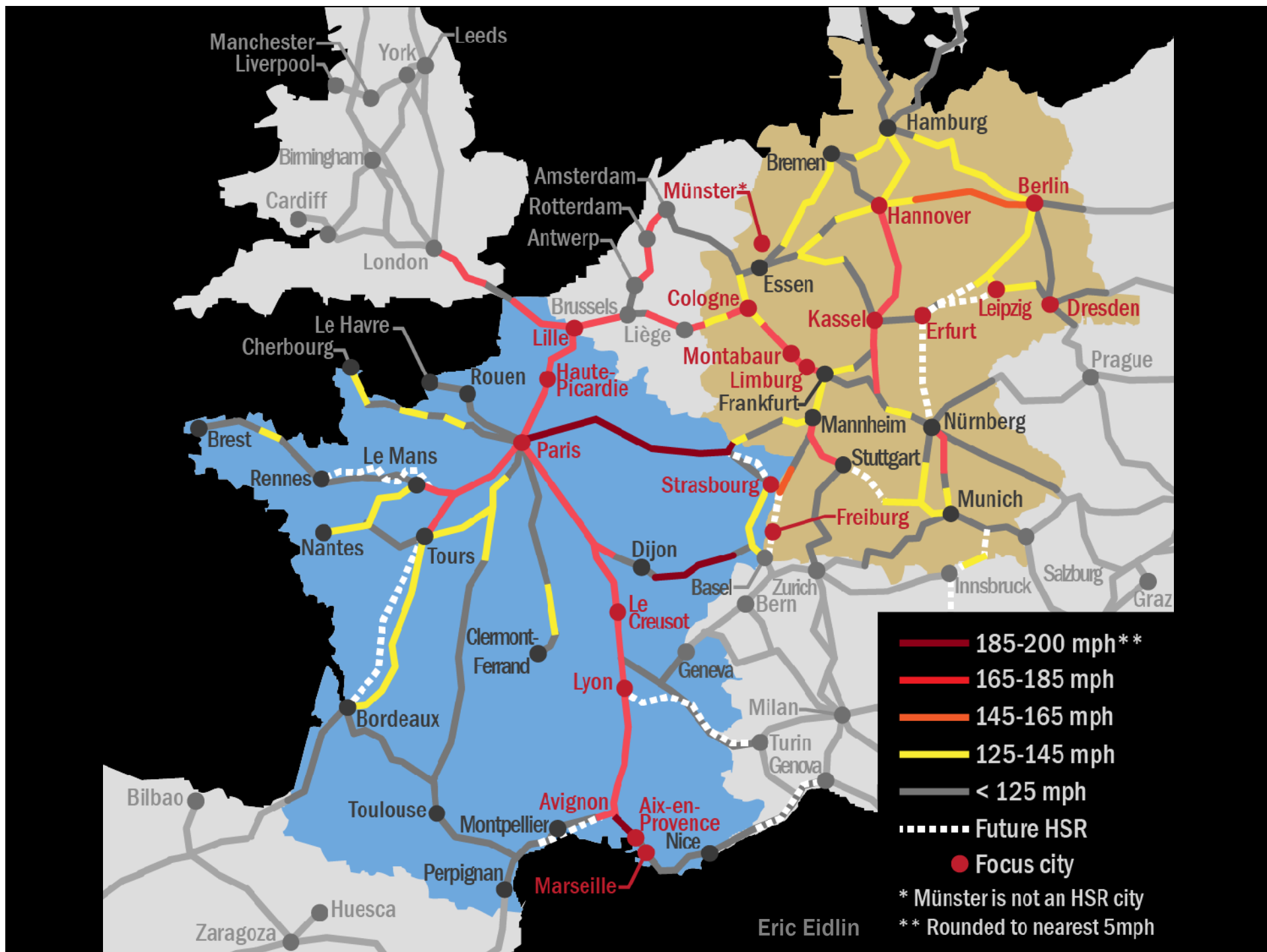
66 million inhab.

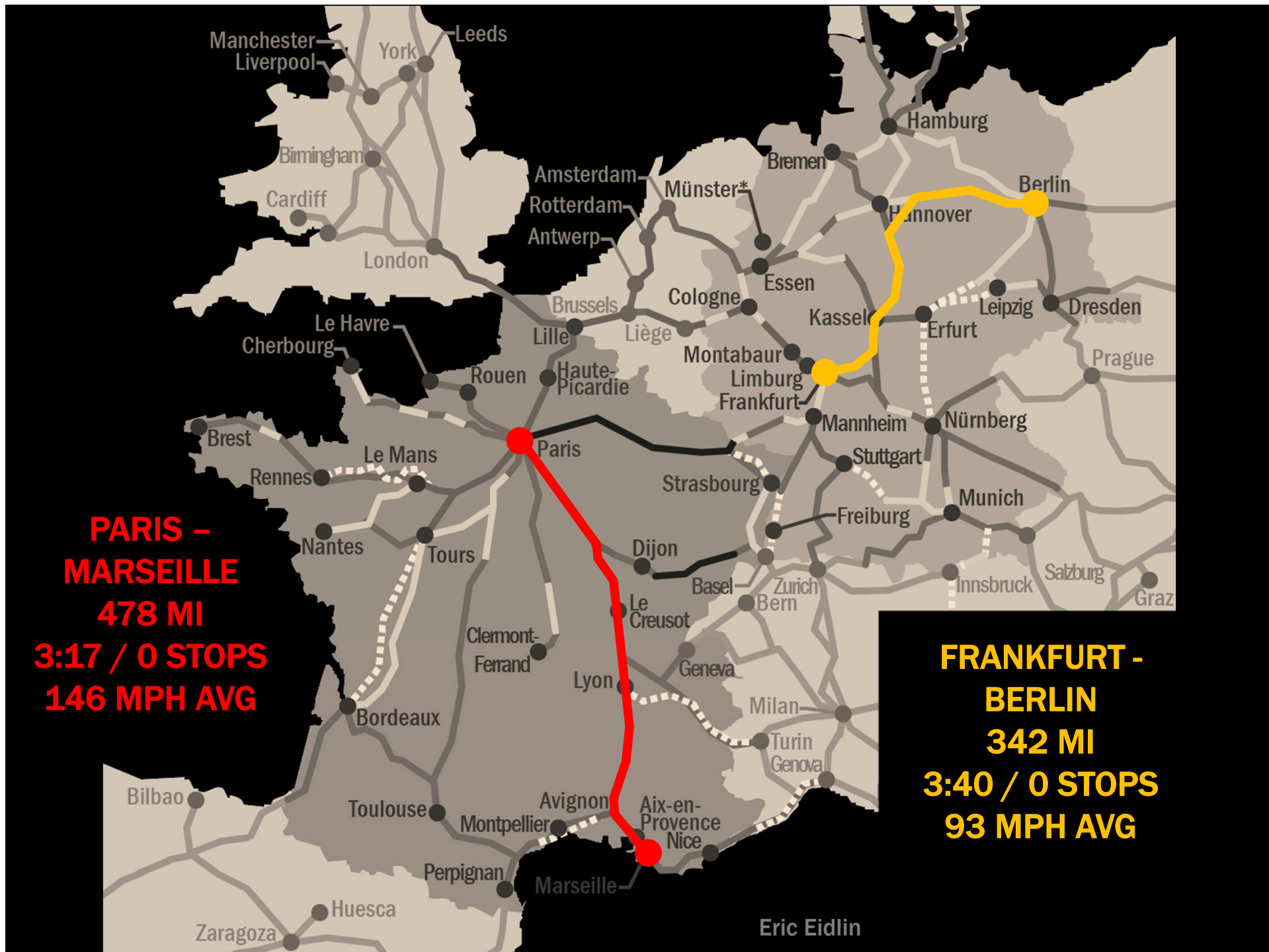
260,558 sq. mi.

302 people/ sq. mi.

Speed Versus Connectivity

High speeds should be prioritized in sparsely populated places, while maximizing connections should be primary concern in densely populated areas.

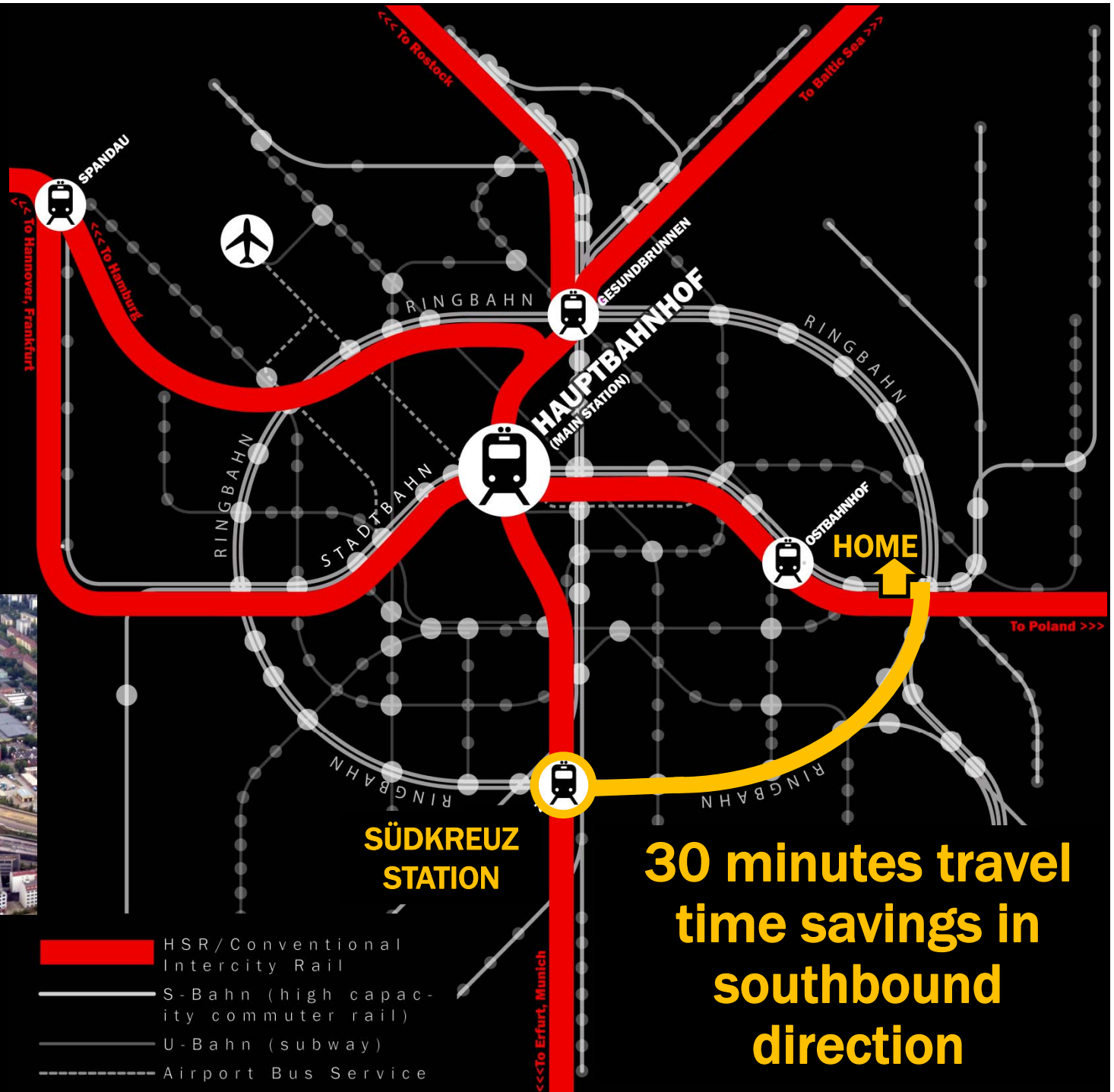




Paris Transit and HSR



Berlin Transit and HSR



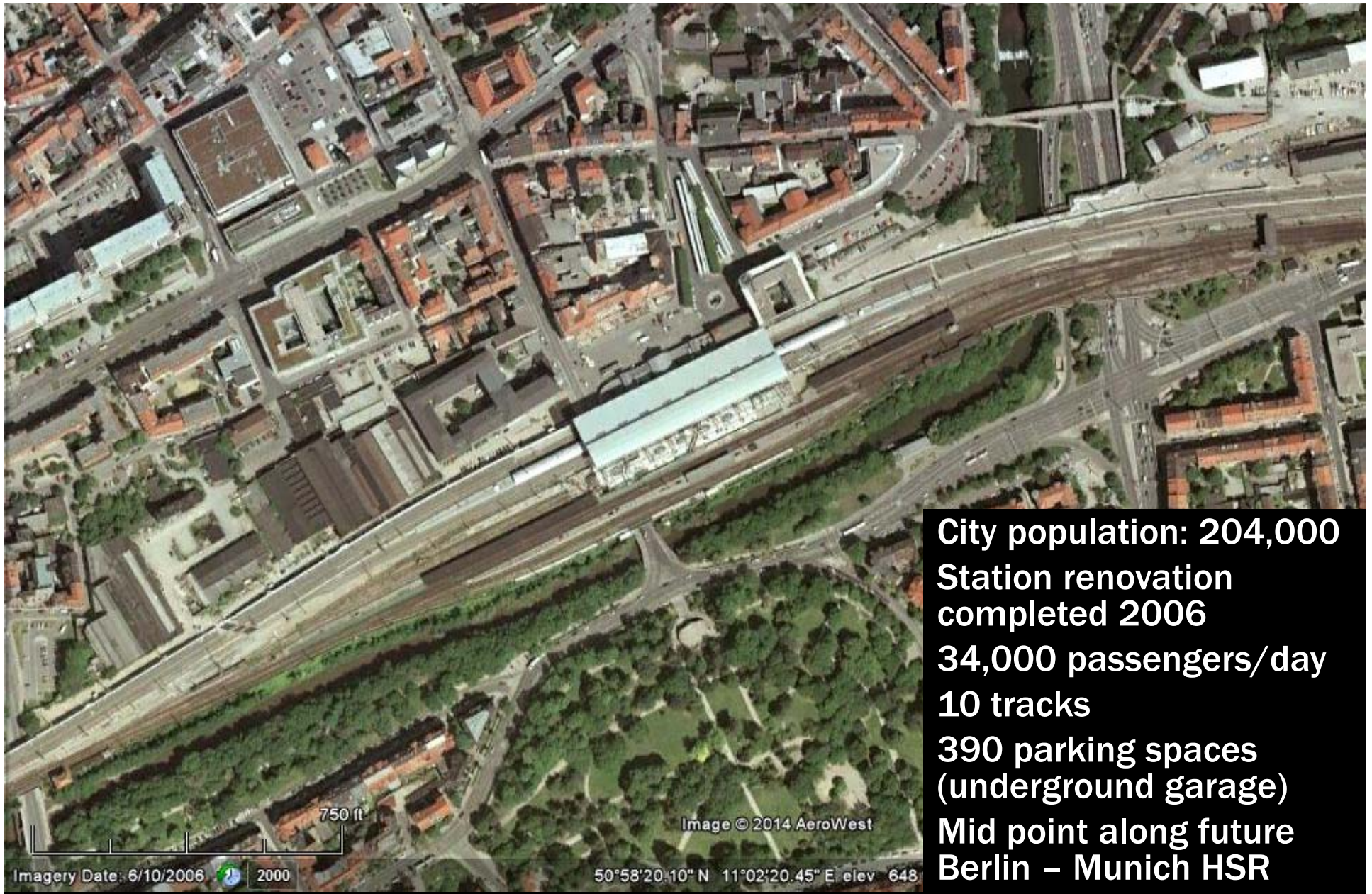
**30 minutes travel
time savings in
southbound
direction**

Station Types

Central city stations maximize the economic development and mobility benefits of HSR.



Central City - Erfurt



City population: 204,000
Station renovation completed 2006
34,000 passengers/day
10 tracks
390 parking spaces (underground garage)
Mid point along future Berlin – Munich HSR

Central City - Erfurt



“Gare Betterave”



Exurban - Le Creusot



Opened: 1981
3 Small towns of 10,000-15,000 nearby
2,740 passengers/day
750 parking spaces
4 tracks ([2 pass-through](#))

Exurban Station – Le Creusot

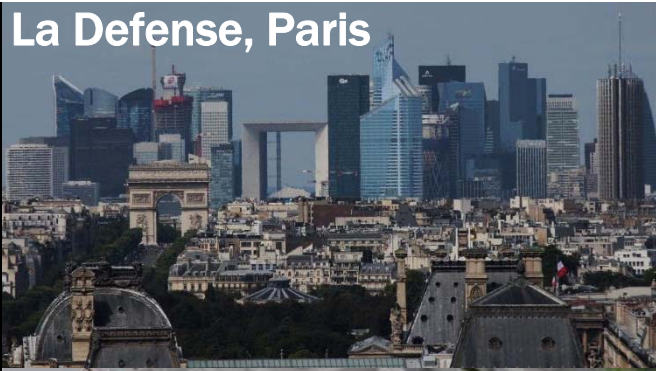
Station Area Land Use

High-density employment and commercial uses are best for HSR station districts.



New Center City – Lyon Part Dieu

La Defense, Paris



KEY NUMBERS

- Second office district in France
- 6.5 million sf new office space
- 1.6 million sf new residential space
- 2.2 million sf retail, event, and hotel space

KEY CONCEPTS

- “Gare ouverte”
- “Gare connectrice”
- “Socles actifs”
- “Sol difficile” and “sol facile”

New Center City - Lyon Part Dieu

Station Design

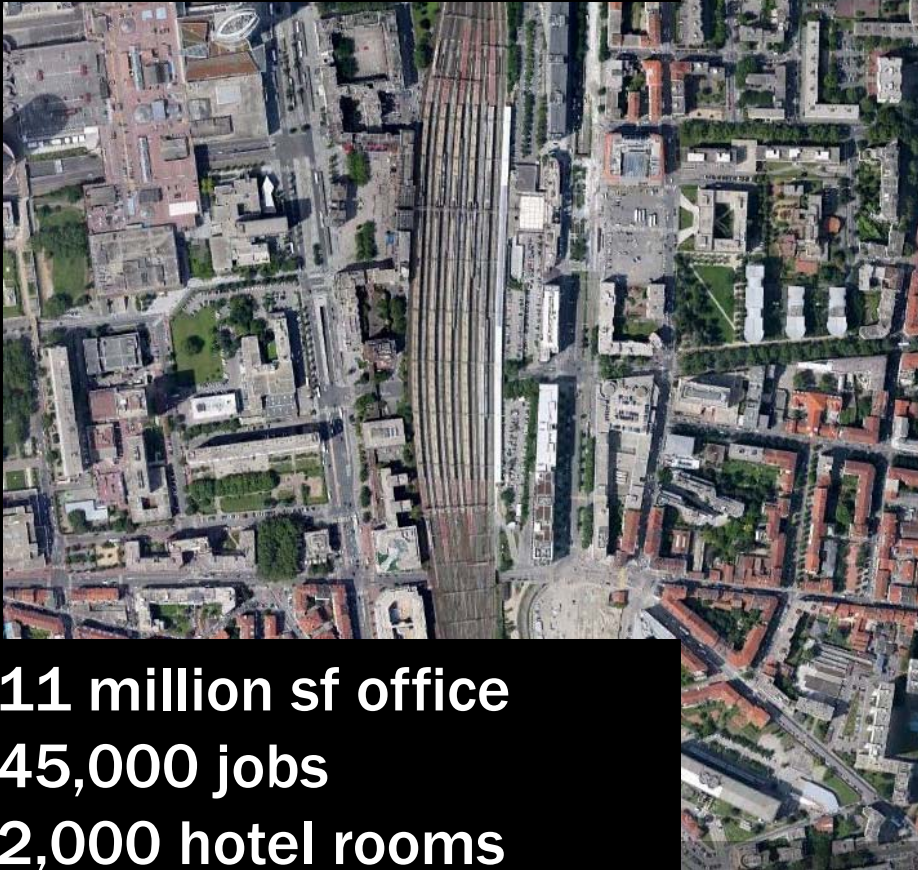
HSR stations have inherent urban design advantages over other types of transportation facilities. California should recognize and take full advantage of these.

Lyon Part-Dieu HSR

26 million passengers in 2011

362 acres

5,000 parking spaces



11 million sf office

45,000 jobs

2,000 hotel rooms

Lyon St. Exupéry Airport

8 million passengers in 2011

5,000 acres (approx.)

16,000 parking spaces

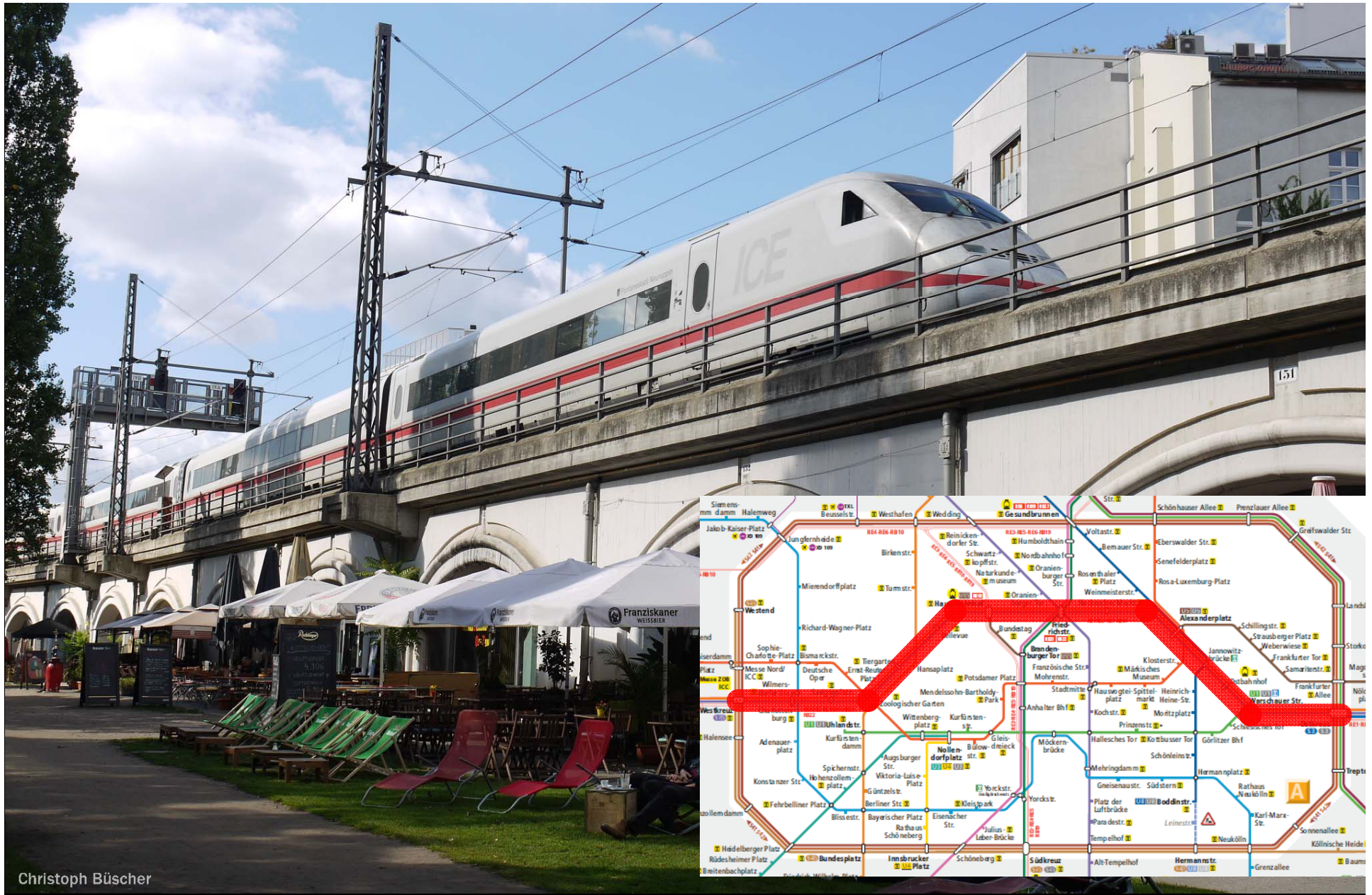


11,000 sf office

5,500 jobs

245 hotel rooms

HSR Stations and Space-Efficiency



Compatibility with Dense Cities

Station Design and Land Use

**HSR stations should celebrate their
non-transportation functions.**



Downtown Station / Mall - Hannover



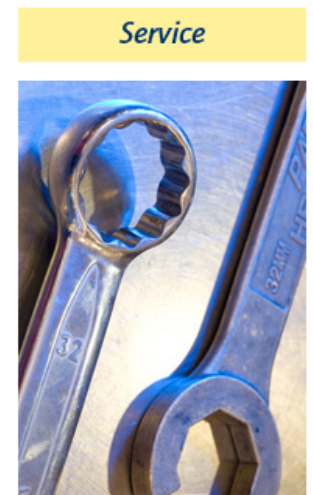
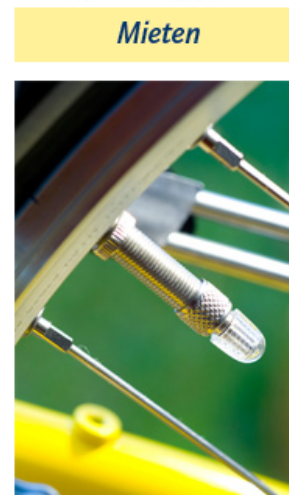
Hannover Main Station

Space-Efficient Access Modes

Access to stations by space-efficient modes of transportation, including walking, transit, bicycling, taxi and carshare should be prioritized.



- 3,300 bike parking spaces (largest garage in Germany)
- Importance of intermodalism



Münster Bike Station



Introducing

LYFT LINE

Your daily ride

lyft

Intermodal Connections

Within HSR stations, first-rate intermodal physical connections between HSR and non-auto access modes are essential.



Seamless Connections - Erfurt



Deutsche Bahn AG

Blended Stations

Intermodal Connections and Payment Systems

**It should be easy to pay to use
sustainable and space-efficient
local access modes to HSR
stations.**



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HANNOVERmobil

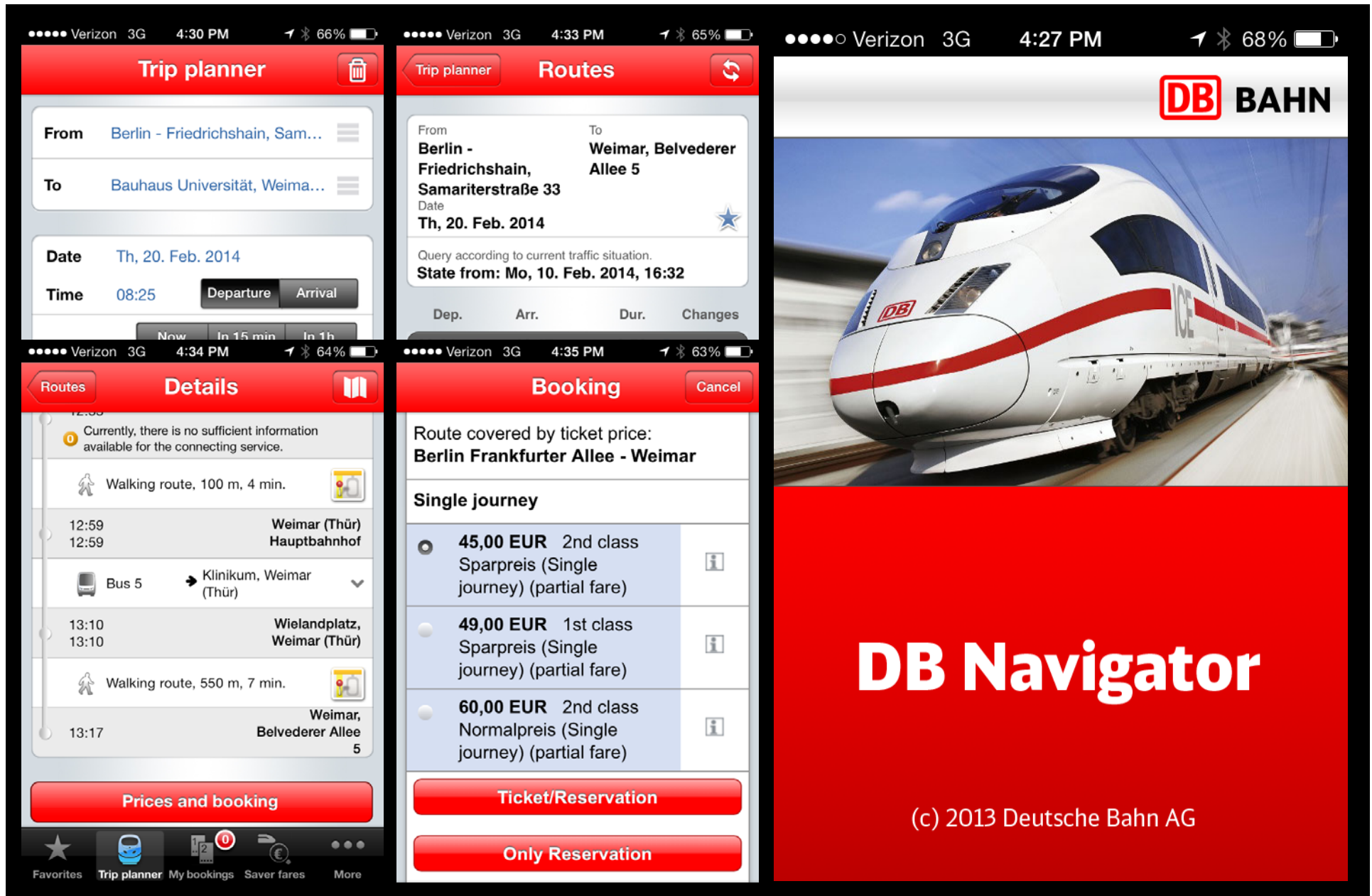
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Mobility Services



Integrated Navigation and Ticketing

Conclusions



HSR can be transformational in terms of development.



Most of California's planned HSR stations are in places that are centrally located, have significant development potential, and are anticipating rapid population growth.



California's HSR system will not mature for many decades. The way in which we travel in 50 years will likely be different from the way in which we travel today.

Opportunities/Challenges for California

The Importance of Vision

It is essential to articulate vision for project first and then figure out how to realize vision within constraints.

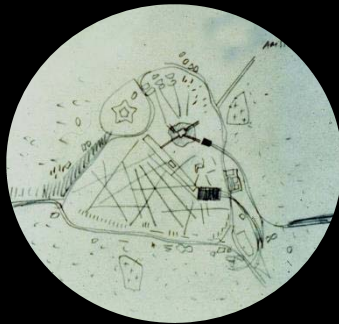




Powerful champions who can forcefully advocate for their visions for HSR stations and station areas are essential.



Carefully-conceived phasing plans that will foresee how station areas will evolve over time into more urban, compact, and economically dynamic places are essential.



Each station area should establish a cross-cutting governance entity (such as a joint powers authority) to lead station and station area design efforts as early in the design process as possible.

The Importance of Vision

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Source: Wikimedia Commons, Ninostar

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