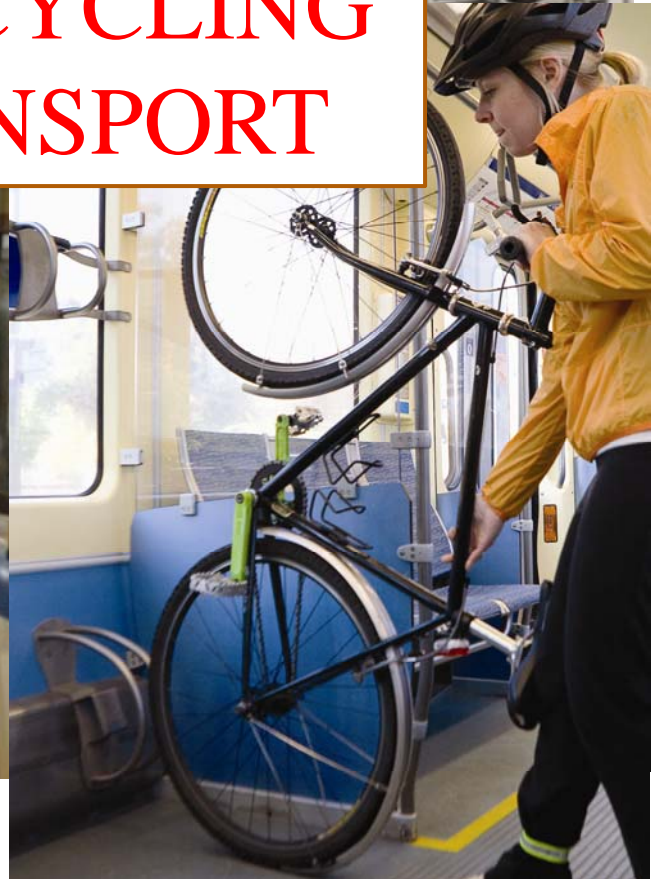




INTEGRATION OF CYCLING WITH PUBLIC TRANSPORT



Ralph Buehler, VirginiaTech

Bicycling and Public Transport: Perfect Together?

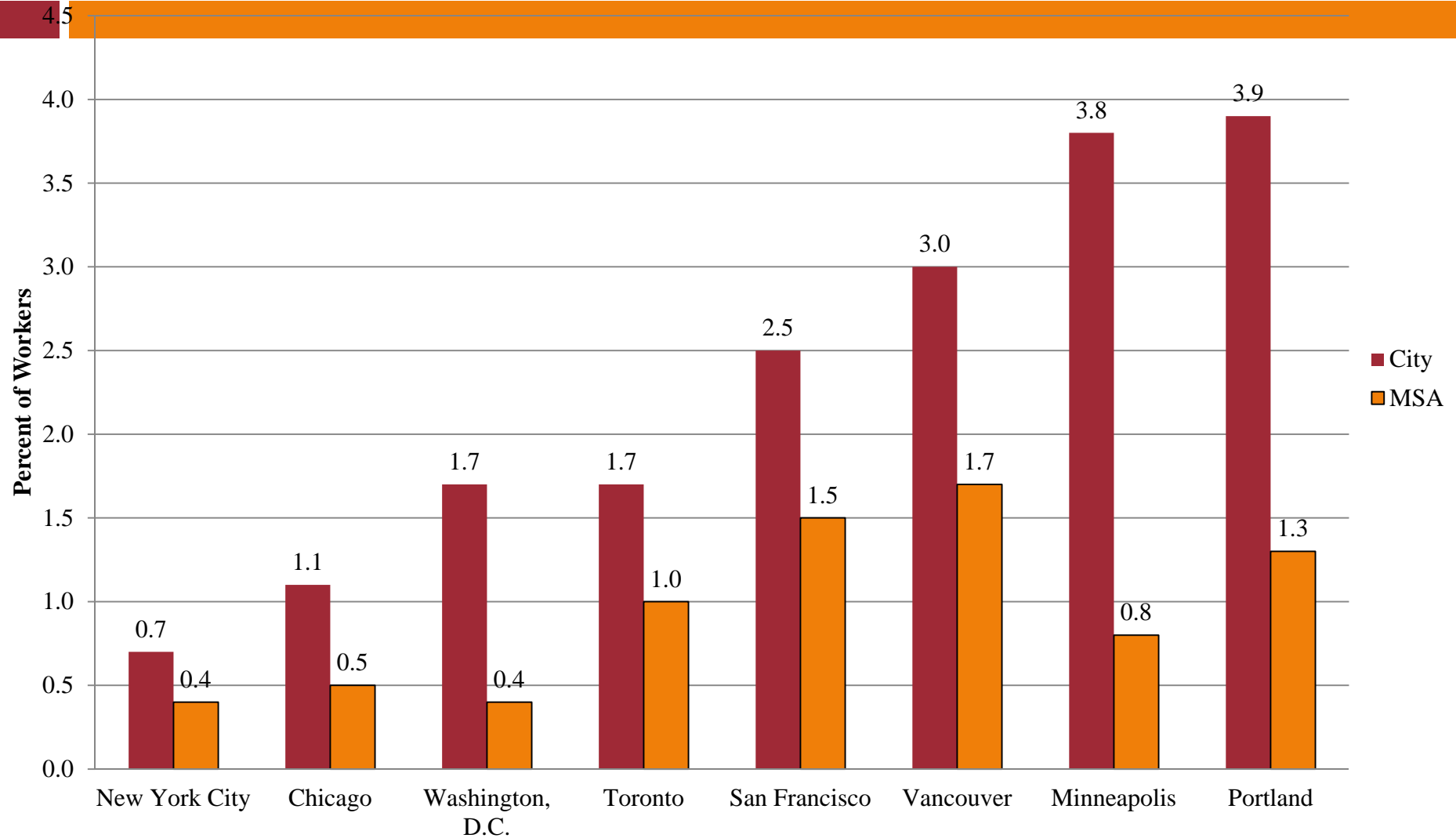
•Synergies:

- Cycling extends catchment areas of transit stops far beyond walking range**
- Much cheaper than park and ride for cars**
- Transit complements cycling by overcoming long distances, physical barriers, bad weather, or mechanical failure**

•Rivalries and conflicts:

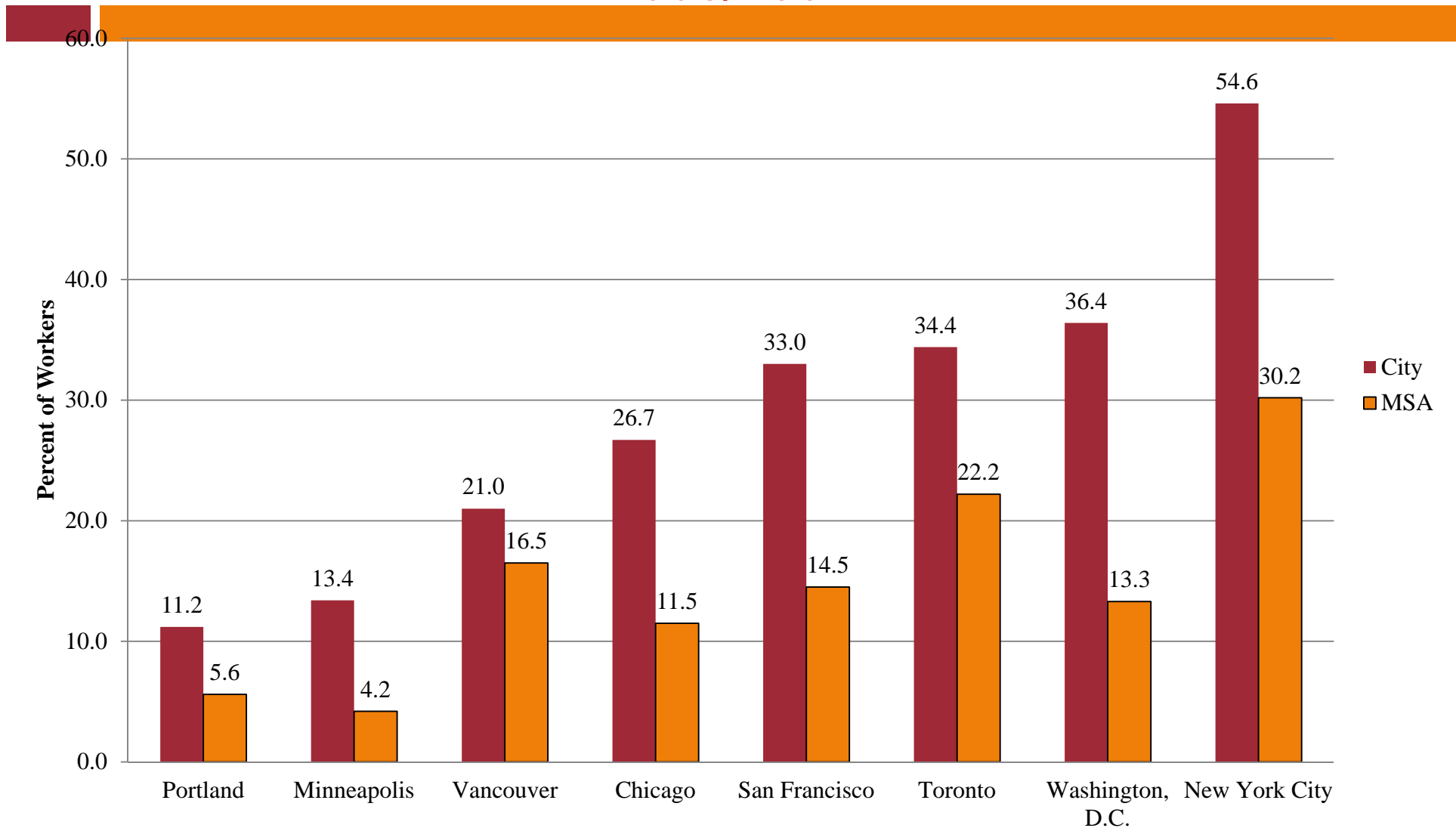
- Limited space on crowded peak-hour transit vehicles**
 - Cycling substitutes for public transport over short distances**
- Most studies find mutually beneficial overall, but much more research needed**

Share of Workers Commuting by Bicycle in US and Canadian Cities and Metropolitan Areas, 2006/2007



Sources: U.S. Census Bureau (2008) and Statistics Canada (2008)

Share of Workers Riding Transit in US and Canadian Cities and Metropolitan Areas, 2006/2007



Sources: U.S. Census Bureau (2008) and Statistics Canada (2008)

Types of Bike-Transit Integration



- ❑ **Bike parking at rail stations and bus stops**
- ❑ Multi-functional, full service bike stations
- ❑ Bikes on board buses and trains, usually on rail vehicles, often with special provisions
- ❑ Bike Rental at or Near Stations
- ❑ Bike paths, lanes, and on-street bike routes that lead to public transit stations and thus facilitate bike's role as feeder to transit

Main form of bike-transit integration in Europe for decades



Photo: Eva Heinen

Bike racks and lockers at Metrorail Station in Virginia



Photo: Paul DeMaio

Indoor bike parking in Chicago



Photo : Chicago Transit Authority

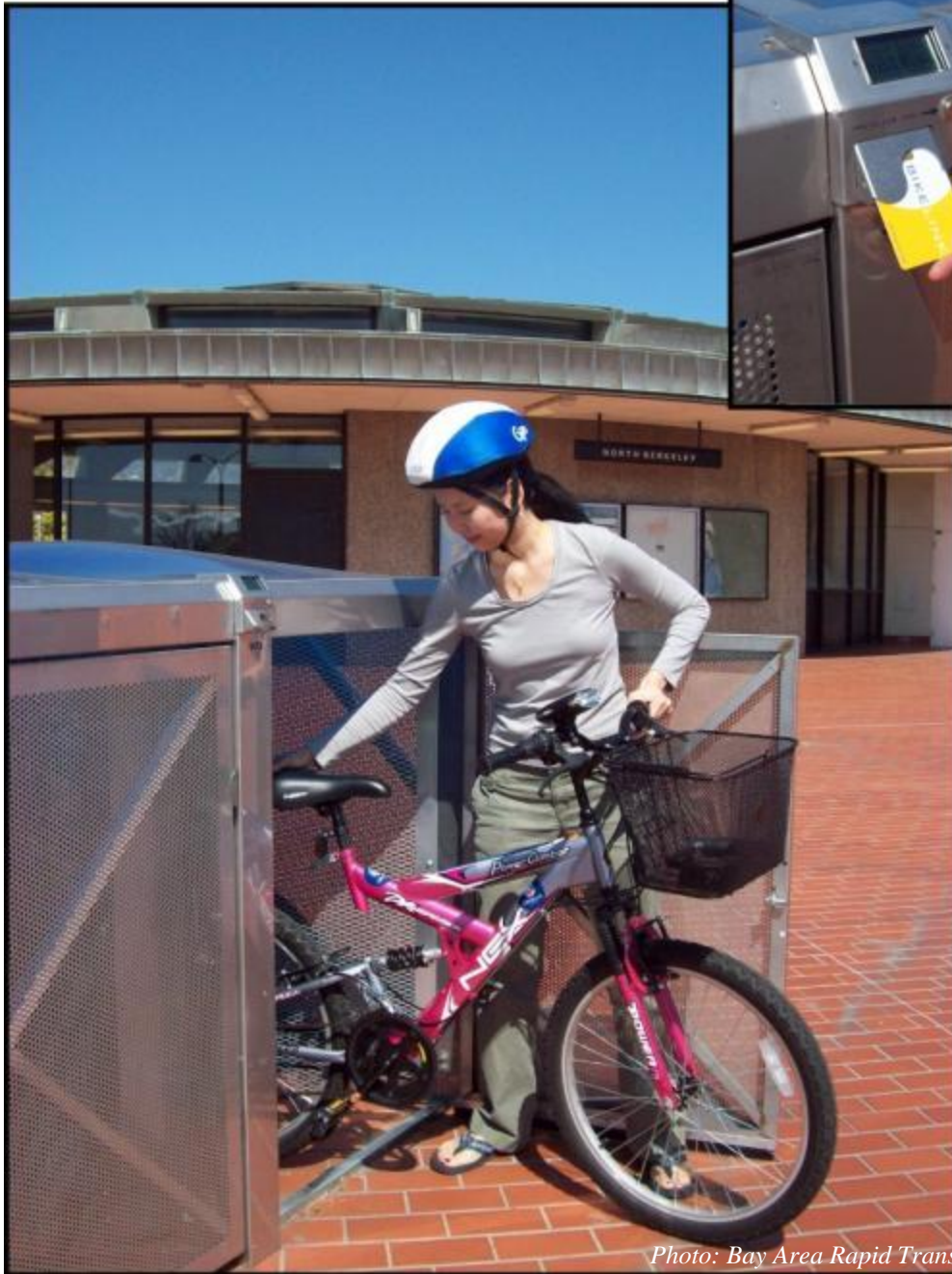


Photo: Bay Area Rapid Trans



**smart card
used to access
lockers**

**Electronic
bike lockers at
North
Berkeley
BART station**



Bike parking at bus stops in Europe

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Bike Station at Union Station in Toronto



**Vending
machine for
bike
accessories**

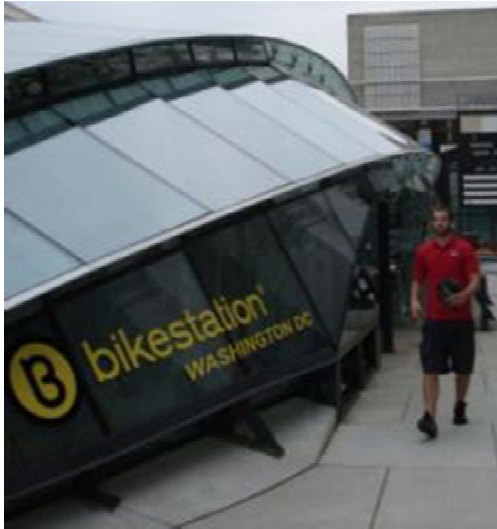


Photo: Ralph Buehler



Bike Station in Muenster, Germany

Photo: Peter Berkeley



Bike Wash at Muenster Bike Station

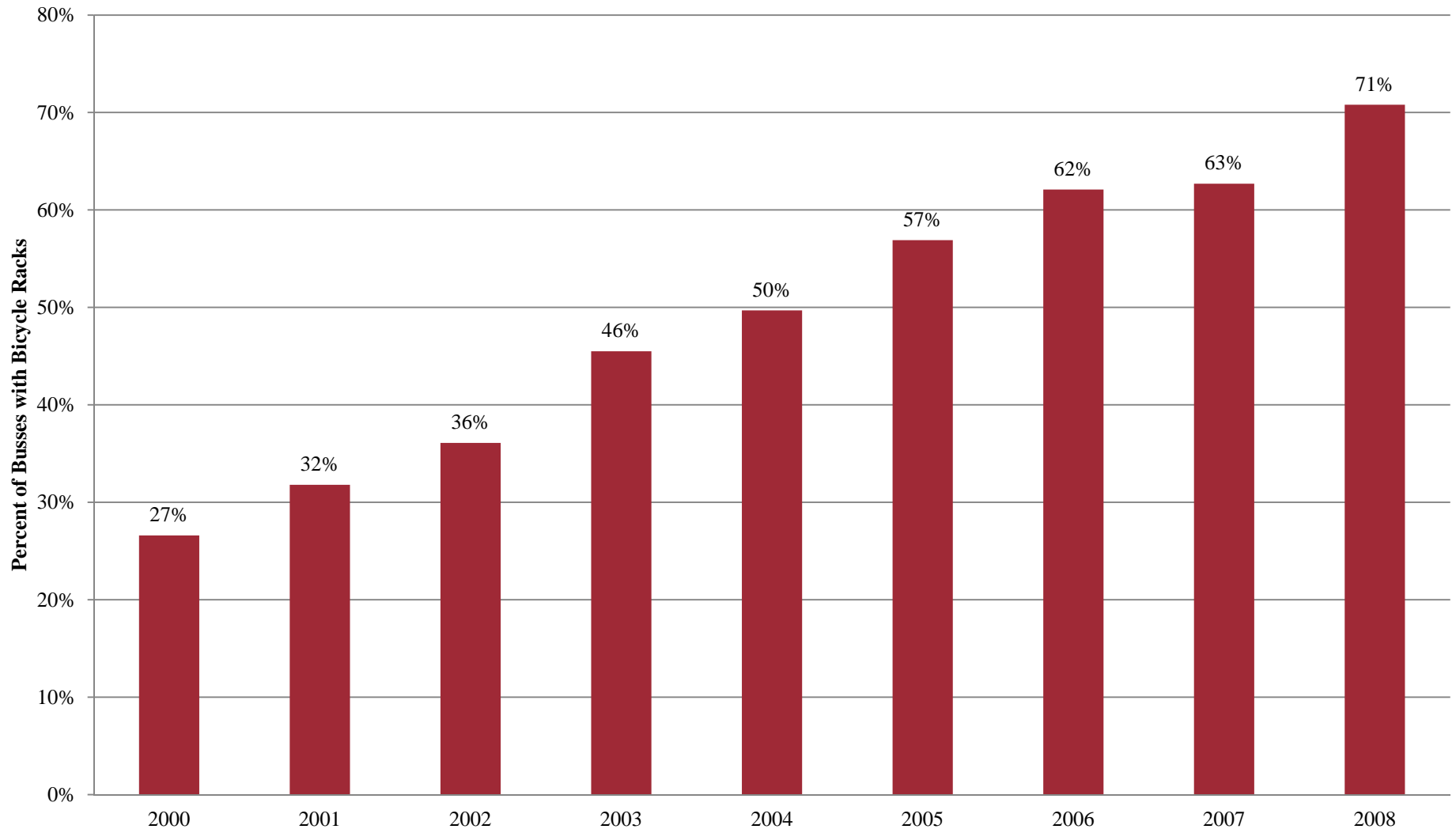
Photo: Peter Berkeley

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Trend in Percentage of Buses with Exterior Bicycle Racks in the USA, 2001-2008



(Source: APTA, Public Transportation Factbook 2008, Table 23)

Over 50,000 buses in the USA now come equipped with bike racks



Photo: Santa Barbara Bicycling Coalition

Bike on LRT in NJ and Minneapolis



Photo: John Boyle

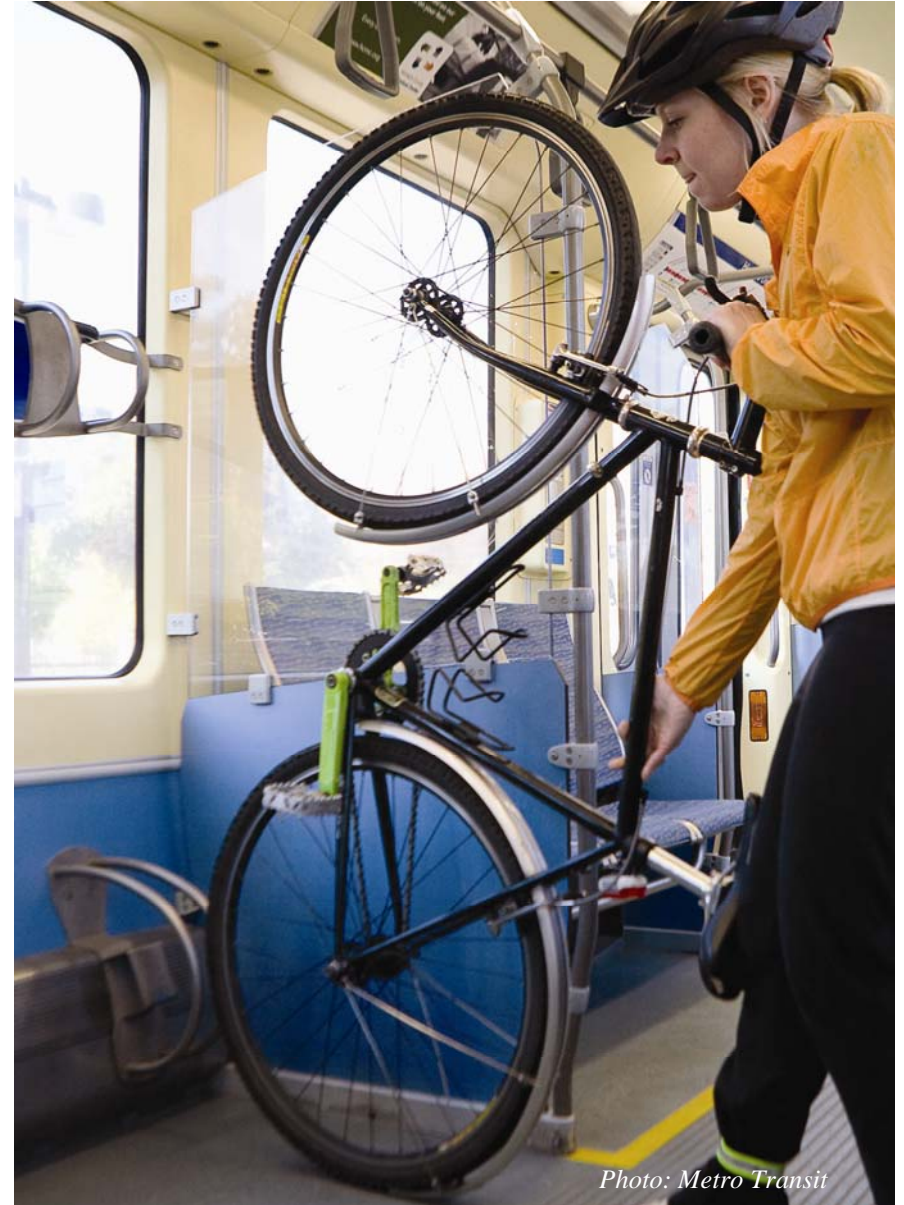


Photo: Metro Transit

Bikes on Portland's Aerial Tramway and MAX Light Rail



Photo: Ralph Buehler

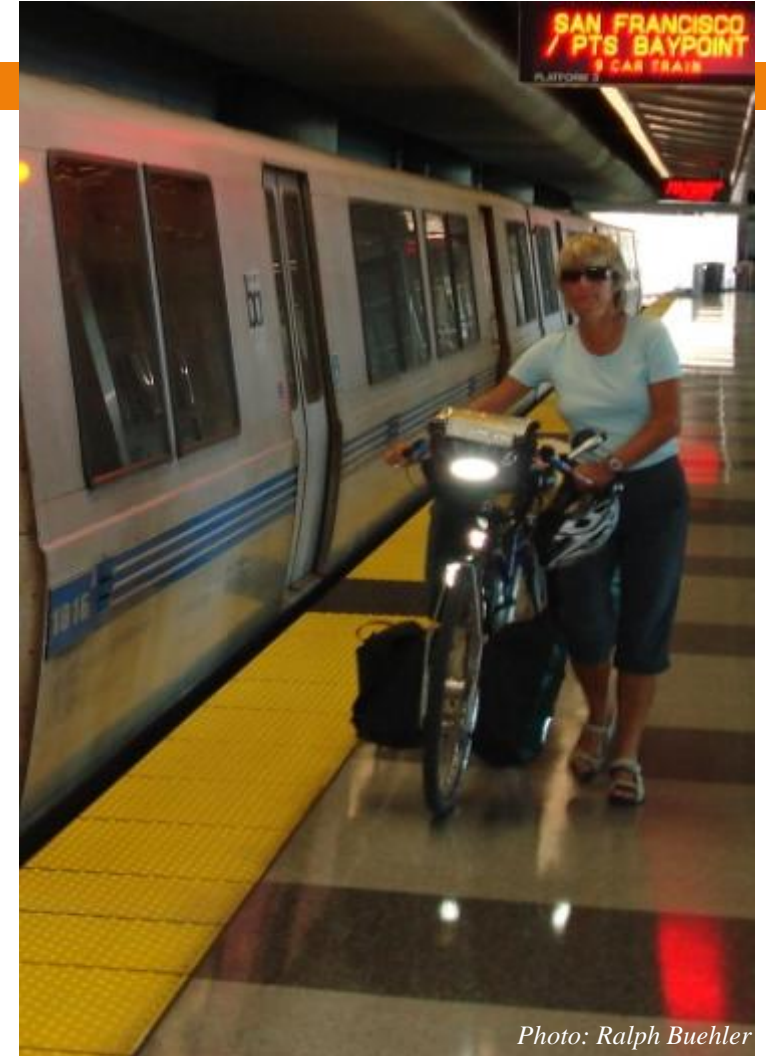


Photo: Ralph Buehler

Bikes on BART in SF Bay Area



Bikes permitted on-board except during peak hours, and without special provisions for bike storage such as on CalTrain



Bike on Suburban Rail in NJ



Photo: Leigh Ann Von Hagen

Bikes on Caltrain in San Francisco



Photo: San Francisco Bicycling Coalition

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Photo: Peter Berkeley

“ÖV Fiets” and “Call A Bike” in Germany and Netherlands



Photo: Peter Berkeley



Photo: German Railways

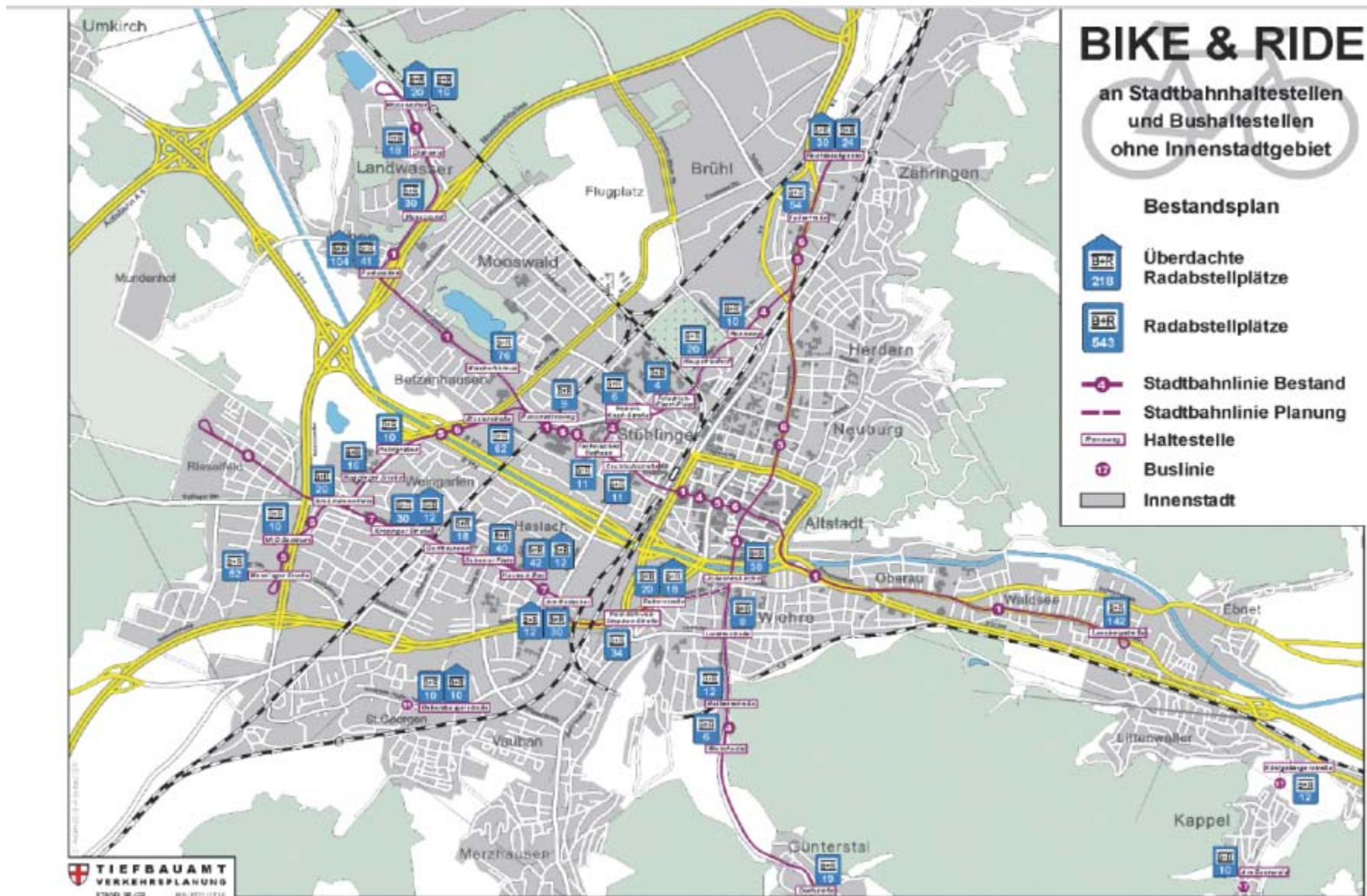
Easy bike rentals at transit stations

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Bike and Ride





Above: Shared bus and
bike lane in
Berlin, Germany



Bike path placed behind bus stop to
reduce conflict between cyclists and
bus passengers

Growth in Bike-Transit Trips

- Washington Metrorail: 60% growth in bike and ride from 2002 to 2007
- Minneapolis: doubling in bikes on buses from 2007 to 2008
- SF Bay Area: Bike access trips to BART stations rose from 2.5% in 1998 to 3.5% in 2008 (10,920 trips per day)
- Nationally from 1% to 3% of transit access/egress trips
- **More research needed on impacts of bike-transit integration**

Conclusions



- ❑ **Vast improvement in bike transit integration in North America since 2000**
- ❑ **Problems where most successful ?**
- ❑ **“Complete stations”**
- ❑ **Future growth in cycling will require even further investments in the coming years**
- ❑ **Bike and ride is much cheaper than park and ride and more environmentally friendly**



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For more Details:

Pucher, J. and R. Buehler. *City Cycling*.

MIT Press, forthcoming, October 2012.

Or

<http://www.nctr.usf.edu/jpt/pdf/JPT12-3Pucher.pdf>

THANK YOU