The National Academies of
SCIENCES · ENGINEERING · MEDICINE

TRB
TRANSPORTATION RESEARCH BOARD

# TRB WEBINAR PROGRAM

## Considerations for Transporting Passengers to, and Through, Airport Facilities

June 9, 2016

2:00pm to 3:30pm ET

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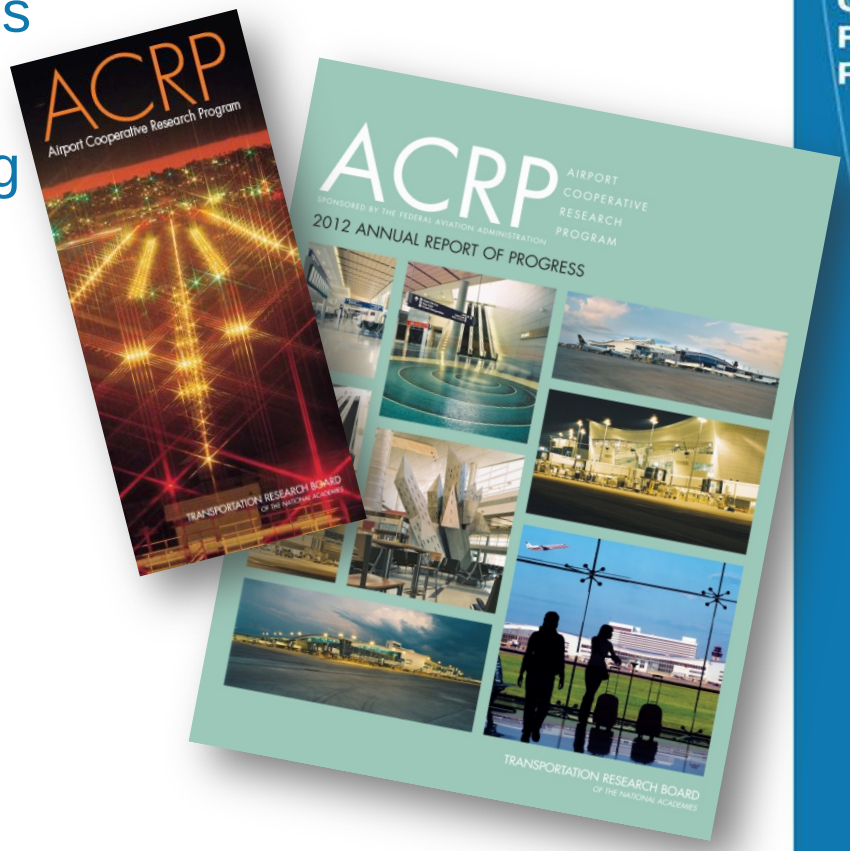


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# Upcoming ACRP Webinars

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**July 13:** ***Unmanned Aircraft Systems at Airports***

**August 24:** ***Collecting Data for Airport Emissions Modeling***

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http://www.trb.org/ACRP/ACRPwebinars.aspx

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- Designed to help early- to mid-career, young professionals grow and excel within the airport industry.
- Airport industry executives sponsor promising young professionals within their organizations to become ACRP Champions.
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# Additional ACRP Publications Available on this Topic

- **Legal Research Digest 3**: Survey of Laws and Regulations of Airport Commercial Ground Transportation
- **ACRP Report 25:** Airport Passenger Terminal Planning and Design
- **ACRP 40:** Airport Curbside and Terminal Area Roadway Operations
- **ACRP Report 55**: Passenger Level of Service and Spatial Planning for Airport Terminals
- **ACRP Report 67**: Airport Passenger Conveyance Systems Planning Guidebook

*You can learn more about these publications by visiting* ***www.trb.org/publications***

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# Today's Speakers

Moderated by Danielle Rinsler, FAA

1) Report 118: Integrating Aviation and Passenger Rail Planning
   - Matthew Coogan, New England Transportation Institute

2) Report 146: Commercial Ground Transportation at Airports: Best Practices
   - Peter Mandle and Stephanie Box, InterVISTAS

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A presentation by

**Matthew A. Coogan**
**Principal**
**Investigator**

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# Matthew A. Coogan
# Principal Investigator

- Director, The New England Transportation Institute
- Former Undersecretary of Transportation, Commonwealth of Massachusetts
- Project Director, I-90/I-93 Project
- Co-founder of CONEG Task Force on High Speed Rail
- Principal Investigator for 12 CRP Projects

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# ACRP Report 118 Oversight

**Christopher W. Jenks,** *Director, Cooperative Research Programs*
**Michael R. Salamone,** *ACRP Manager*
**Theresia H. Schatz,** *Senior Program Officer*
**Terri Baker,** *Senior Program Assistant*
**Eileen P. Delaney,** *Director of Publications*
**Maria Sabin Crawford,** *Editor*

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**Gene Corazzola,** *Greater Toronto Airports Authority, Toronto, ON*
**Linda S. Culp,** *San Diego Association of Governments, San Diego, CA*
**Roger Hooson,** *San Francisco International Airport, San Francisco, CA*
**Richard T. Roberts,** *New Jersey Transit Corporation, Newark, NJ*
**Danielle J. Rinsler,** *FAA Liaison*
**Jackie Sweatt-Essick,** *FAA Liaison*
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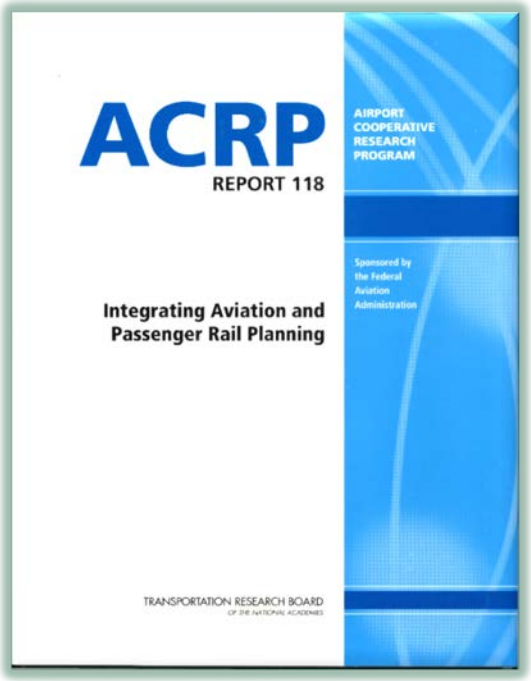
# ACRP Report 118 Research Team




**Resource Systems Group, Inc.**
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WITH

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**Daniel Brand**
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**Louis Thompson**
THOMPSON, GALENSON AND ASSOCIATES
Saratoga, CA

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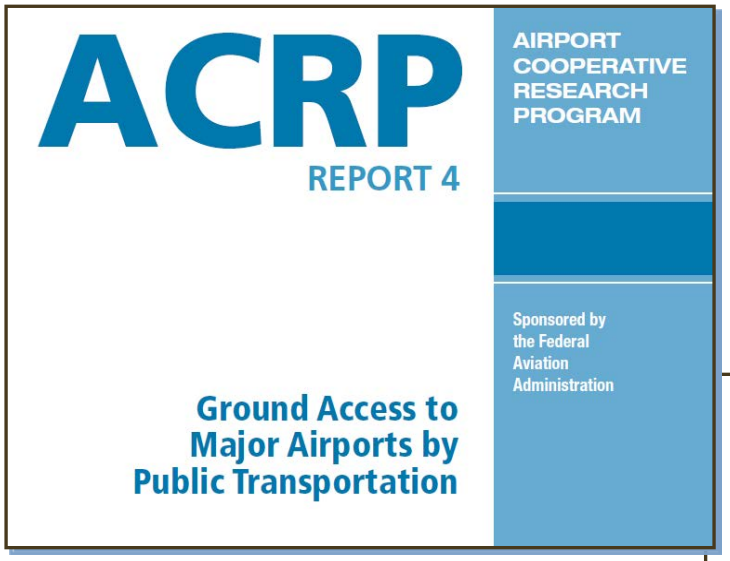
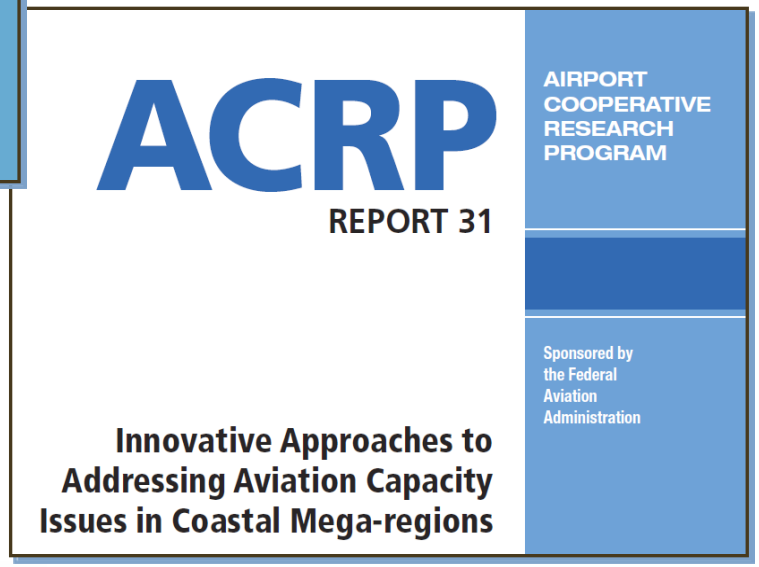
# “Integrating Aviation and Passenger Rail Planning”

## follows from

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# *Chapters of Report 118*

1: Introduction and Setting

***Rail in Complementary Mode***

2:European Air/Rail Stations Served by Long-Distance Rail

3: Connecting Airports with Long-Distance Rail in the US

***Rail in a Competitive Role***

4: Diversion from Air in Europe

5: Rail Diversion from Air in the United States

6: Air and Rail in the Midwest

7: The Role of Rail in Airport and System Planning in Northern California

8: Air and Rail Planning Together in San Diego

9: Federal and State Funding for Air/Rail Planning

10: Analytical Tools and Data Sources for Policy Planning

11: Air/Rail Diversion Model

12: Strategies for Integration of Air and Rail: Next Steps

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# Exploring the Integration of Air and Rail

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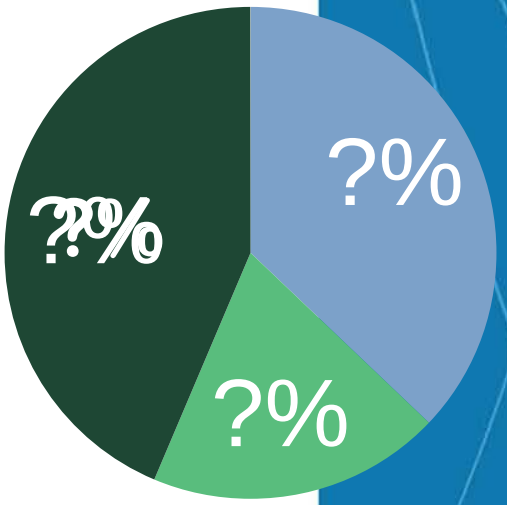
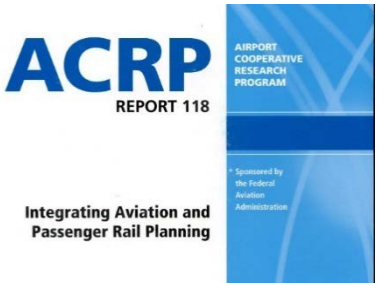
***Air is impacted by rail in three ways…***

**From diversion of trips from air**
**From metropolitan rail access to airports**
**From long distance rail access to airports**



# Rail in *a Competitive Mode* on Two Continents

- First, diversion from air to rail in Europe
- Second, diversion from air to rail in Northeast Corridor, USA

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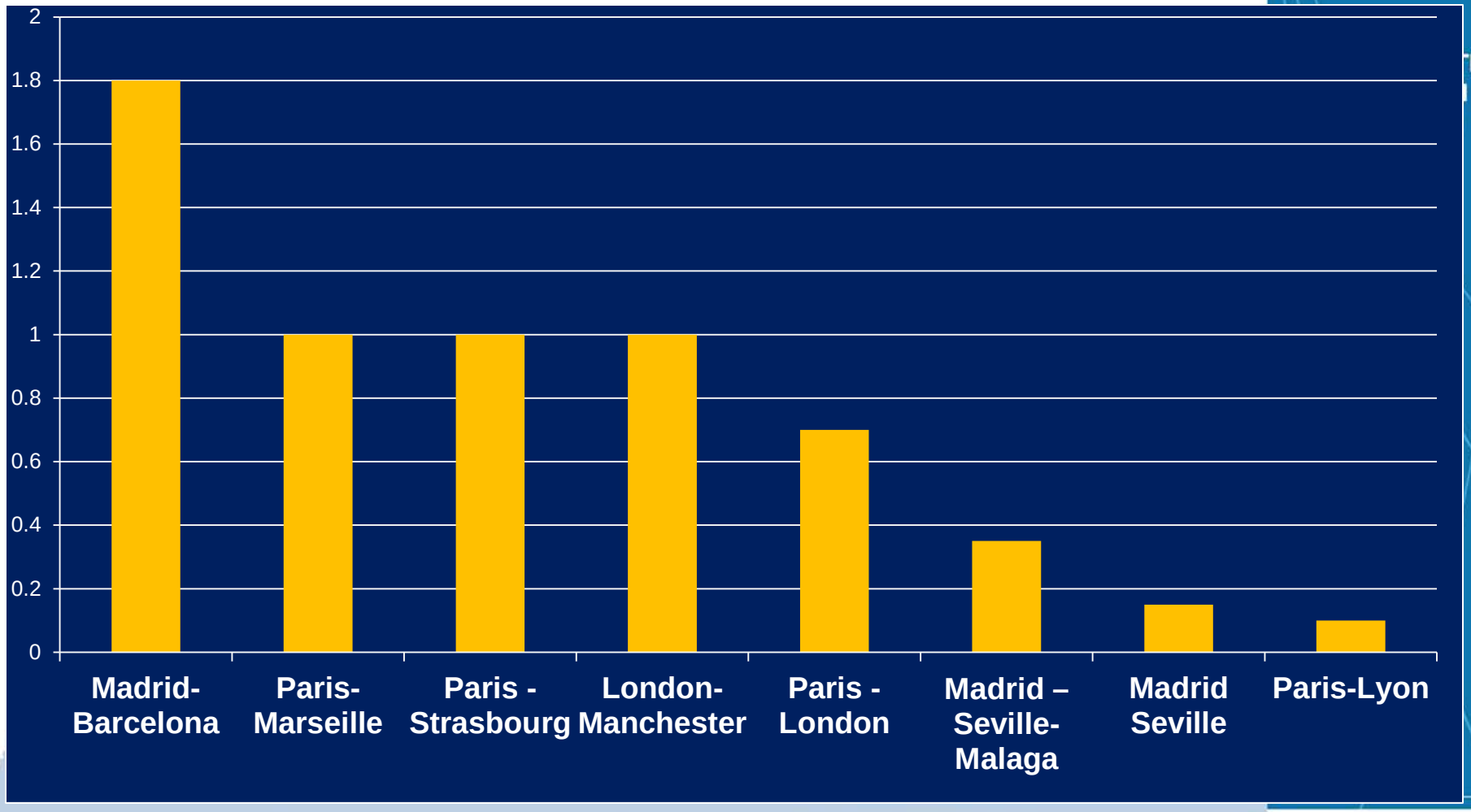
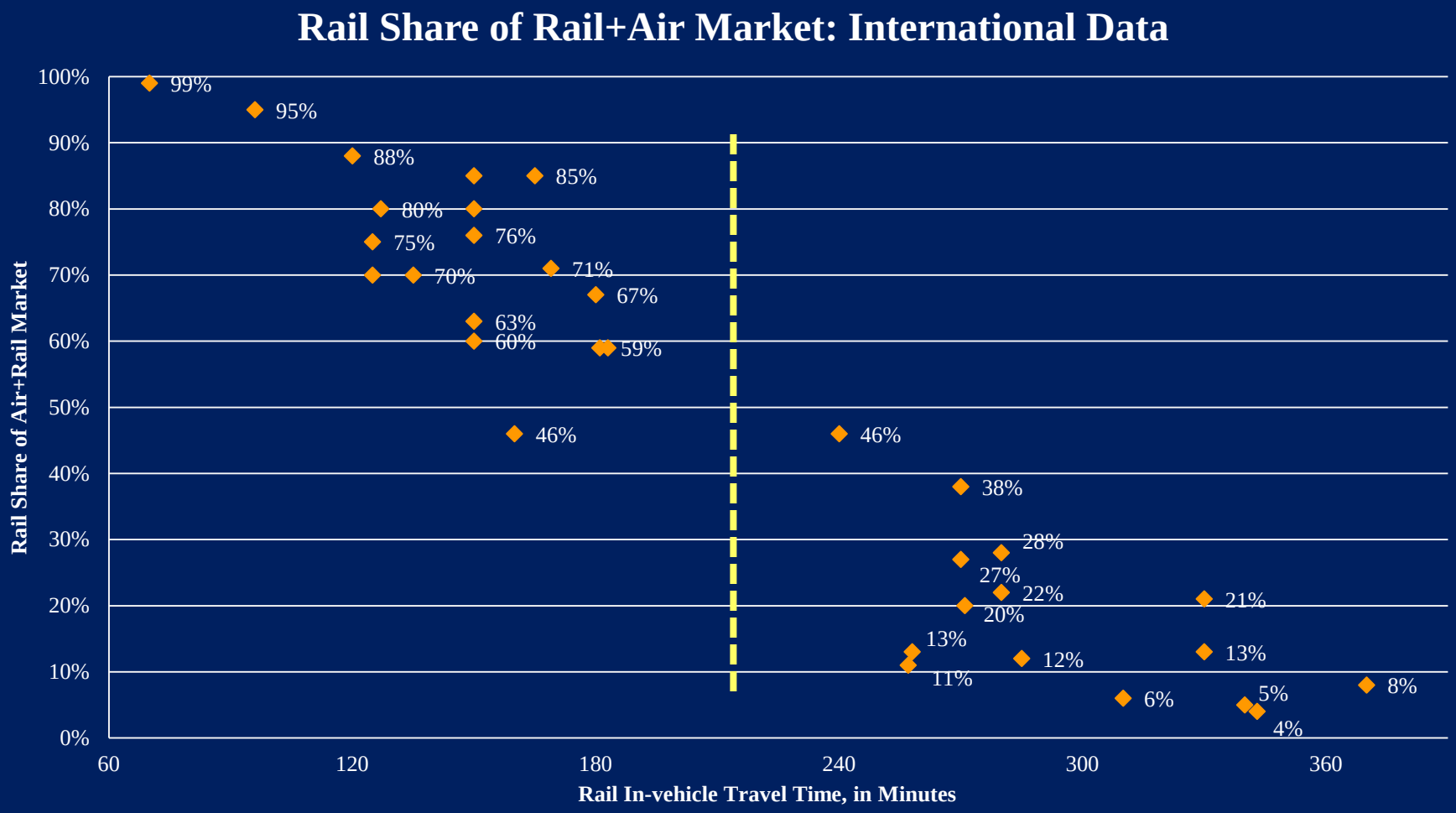
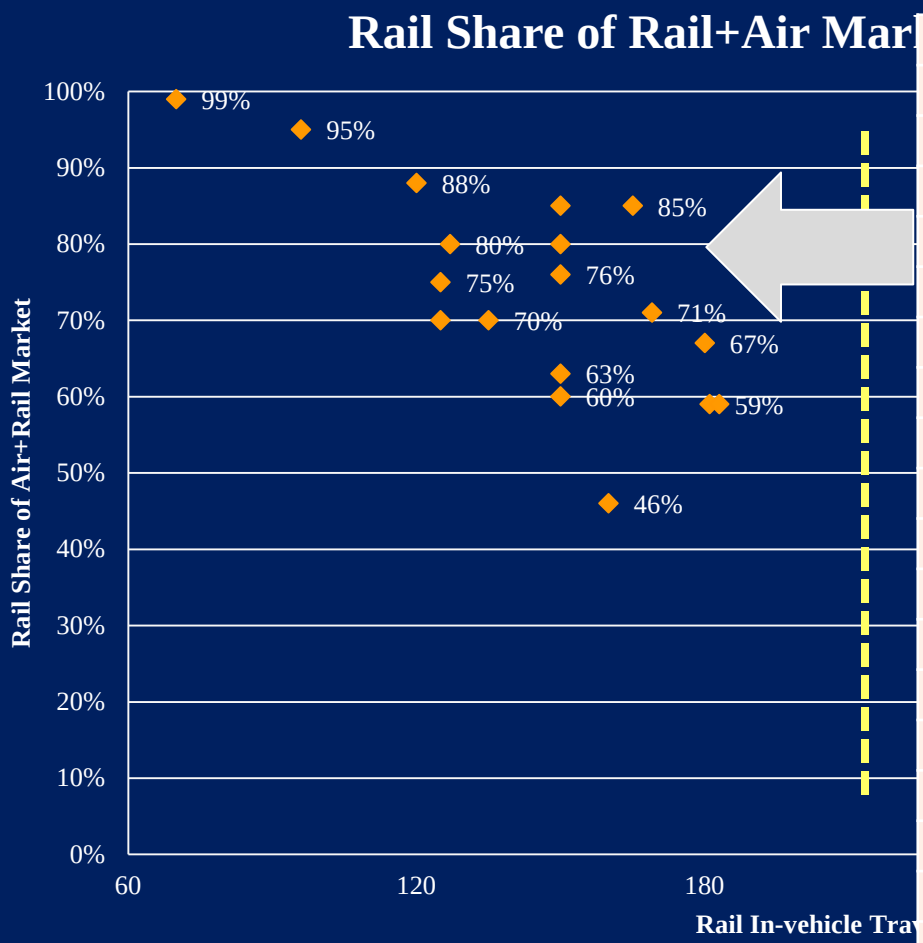
# In Europe, six million rail riders have been *diverted from air*

- Graph in millions of annual rail riders



## *Testing the 3 ½ hour rule of thumb….* *(220 minutes)*

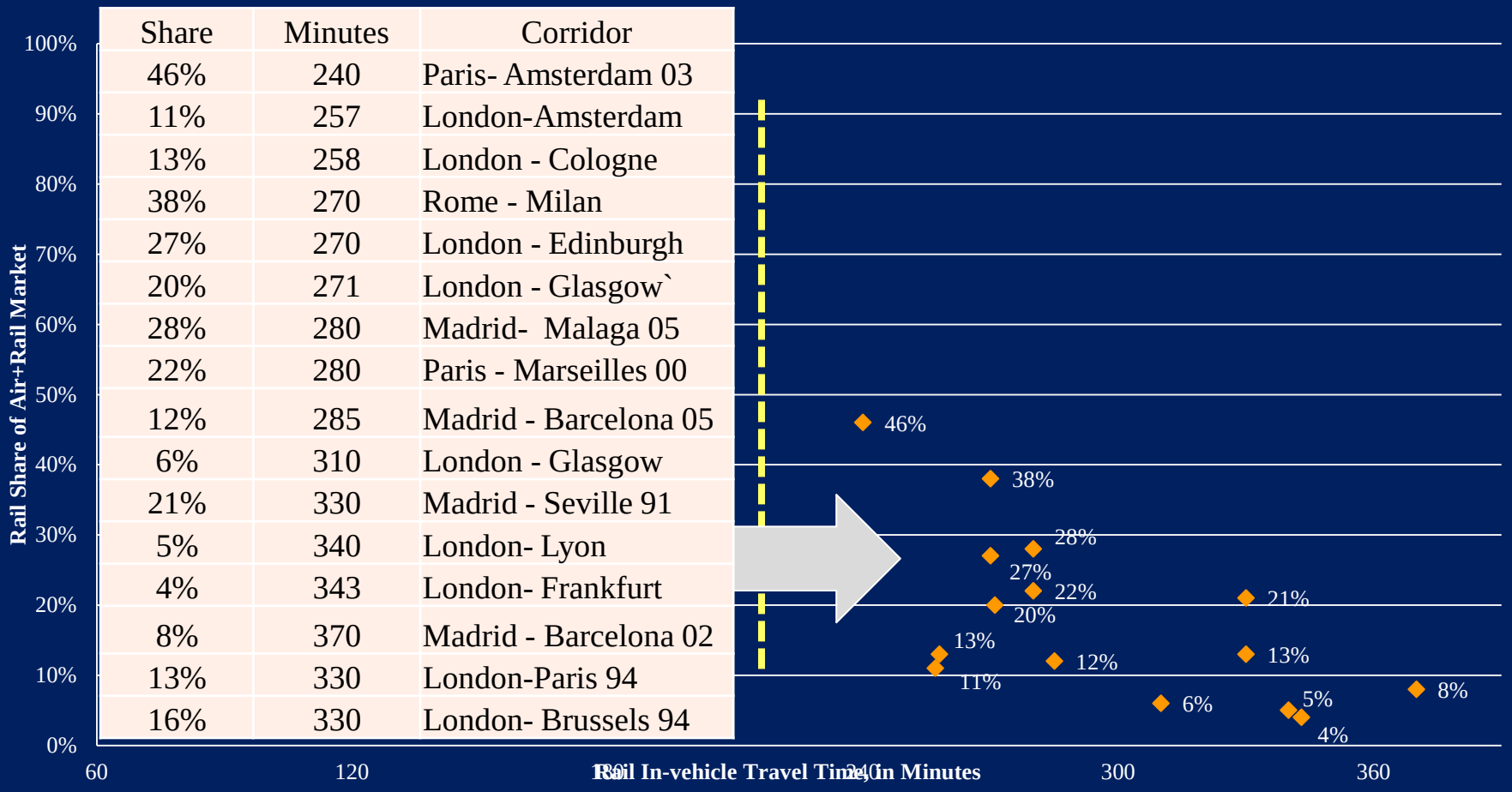





| Share | Minutes | Corridor |
|---|---|---|
| 99% | 70 | Frankfurt-Cologne |
| 95% | 96 | Paris- Brussels |
| 88% | 120 | Paris - Lyon |
| 75% | 125 | London -Brussels |
| 70% | 125 | Paris-Bordeaux |
| 80% | 127 | London-Manchester |
| 70% | 135 | London-Manchester 08 |
| 85% | 150 | Madrid-Seville |
| 80% | 150 | Madrid-Seville (1994) |
| 76% | 150 | London-Paris |
| 71% | 169 | Rome - Bologna |
| 63% | 150 | Madrid - Malaga |
| 60% | 150 | London - Manchester 04 |
| 46% | 160 | Madrid - Barcelona |
| 85% | 165 | Tokyo - Osaka |
| 67% | 180 | Paris-Marseilles |
| 59% | 181 | Stockholm- Gothenburg |
| 59% | 183 | London - Paris 03 |

# Rail Share of Rail+Air Market: International Data

| Share | Minutes | Corridor |
|---|---|---|
| 46% | 240 | Paris- Amsterdam 03 |
| 11% | 257 | London-Amsterdam |
| 13% | 258 | London - Cologne |
| 38% | 270 | Rome - Milan |
| 27% | 270 | London - Edinburgh |
| 20% | 271 | London - Glasgow` |
| 28% | 280 | Madrid- Malaga 05 |
| 22% | 280 | Paris - Marseilles 00 |
| 12% | 285 | Madrid - Barcelona 05 |
| 6% | 310 | London - Glasgow |
| 21% | 330 | Madrid - Seville 91 |
| 5% | 340 | London- Lyon |
| 4% | 343 | London- Frankfurt |
| 8% | 370 | Madrid - Barcelona 02 |
| 13% | 330 | London-Paris 94 |
| 16% | 330 | London- Brussels 94 |



# Rail in a Competitive Mode with Air: Europe

- Those city pairs with station to station trip time of under 3 ½ hours have mode share higher than 50%
- Those city pairs with station to station trip time of over 3 ½ hours have mode share lower than 50%

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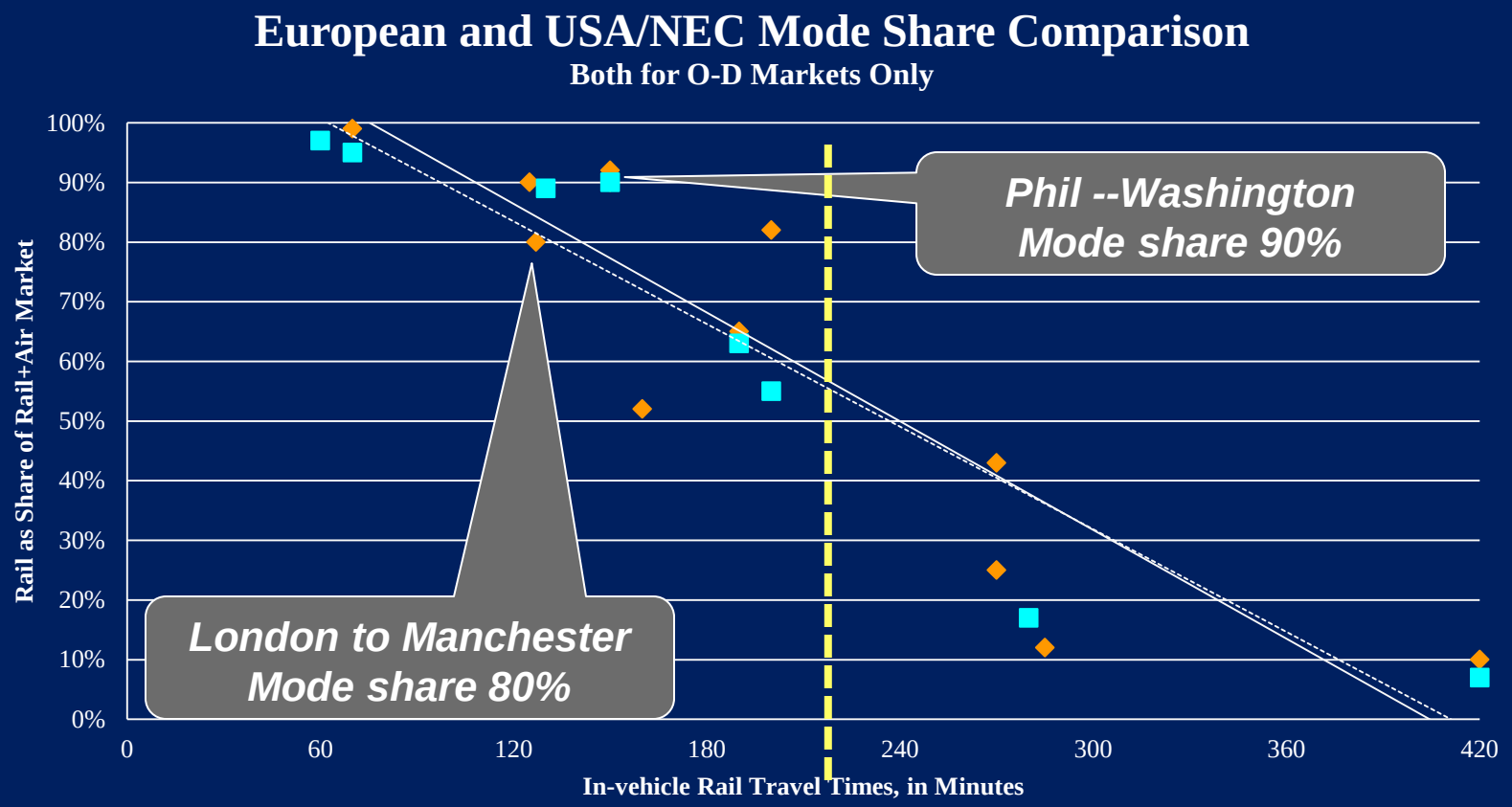
- Europe and NEC Rail Share of Air+Rail



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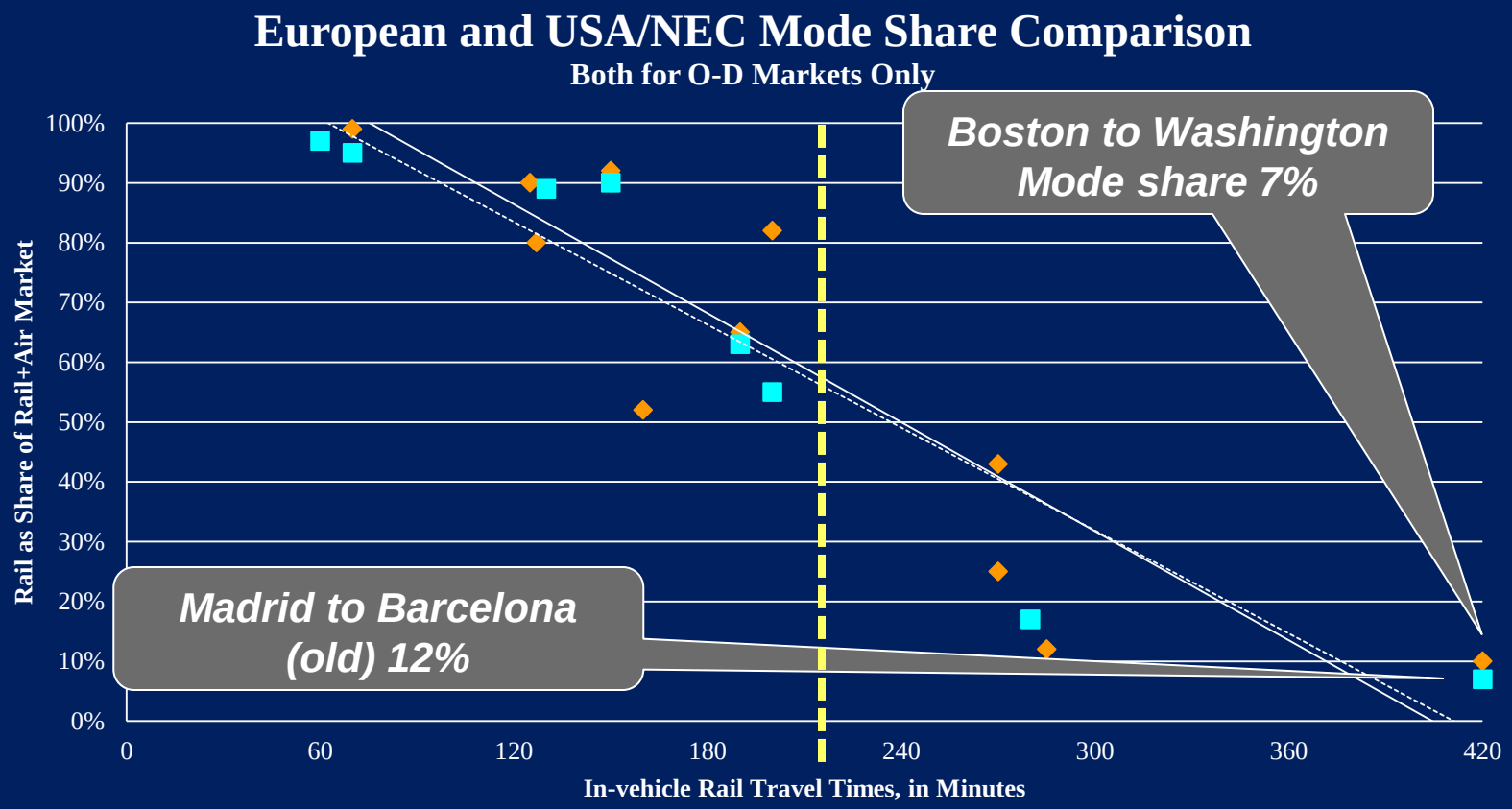

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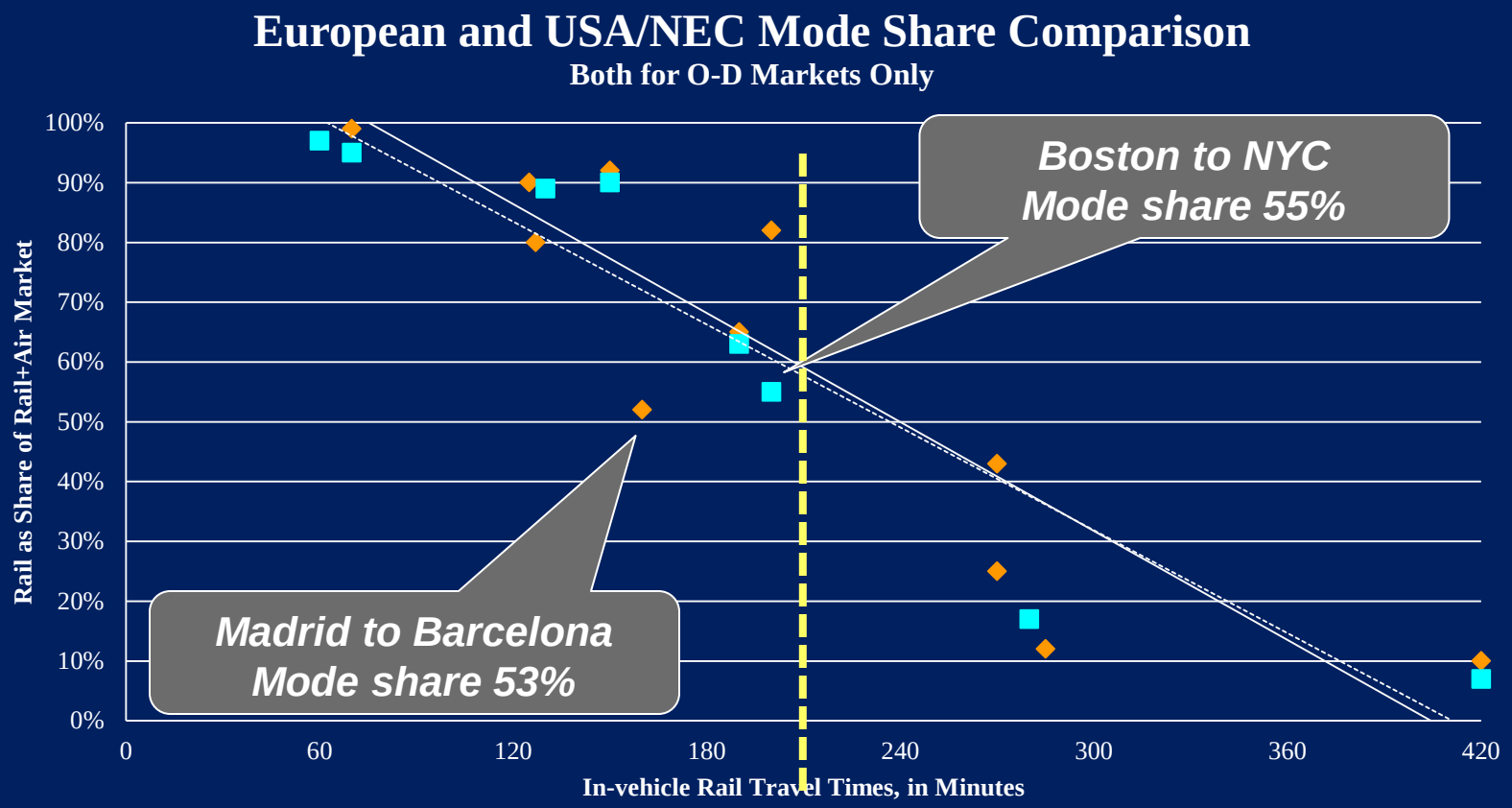

# Conclusion for Rail *in the Competitive Mode*

- **Amtrak/NEC rates of rail substitution are directly parallel to those of Europe**
- **When Americans are offered high quality rail, they choose it over air just like the Europeans.**
- **The market response of the airlines explains much of the variation in both continents**

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# Rail Complementarity: Scales of Impact of Air/rail intermodality?

**From metropolitan access to airports?**

**From long distance access to airports?**


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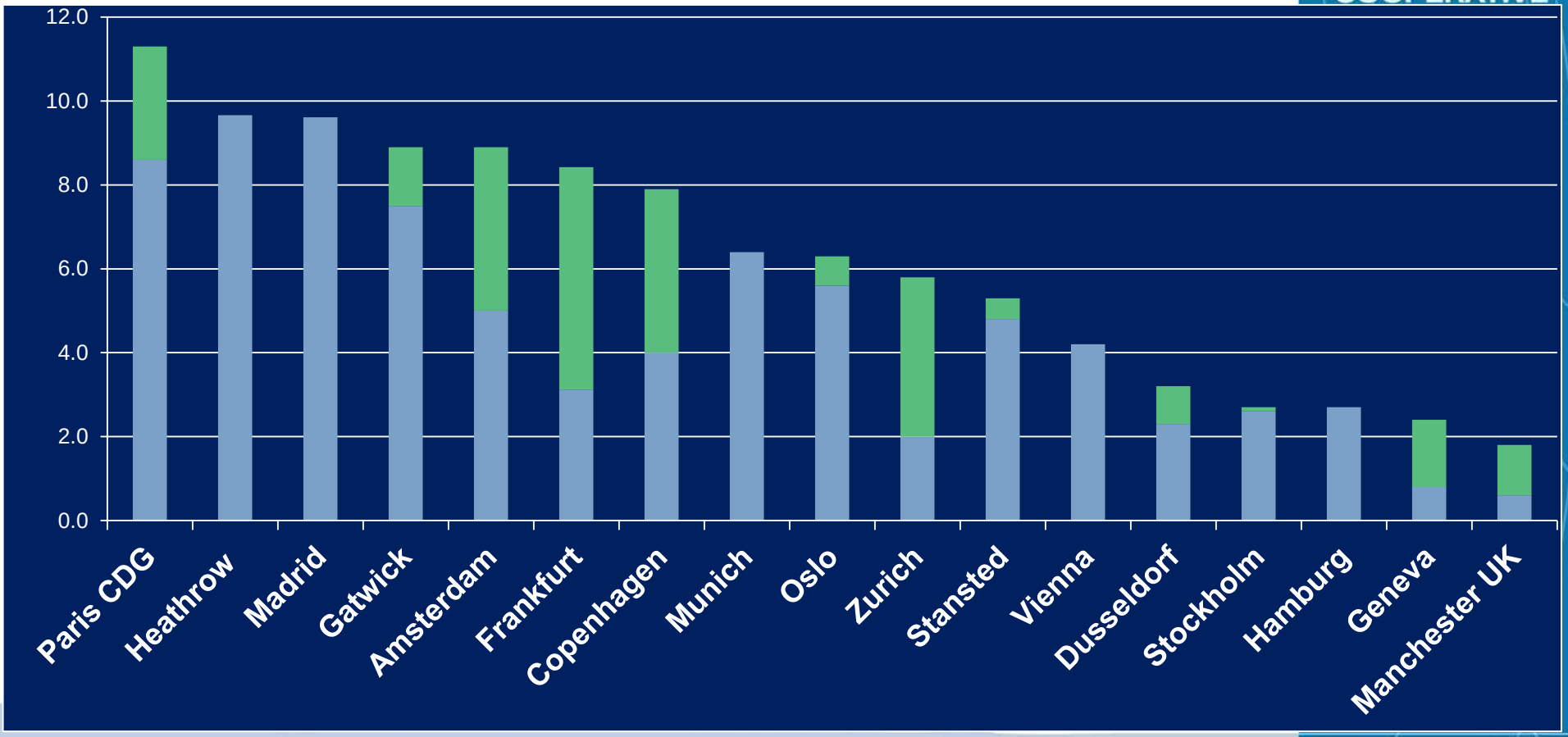
# How Many People Use Rail to European Airports?

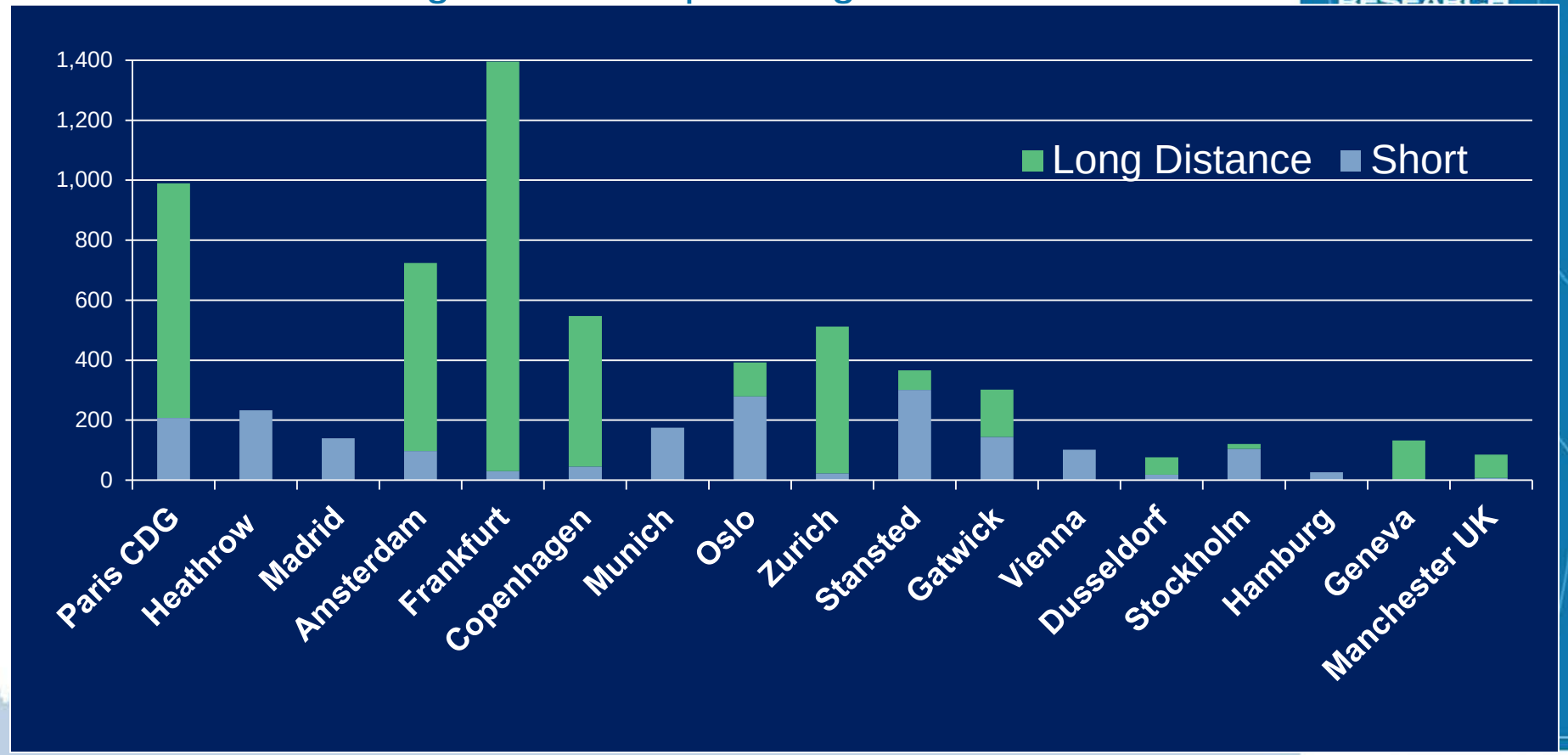
- *100 million* annual rail trips from 18 airports
  - 75% of them from metro origin
  - 25% from longer distance origins



# How Many Passenger Kilometers to Rail?

## 6.3 billion kilometers of travel to the 18 airports

- 30% from metro passengers
- 70% from longer distance passengers

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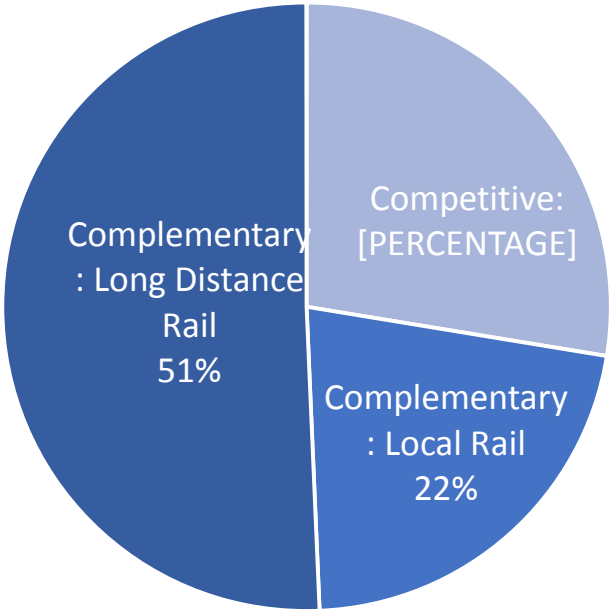
# Interaction between Air and Rail

Comparative Scale of Three Roles for Rail and Air




***Competitive= 27%***

**From diversion of trips from air**

***Complementary = 73%***

**From metropolitan rail access to airports**

**From long distance rail access to airports**

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# Long Distance Rail as Feeder to Airports

**In Europe there are five major successes in long distance rail access to airports:**

- Frankfurt
- Amsterdam
- Copenhagen
- Paris
- Zurich

***Complementary roles*** **make up more than 70% of total passenger kilometers of travel**

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# Conclusion:
# Interaction between Air and Rail

**From diversion of trips from air**

- This does occur in the American experience

**From metropolitan rail access to airports**

- This does occur in the American experience

**From long distance rail access to airports**

- *The has not yet occurred n the American experience*

*BUT WHAT WOULD BE THE MARKET SCALE IF IT DID OCCUR IN NORTH AMERICA?*

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# *Lessons from Hans Fakiner, in ACRP 118*

**In order to create "another Frankfurt…."**

1. **Airport must have international services that closer airports do not have**
2. **Airport must be located on rail lines with strong markets above and beyond the volumes from the airport**
    1. Not operating as a "stub terminal"
    2. Day-long service to major destinations relative to flight schedules…

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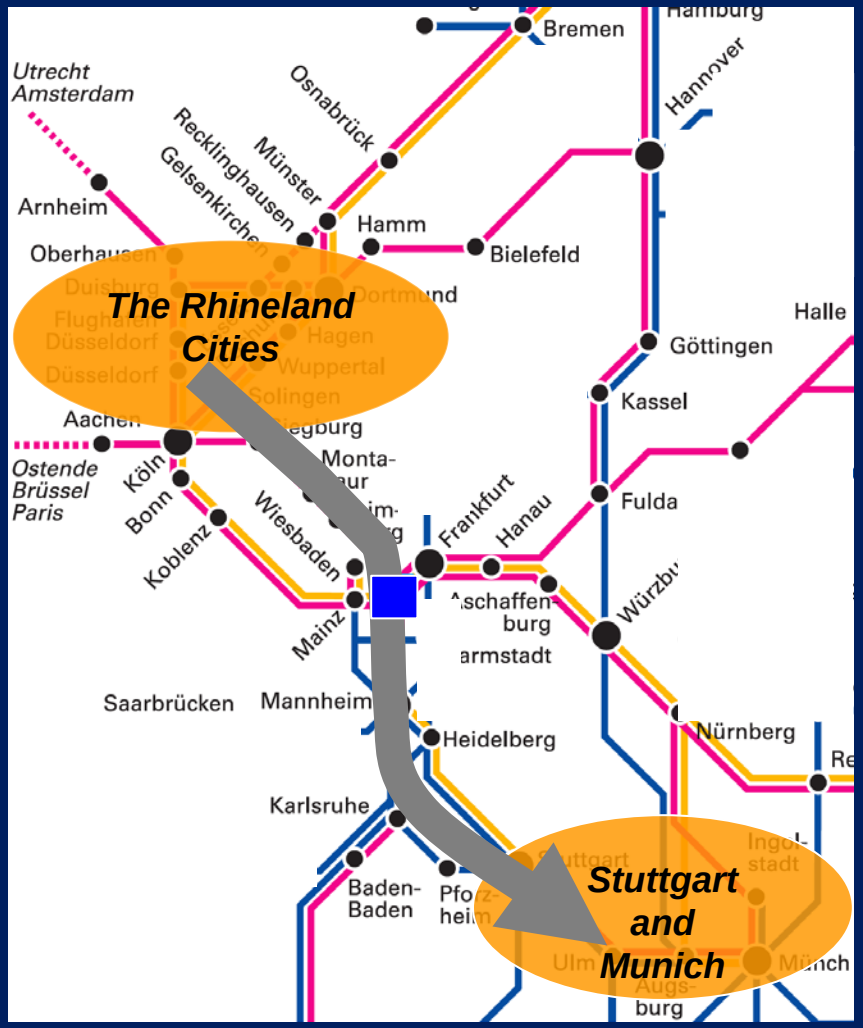
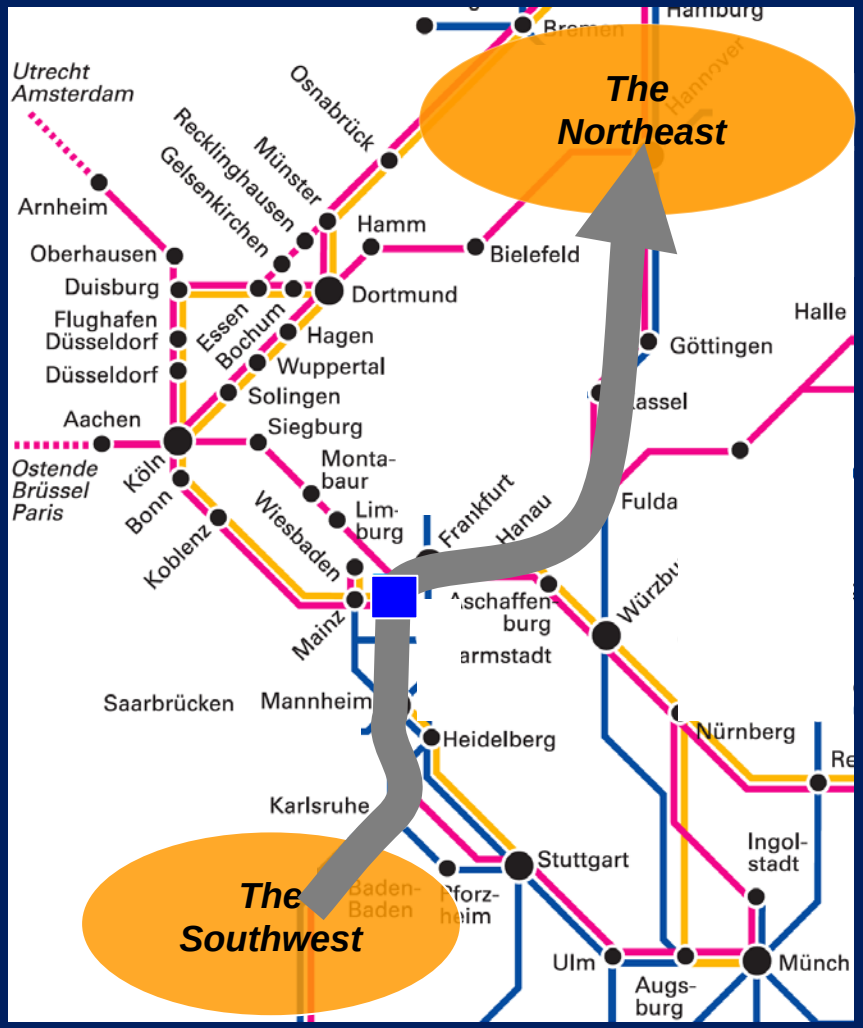
Airport must be located on strong rail route



Airport must be located on strong rail route



# Role of Long Distance Rail as Access to Airports

- **ACRP Report 118 shows that 22% of air travelers from Frankfurt arrive by long distance rail.**
- **At Paris CDG about 6% of air passengers arrive by long distance rail.**

***These are above and beyond those arriving by metropolitan rail***

**Table 2-2. Case study airports, ranked by mode share to long-distance rail.**

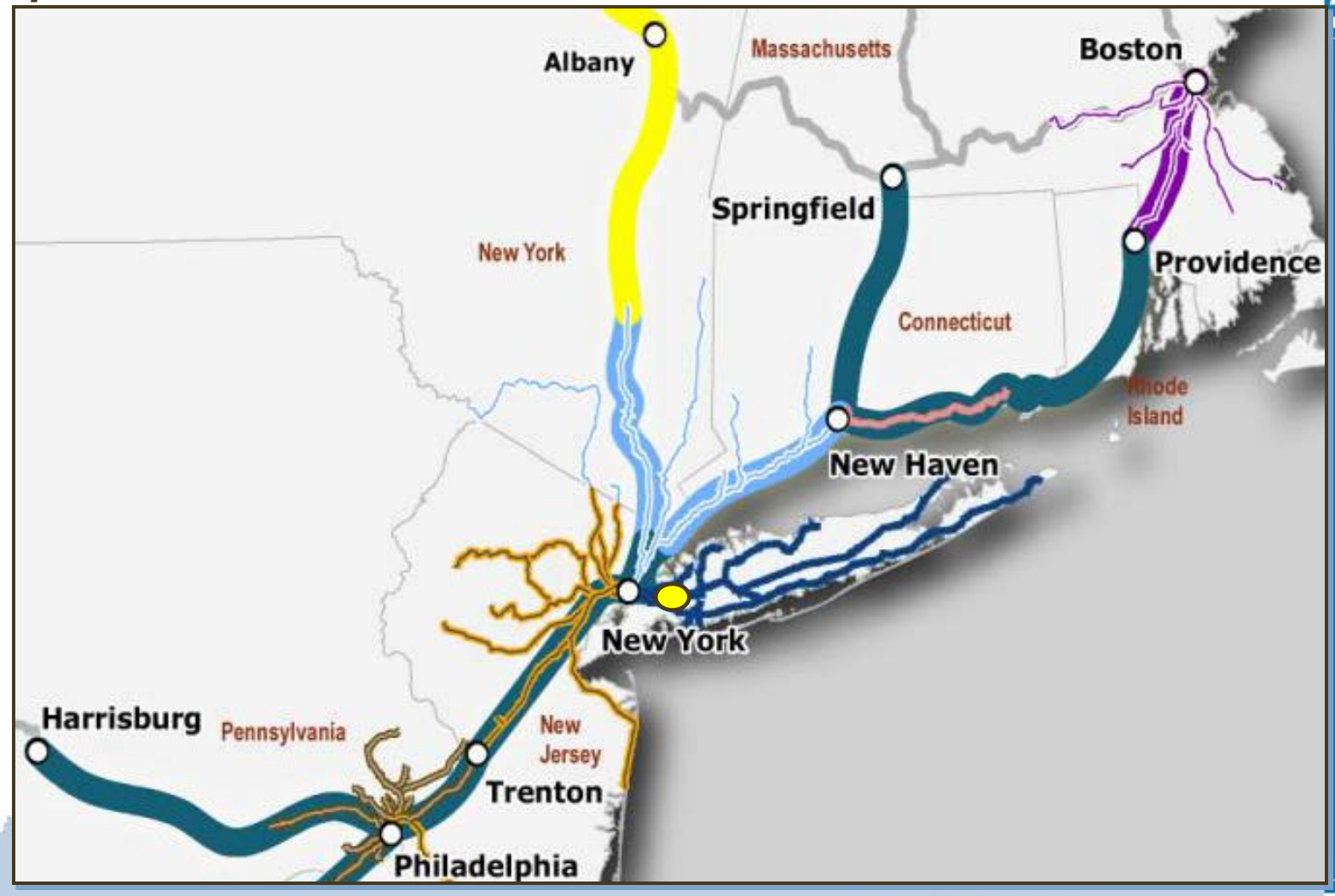
| | |
|---|---|
| Zurich | 25% |
| Copenhagen | 24% |
| Frankfurt | 22% |
| Geneva | 21% |
| Amsterdam | 16% |
| Manchester UK | 7% |
| Paris CDG | 6% |
| Dusseldorf | 5% |

# An American Case Study: JFK

**Billions of dollars have *already* been spent to improve intermodal connectivity in the corridor…**

**…the major infrastructure elements are already in place..**

***The rail infrastructure around JFK is massive, and in place…***

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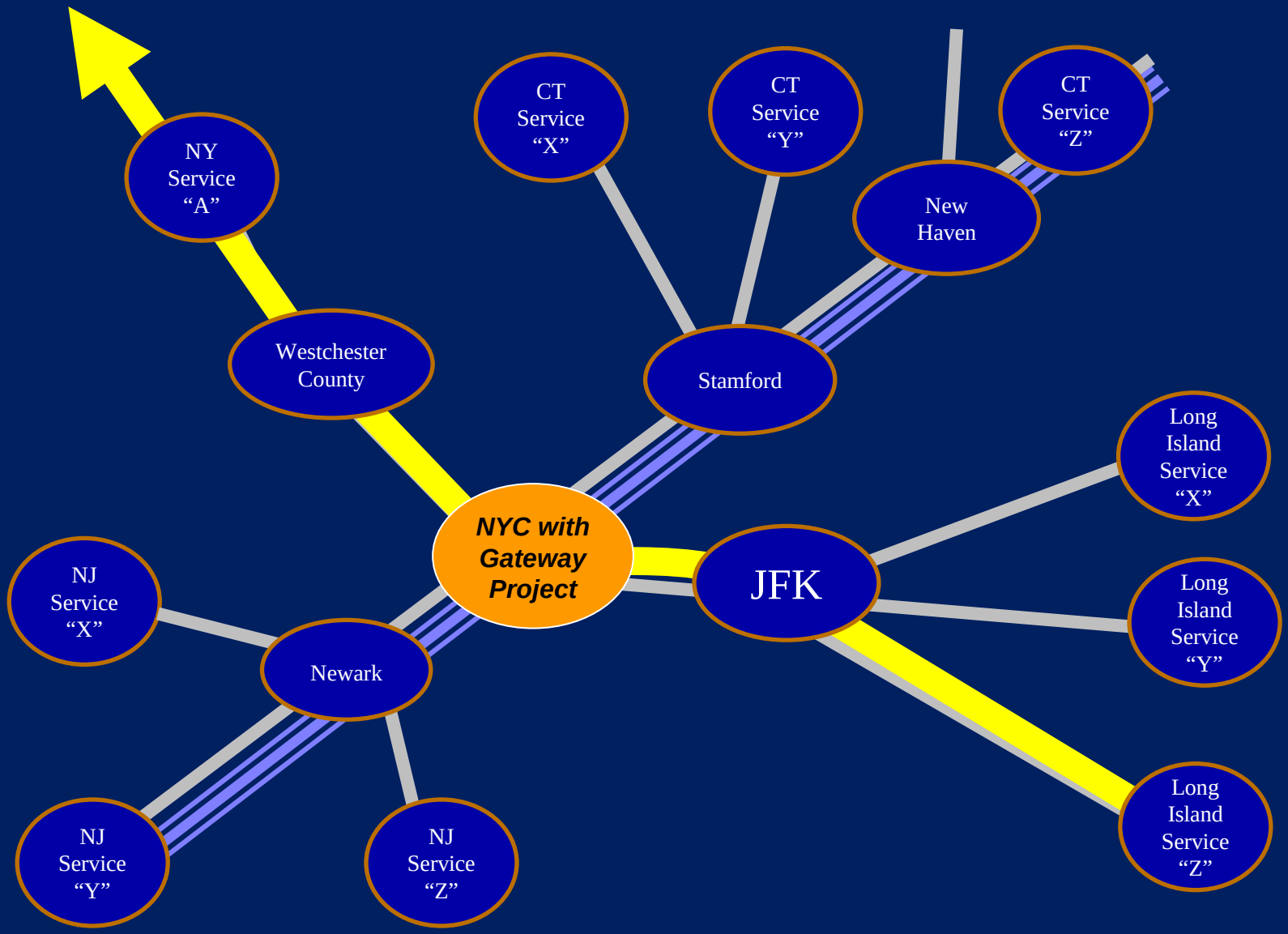
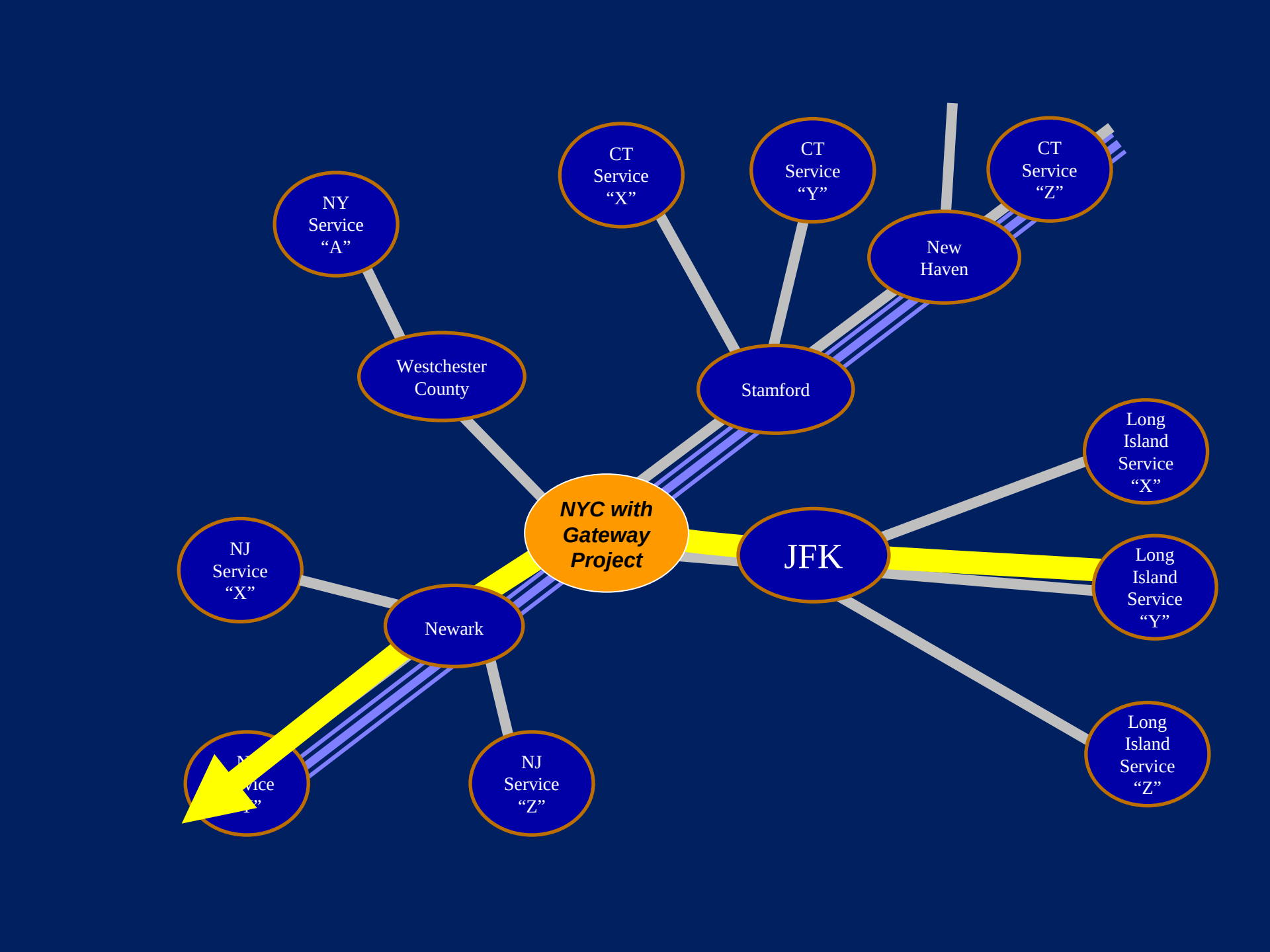
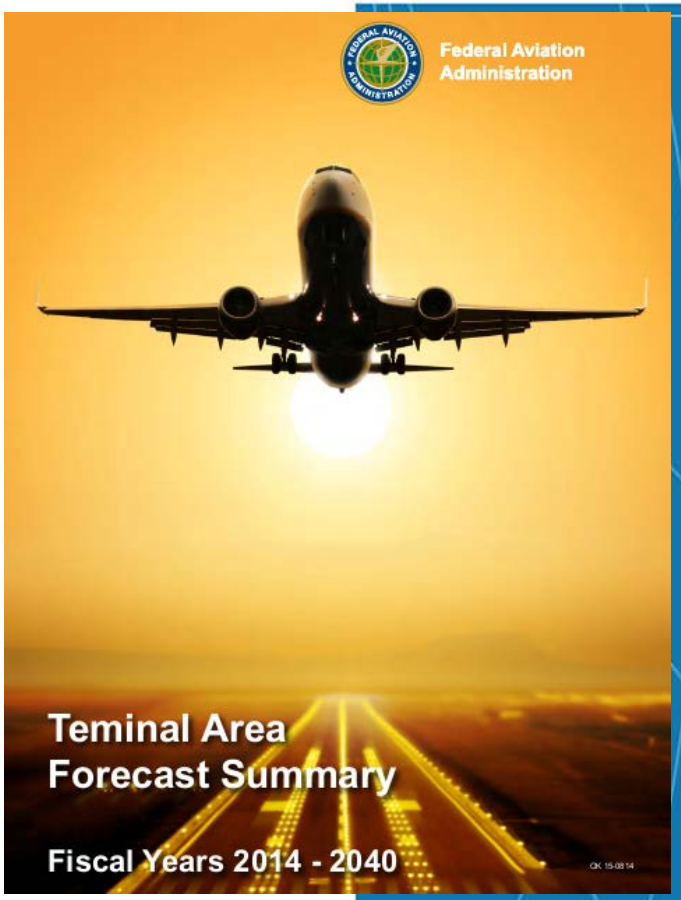

NY Service "A"
CT Service "X"
CT Service "Y"
CT Service "Z"
New Haven
Westchester County
Stamford
Long Island Service "X"
NJ Service "X"
NYC with Gateway Project
JFK
Long Island Service "Y"
Newark
Long Island Service "Z"
NJ Service "Y"
NJ Service "Z"


NY Service "A"
CT Service "X"
CT Service "Y"
CT Service "Z"
New Haven
Westchester County
Stamford
Long Island Service "X"
NJ Service "X"
NYC with Gateway Project
JFK
Long Island Service "Y"
Newark
Long Island Service "Z"
NJ Service "Z"

# Getting a Sense of Scale

- Say, JFK attracts 100 million pax in about 30 years
- Say, 55 million of them are non-connecting pax
- Assume we apply the Paris distance rail share, at between 6%

***This suggests a potential of 3.3 million <u>additional</u> airport travelers per year by rail***



# Is this a large market for rail?


***This suggests a potential of 3.3 <u>additional</u> airport travelers per year by rail***

- **Today, Amtrak carries about 1.7 million passengers between NYC and Boston**
- **South Station and Back Bay *together* are about 2 million**

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# Recap: Mode Share of Long Distance Rail to Airports

- **ACRP Report 118 shows that 22% of air travelers from Frankfurt arrive by long distance rail.**
- **At Paris CDG about 6% of air passengers arrive by long distance rail.**

***These are above and beyond those arriving by metropolitan rail***

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# *Hans Fakiner's Criteria – Applied to JFK*

**In order to create "another Frankfurt…."**

1. **Airport must have international services that closer airports do not have**
2. **Airport must be located on rail lines with strong markets above and beyond the volumes from the airport**
   1. Not operating as a "stub terminal"
   2. Day-long service to major destinations relative to flight schedules…

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# Connecting SFO to Rail

**Millbrae-SFO Station is located in an area of massive rail investment.**

***Potential Services serving airport***

***8 BART per hour***

***6 CALTRAIN per hour***

***(?) Long distance HSR***

***Potentially, among the best airport headways in the world***


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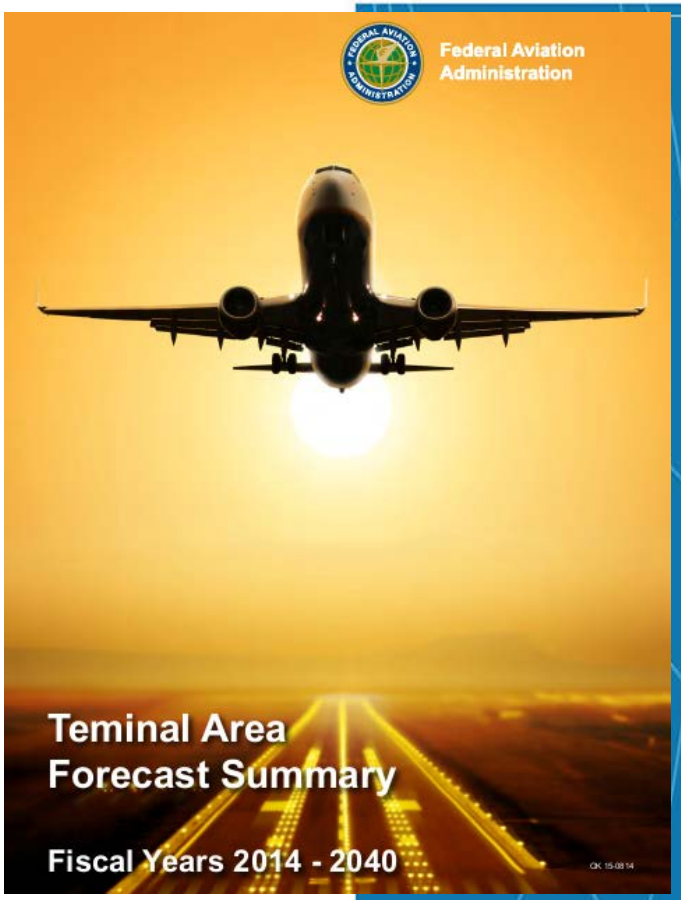
# A Sense of Scale for SF0

**Say, SFO attracts 75 million pax in about 30 years**

**Say, 40 million of them are non-connecting pax**

**Assume we apply the Paris long distance rail share, at 6%**

***This implies a potential of 2.4 million <u>additional</u> airport travelers per year by rail***



# Implications for US Policy

- **In Europe, rail is a strong competitor to air in small number of markets**
  - US travelers *also* choose rail in similar market
- **In Europe, rail plays a *bigger* role as a complement to air than as a competitor to air**
  - Presently Americans do not access airports by long distance rail
- **If rail systems were to play a bigger complementary role in the United States, they could make access….**
  - More reliable
  - More redundant, and
  - *More resilient*

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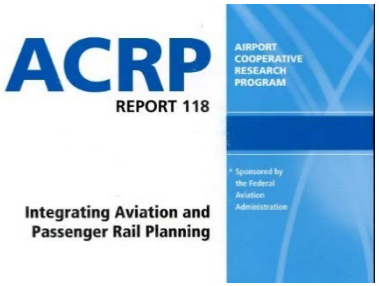
# Thanks to..

**The authors of ACRP Report 118**

**The Airport Cooperative Research Program**

**..and everyone who has supported this research at FRA, FAA and DOT**

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# ACRP Report 146: Commercial Ground Transportation at Airports: Best Practices

**Peter Mandle**

**Inter*VISTAS* Consulting, Inc.**

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# Peter Mandle
## Principal Investigator

- **Executive Vice President, Inter*VISTAS* Consulting, Inc.**
- **Prior Chair of TRB Committee on Airport Terminals and Ground Access, and the TRB Aviation Group**
- **Over 30 years of experience in airport ground transportation planning and consulting**

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San Diego County Regional Airport Authority (Chair)

**Fred Baer**
Fred Baer Consulting

**Larry Bowers**
Salt Lake City Department of Airports

**Donald Eames**
The Airport Shuttle

**Brian D. McKeehan**
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TRB Liaison

**Theresia Schatz**
ACRP Senior Program Officer

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**Stephanie Box**
Inter*VISTAS* Consulting*

**Ray Mundy**
Tennessee Transportation
& Logistics Foundation

**Lynn Richardson**
GateKeeper Systems

**Bernida Reagan**
Merriwether & Williams
Insurance Services

* Research conducted while employed by LeighFisher

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# Why was this Research Needed?

**Airport staff devote significant time to administrating, regulating, monitoring, and enforcing the companies, drivers, and vehicles**

**Airports encounter significant challenges:**

- Diverse customer expectations
- Competitive businesses environment
- Large number of small, locally owned businesses
- Independent owners-vs. employees
- Lack of municipal enforcement staff
- Influence of local politics

**No single source was available describing and comparing the best practices employed at airports**

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# Overview of Research Product

- Describes best practices used successfully to provide, procure, manage, regulate, enforce, and monitor commercial ground transportation services at airports
- Helps ensure that service is provided safely, comfortably, efficiently, economically, and in an environmentally sensitive and user friendly manner
- Intended for use by airport professionals, ground transportation providers, and others seeking to improve customer service

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# Guidebook Structure

**Part 1** Understanding the Industry and Potential Solutions

**Part 2** Selecting the Appropriate Solution

**Part 3** Selling and Implementing the Solution

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# What Services are Addressed?

- Taxicabs
- Limousines
- Ride-booking Services/TNCs
- Shared-Ride Vans
- Courtesy Vehicles
- Scheduled Buses and Vans
- Chartered Buses and Vans

Excludes: Rail and other forms of public transit, delivery vehicles, airport-operated shuttles, and private vehicles.

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# Part 1: Understanding the Industry

1. Overview of the Guidebook
2. Establishing Goals and Policies of the Airports GT Program
3. Expectations of Customers, Airport Management, Providers, and Others
4. Operations of Commercial Ground Transportation in General
5. Operations of Commercial Ground Transportation at Airports
6. Regulation and Enforcement of Commercial Ground Transportation on Airports
7. Role of Small and Disadvantaged Business Enterprises

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# Part 2: Selecting the Appropriate Solution

**Chapter 8 discusses potential commercial ground transportation solutions:**

- **Detailed best practices for each mode**
- **Examples of best practices**
- **Environmental initiatives**
- **Types and examples of creative boarding areas**

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# Taxicabs

A1. Vehicle Standards
A2. Driver Standards
A3. Fee Collection
A4. Addressing Excessive Taxicabs/Long Driver Waits
A5. Taxicab Rotation System
A6. Addressing Insufficient Taxicabs/Long Customer Waits
A7. Short Trip Procedures
A8. Dispatcher/Starter Responsibilities
A9. Processes for Communicating with Drivers
A10. Driver's Lounge
A11. Driver Training Programs
A12. Enforcement
A13. Bid vs. Proposal
A14. One, Two, or Three Concessionaires
A15. Business Arrangements
A16. Oversight/Administration of Contract

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# Taxicabs: Exclusive vs. Open Access Operational Model

| Exclusive Access Operational Model | Open Access Operational Model |
|---|---|
| Only contracted companies can pickup on-demand customers at the airport | Open to all licensed vehicles |
| Easier for airport staff to manage: few points of contact | More difficult to manage: interact with all drivers and companies |
| More trips per driver | Fewer trips per driver |
| Higher revenue to drivers and airport | Lower revenue to drivers and airport |
| Higher quality customer service | Lower quality customer service |
| Easily enforceable dress code/driver behavior | More difficult to enforce dress code/driver behavior |
| More “political” issues | Fewer “political” issues |

# Limousines and Ride-booking/TNCs

## B. Limousines

- B1. Fee Collection
- B2. Control of Drivers and Vehicles
- B3. Controlling Illegal Solicitation of Arriving Airline Passengers
- B4. On-Demand Limousine Services

## C. TNCs

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# Other Modes


**D. Shared-Ride Vans**

- D1. Open Access System
- D2. Exclusive or Semi-Exclusive Access
- D3. Vehicle and Driver Standards
- D4. Customer Service Standards

**E. Courtesy Vehicles**

**F. Scheduled Buses and Van**

**G. Chartered Buses and Vans**

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# Other Topics

H. Supporting Environmental Goals and Objectives

I. Creative Passenger Boarding Areas




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# Selecting the Appropriate Best Practice for an Airport

- **When selecting a best practice consider unique goals, resources, and customer characteristics of the airport**
- **Guidebook contains five charts comparing how each best practice:**
  1. Enhances the experience of the airport customer
  2. Minimizes required staff time and airport resources
  3. Supports airport/regional environmental and sustainability objectives
  4. Provides an environment allowing drivers to earn a fair wage and other business owners to receive a reasonable ROI
  5. Allows the airport to recover its costs and, to the extent possible, increase airport revenues consistent with the other goals

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# Selecting the Appropriate Best Practice for an Airport

| Table 8-3<br>Ability to minimize required staff time and airport resources | | Minimize required staff time and airport resources | | | | |
|---|---|---|---|---|---|---|
| | | Very positive | Somewhat positive | Neutral | Somewhat negative | Very negative |
| **B. Limousines** | | | | | | |
| B1 | Fee Collection | | ● | | | |
| B2 | Control of Drivers and Vehicles | | ● | | | |
| B3 | Controlling Illegal Solicitation of Arriving Airline Passengers | | | | ● | |
| B4 | On-Demand Limousine Services | | | | ● | |
| **D. Shared-Ride Services** | | | | | | |
| D1 | Open Access Systems | | | | | ● |
| D2 | Exclusive or Semi-Exclusive Access | ● | | | | |
| D3 | Vehicle and Driver Standards | | ● | | | |
| D4 | Customer Service Standards | | ● | | | |

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# Part 3: Selling and Implementing the Solution

**Chapter 9: Supporting Technologies**

**Chapter 10: Selling and Implementing the Solution**

**Appendices**

- **A. Acronyms**
- **B. Glossary**
- **C. Annotated Bibliography**
- **D. Participating Airports**
- **E. Sample RFPs and RFQs***
- **F. Sample Rules and Regulations***
- **G. Sample Contracts***
- **H. Sample TNC Permits***

* Accessible on-line only

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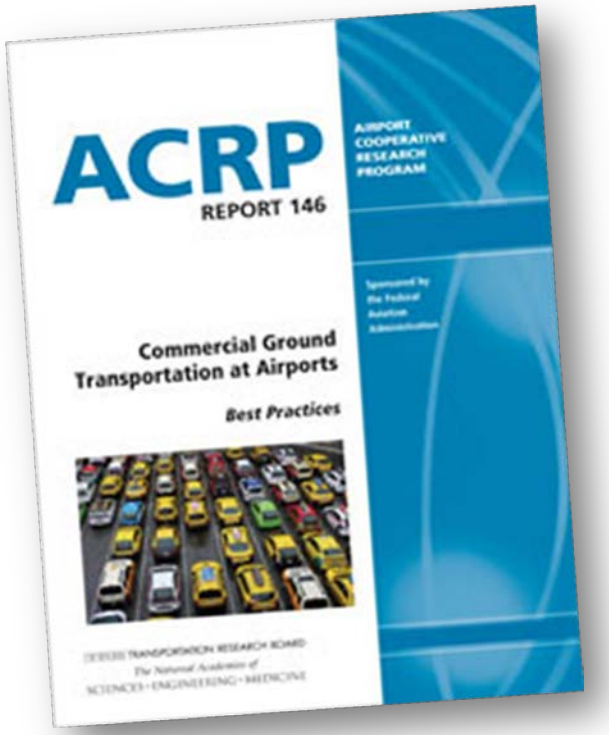
# For additional information:




**ACRP Report 146*:*** *Commercial Ground Transportation at Airports: Best Practices*

http://www.trb.org/main/blurbs/173350.aspx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