

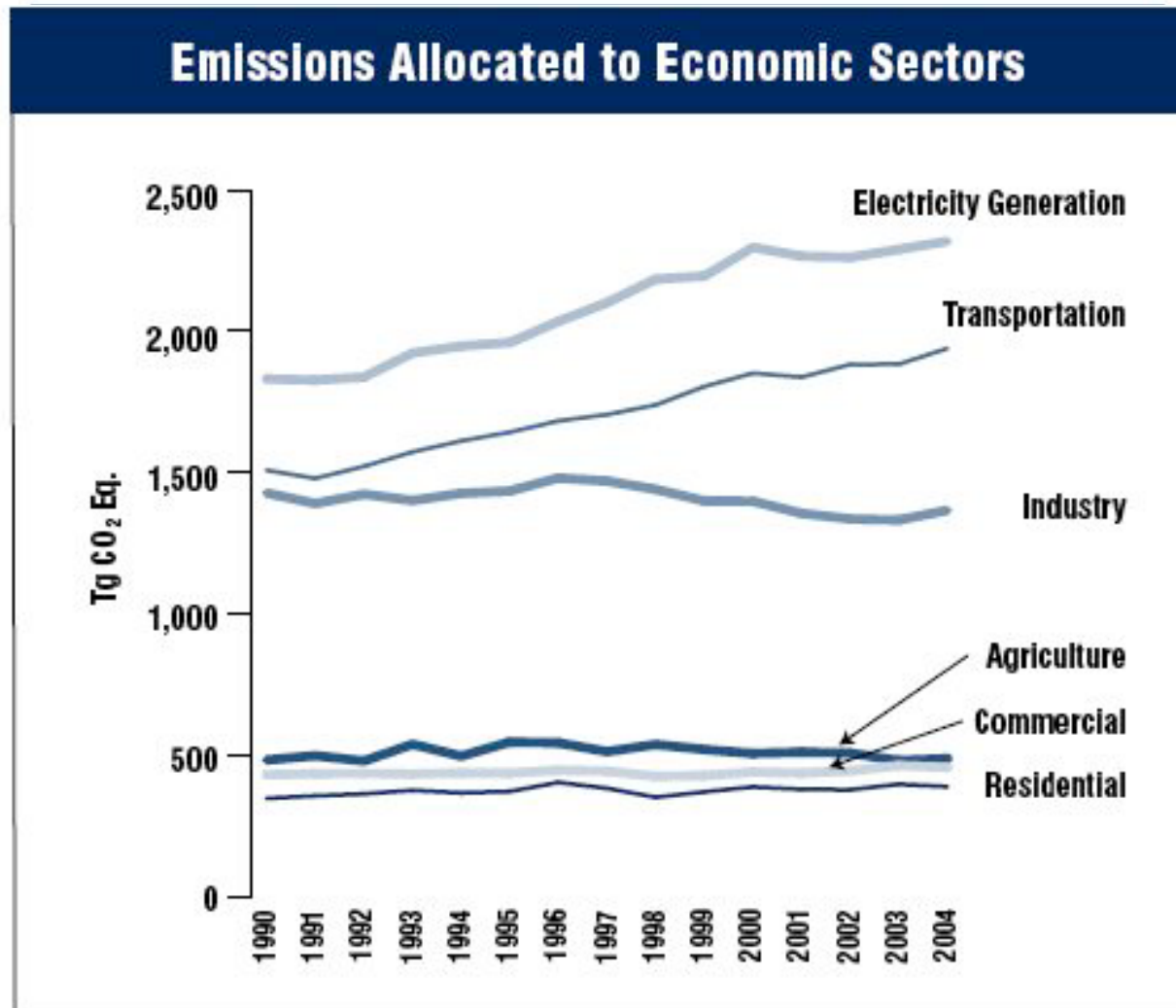
An aerial photograph of a coastal city, likely New Haven, Connecticut, showing a large bay, a dense urban area, and surrounding greenery. The image is used as a background for the slide.

Activating the Convenient Remedy
Climate Change, Urbanism and Sustainable Transportation

Norman W. Garrick

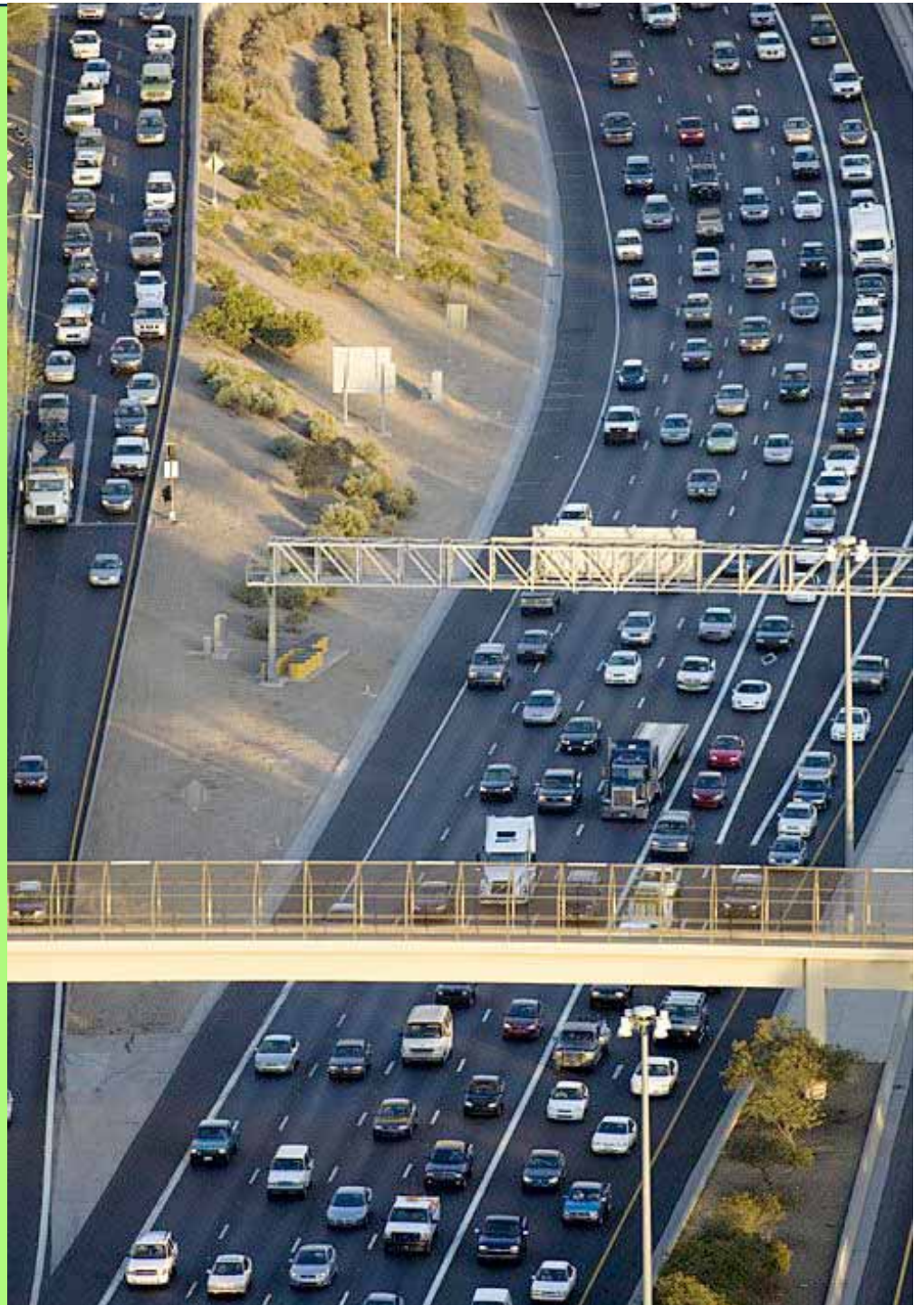
Center for Transportation and Urban Planning at UConn

Transportation Contribution to Greenhouse Gas Emissions, US EPA, 2006

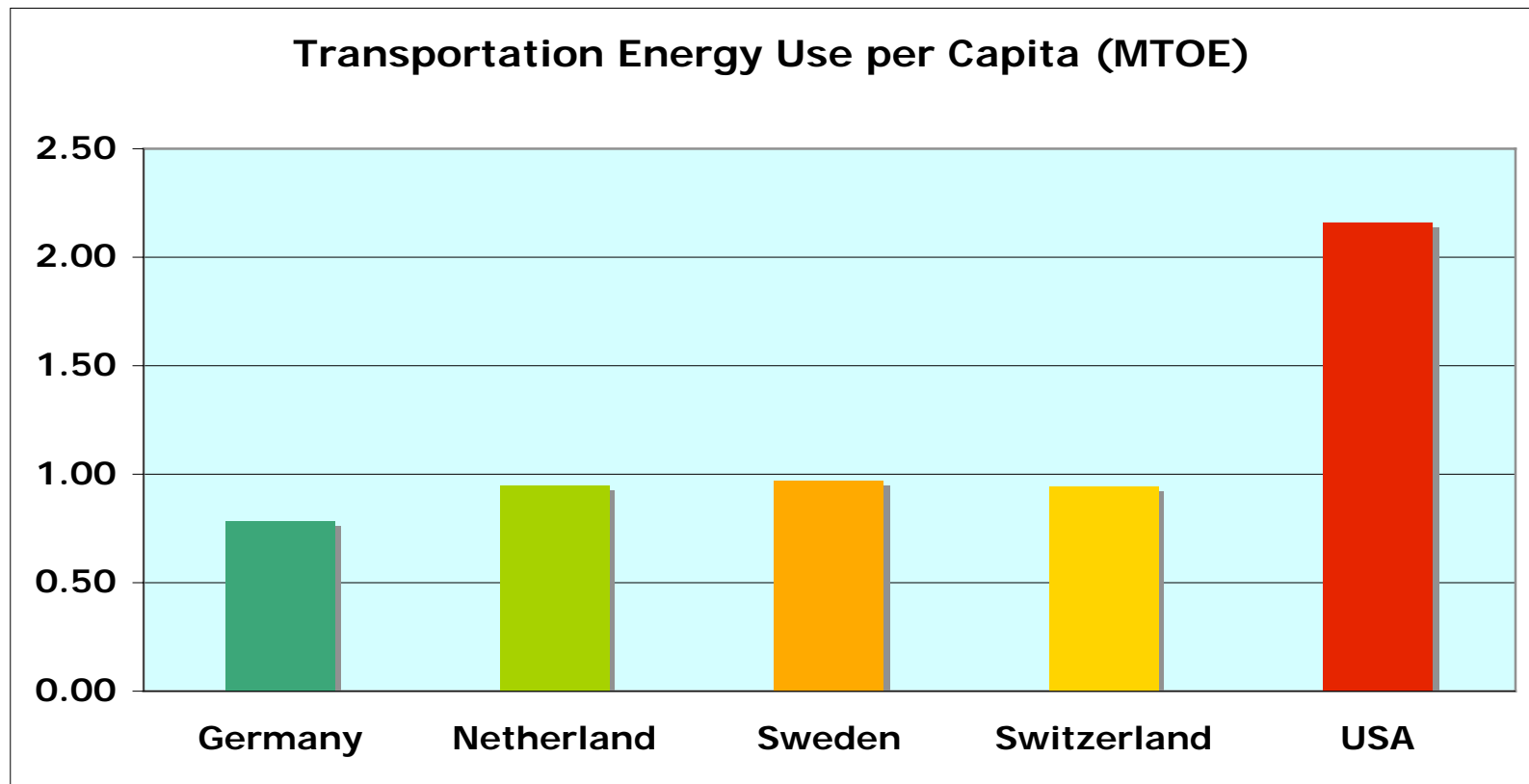


Transportation, GHG and Energy

In the USA, Transportation accounts for 40% of total energy consumption



Transportation Energy Use



USA uses almost **three times** more energy for transportation than other western countries

Technology may not be the remedy

American Cities use 220% more gasoline per person than European Cities

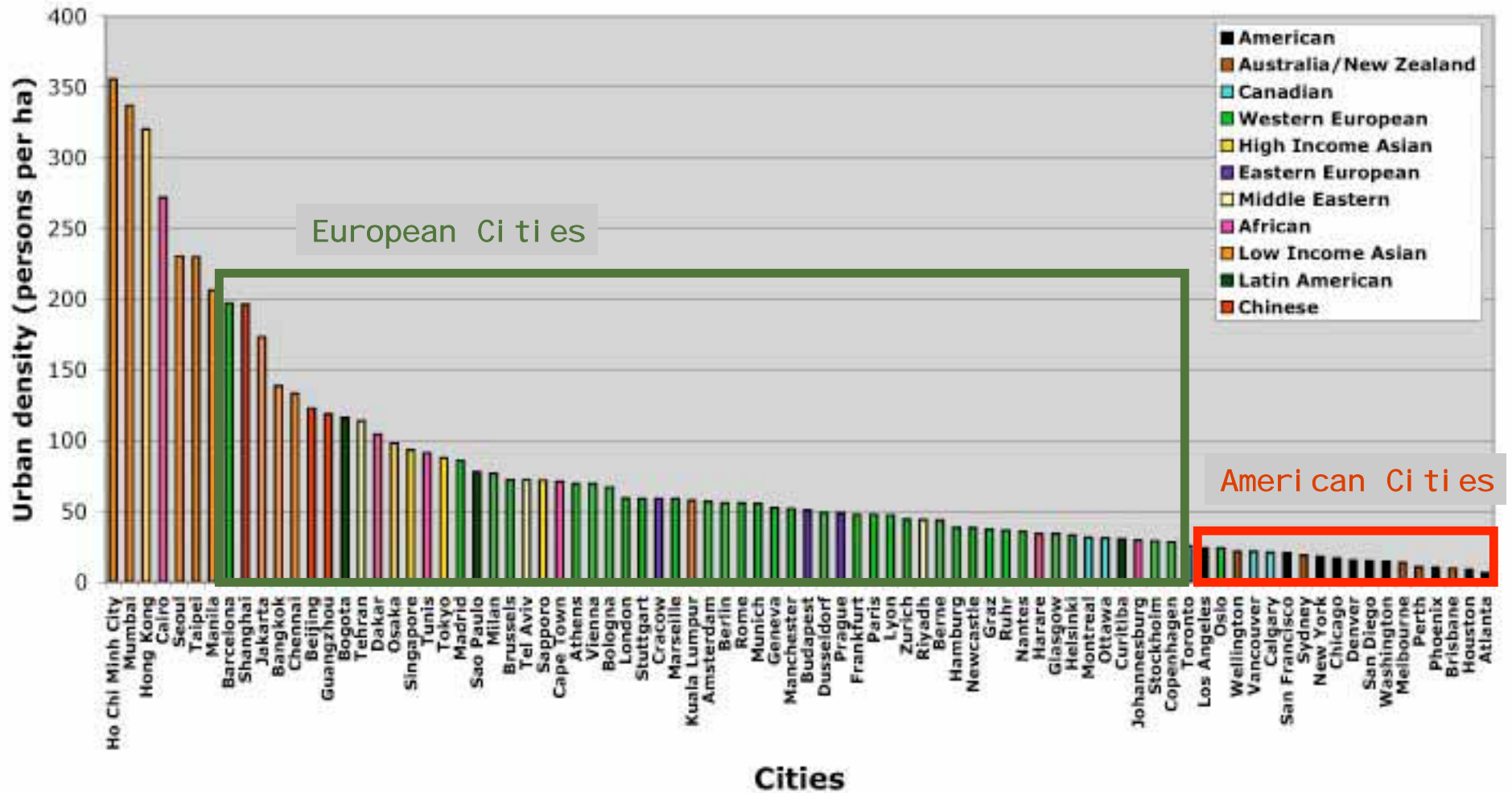


Vehicle Technology
accounts for about
33% points of this
difference

Urbanism and Mode
Choice account for
much of the rest of
the difference

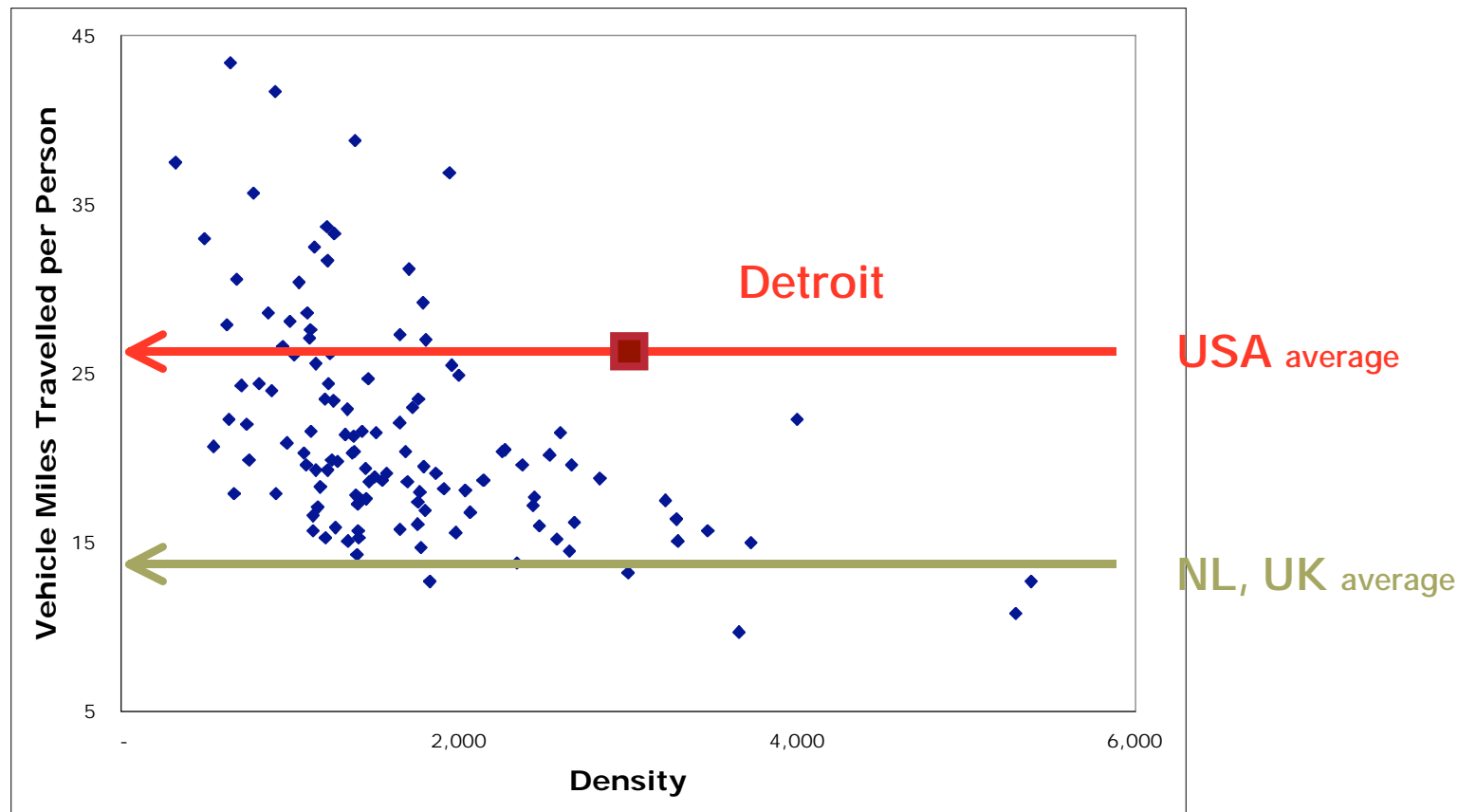
This data suggests that the exclusive focus in the USA on finding a technology fix to global warming is, to put it charitably, misguided

Urban Density

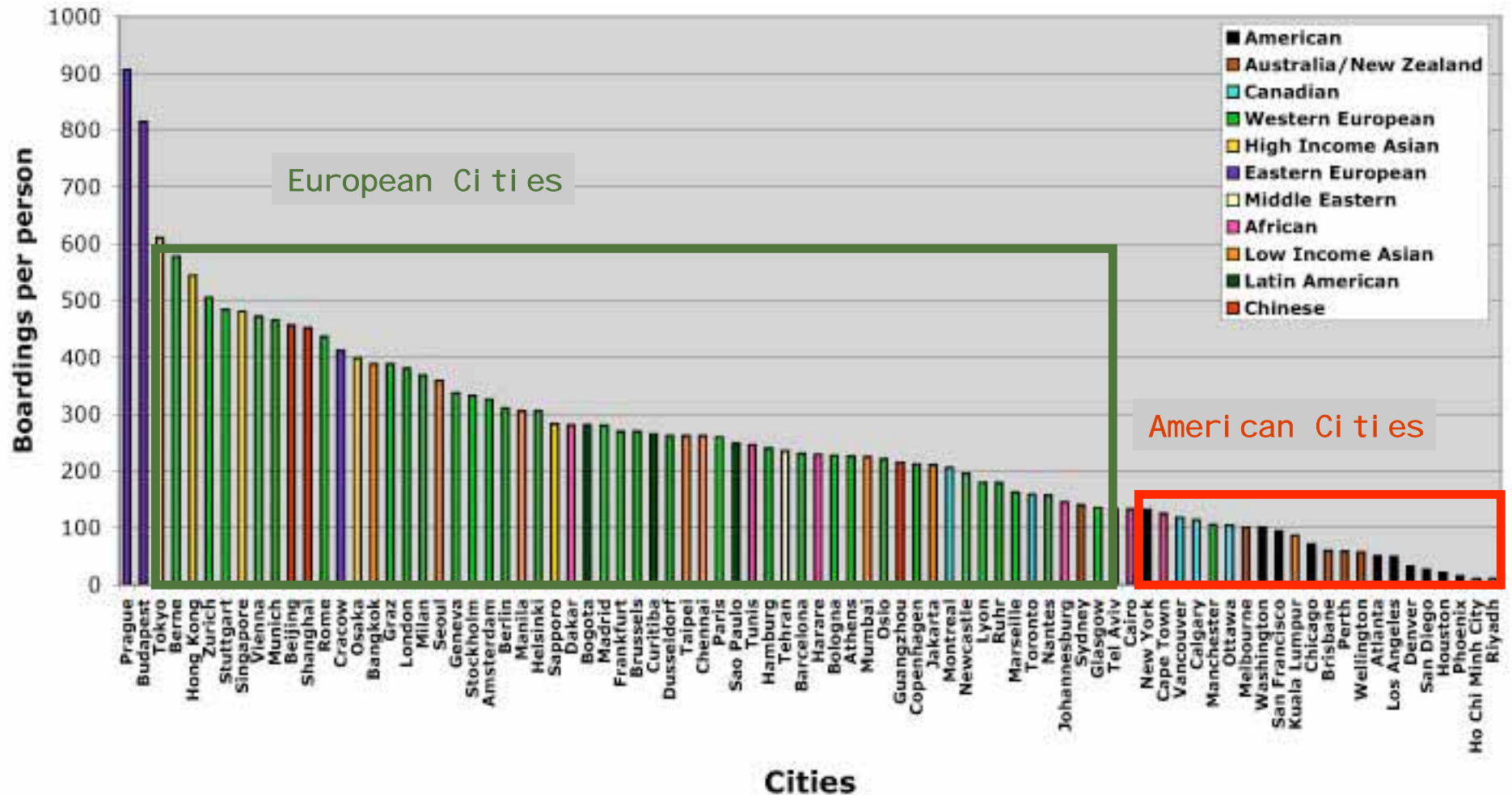


Density and VMT

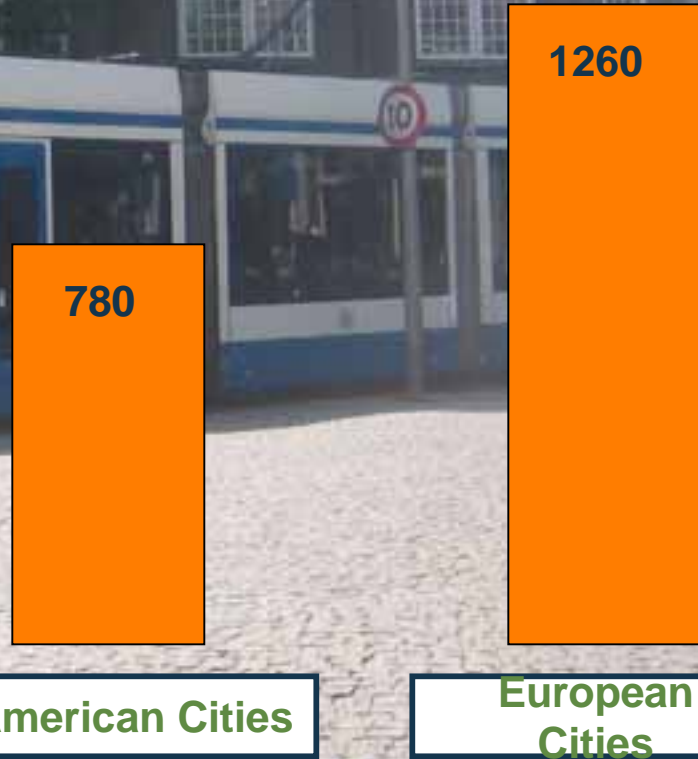
Small American Cities



Public Transit Use



Public Transit and Energy



Public Transit Energy Use per Person, MJ

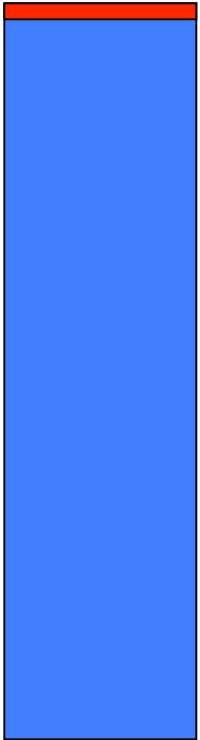
Source: Institute for Sustainability and Technology Policy, Murdoch University

Public Transit is an efficient user of energy



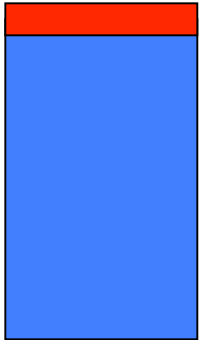
Total Transportation Energy
64,400

Public Transit Energy Total 780



25,700

1,200



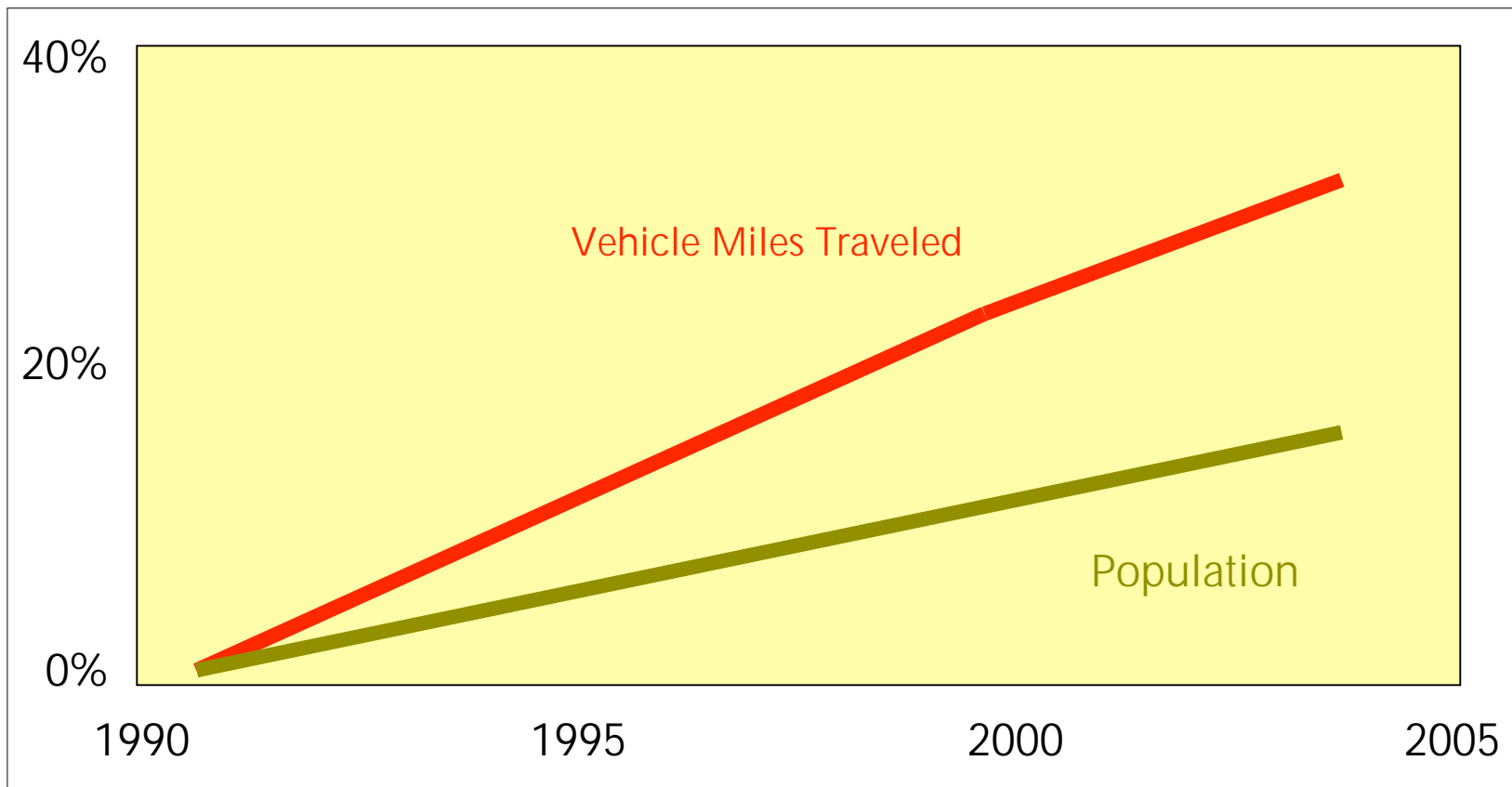
American Cities

European Cities

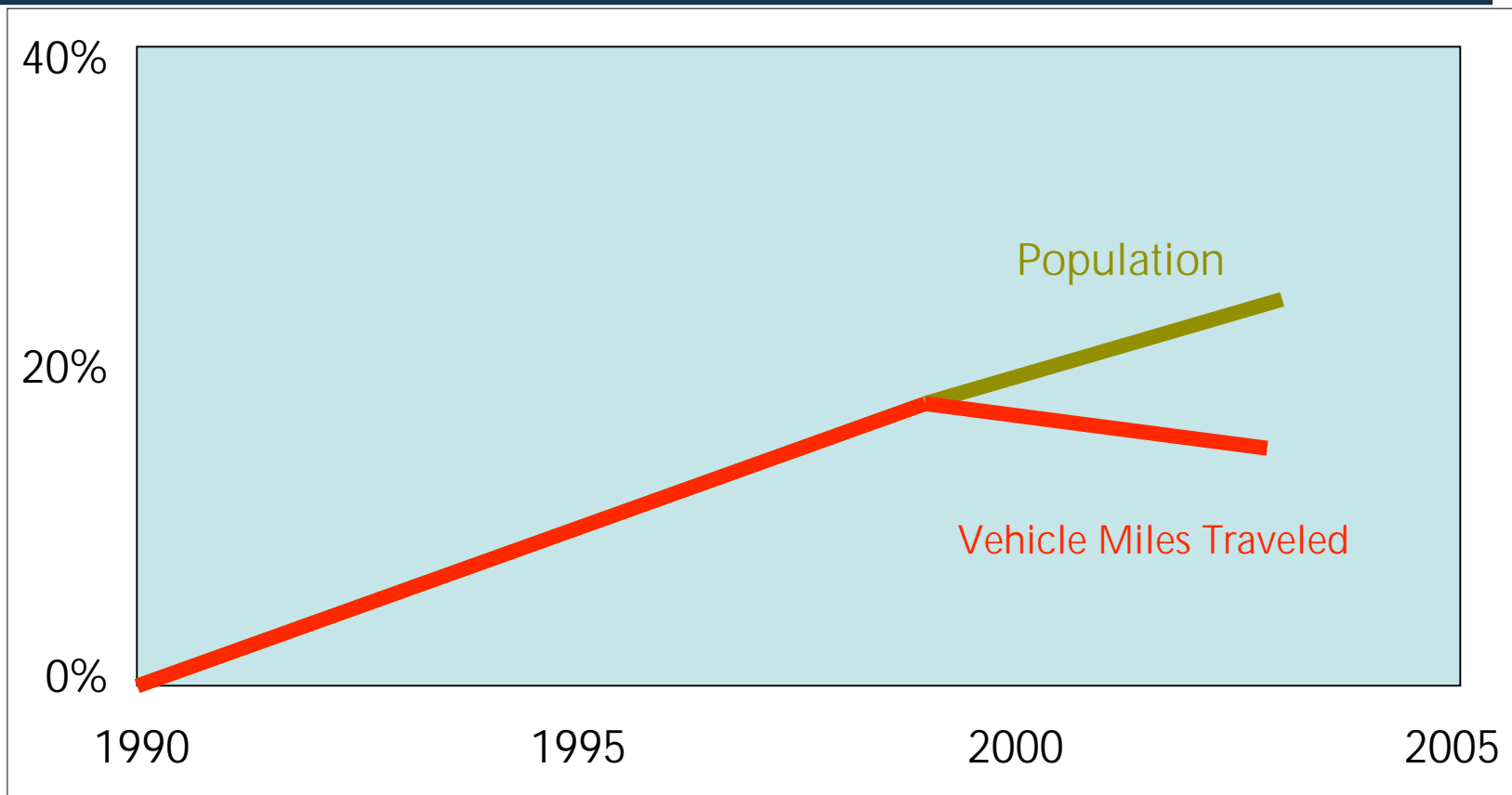
Transportation Energy Use per Person, MJ

Source: Institute for Sustainability and Technology Policy, Murdoch University

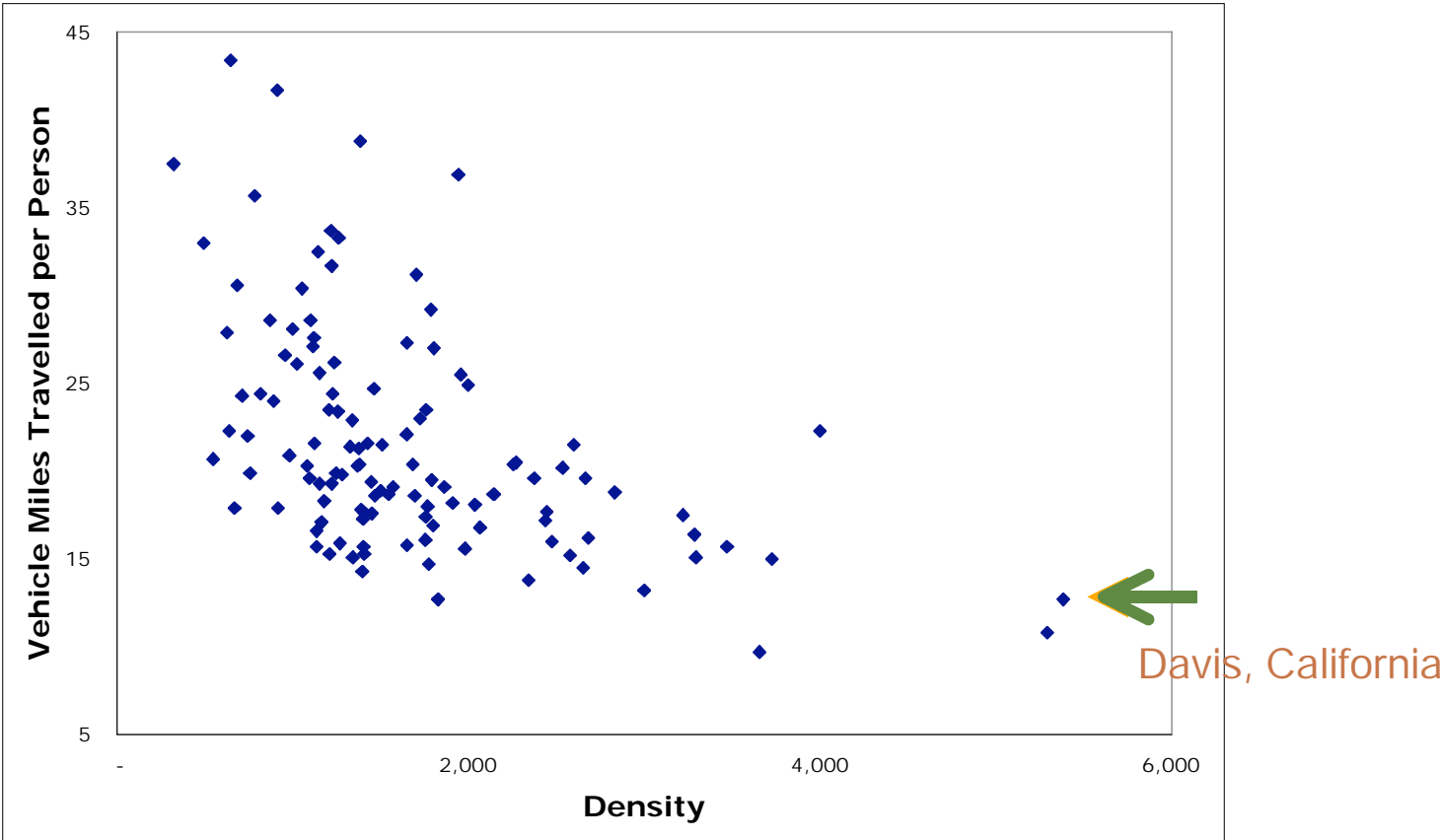
Population and Vehicle Traffic Growth USA



Population and Vehicle Traffic Growth Portland Metro



Role of Non-motorized Travel



Role of Walking and Bicycling



Norman W. Garrick

Cities afraid of death by congestion

Extra-wide freeways are among ideas to keep traffic — and local economies — moving smoothly in future

By Larry Copeland
USA TODAY

A plan to widen part of Interstate 10 in metropolitan Phoenix from 14 lanes to 24 as the "super" lanes gain super-highway prominence could ease the kind of gridlock that state planners say could stunt economic growth.

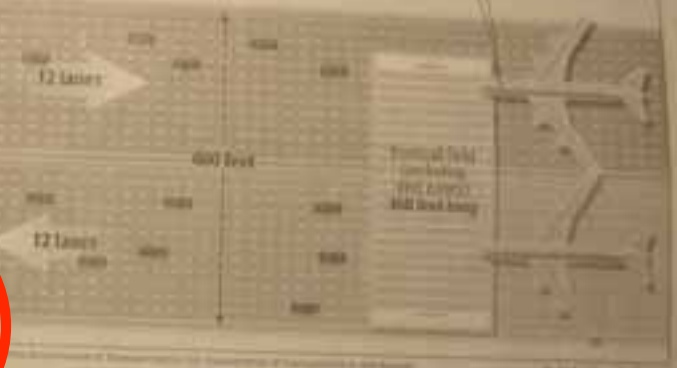
For a 2-mile stretch between U.S. 60 in Tempe and State Route 142, the interstate would have six general purpose lanes, two carpool lanes and four lanes for local traffic in each direction. Work on the first phase, which planners expect to cost about \$550 million, could begin by 2011.

Political and business leaders in metro areas increasingly view traffic congestion as hampering their ability to compete with other regions for new businesses and young professionals. "There's no question that traffic is a major factor for a business that's contemplating

Putting the 'super' in superhighway

A proposed expansion of a stretch of traffic-choked Interstate 10 in the Phoenix area would convert the highway's right-of-way to about 800 feet, according to federal highway guidelines.

Four-lane T&T with 100 ft on 422 feet, 10 inches wide



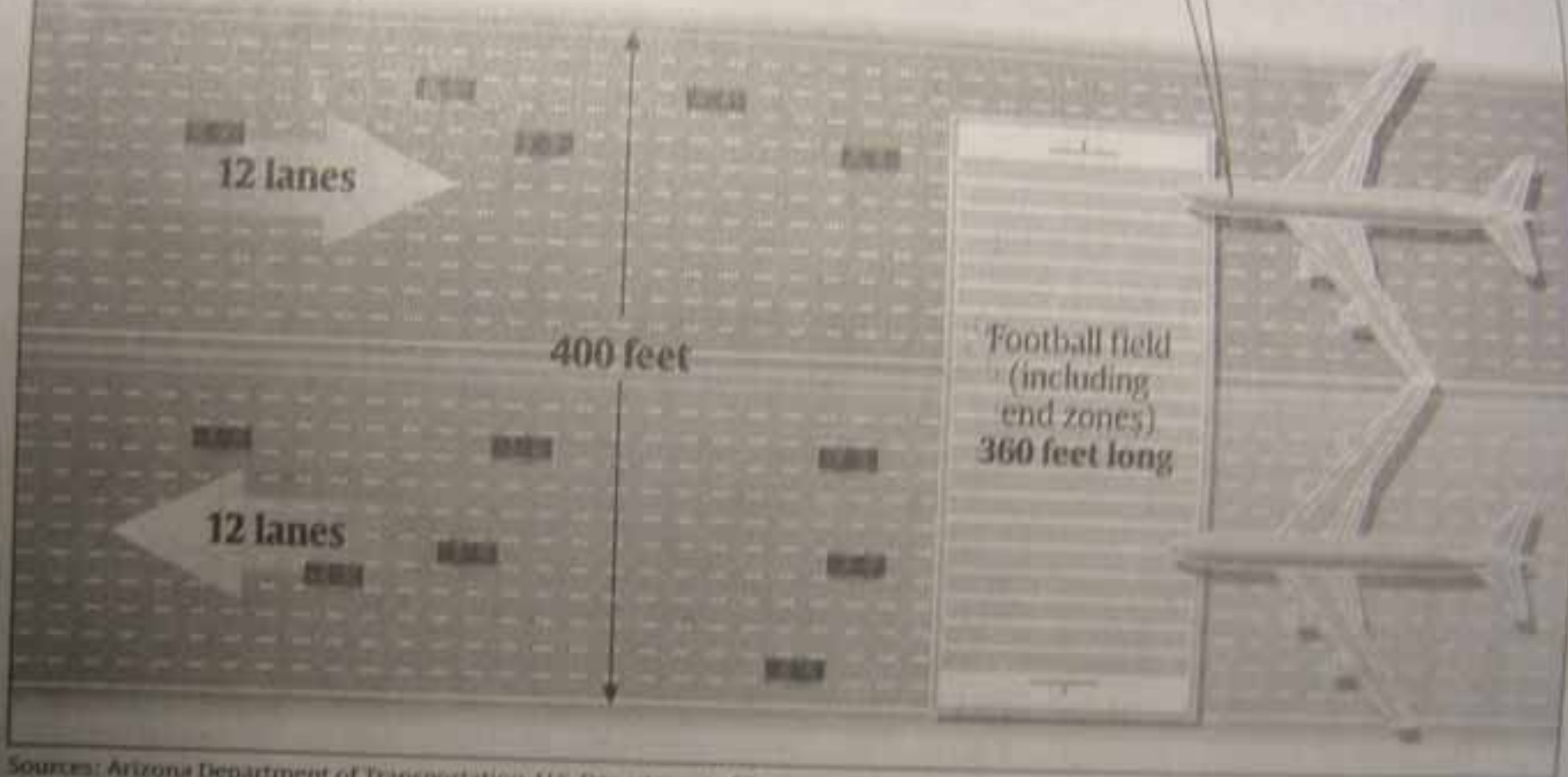
Wider: This suggested stretch of Interstate 10 in the Phoenix area would be widened to 24 lanes as part of a massive expansion.

London program approved by the Council for Transportation

March 1, 2007

Expansion of a stretch of traffic-clogged Interstate 10 in the Phoenix area would widen the highway's right of way to about 400 feet, according to federal highway guidelines.

Two Boeing 747-400s side by side
422 feet, 10 inches wide



Sources: Arizona Department of Transportation, U.S. Department of Transportation and Boeing

By Karl Gelles, USA TODAY

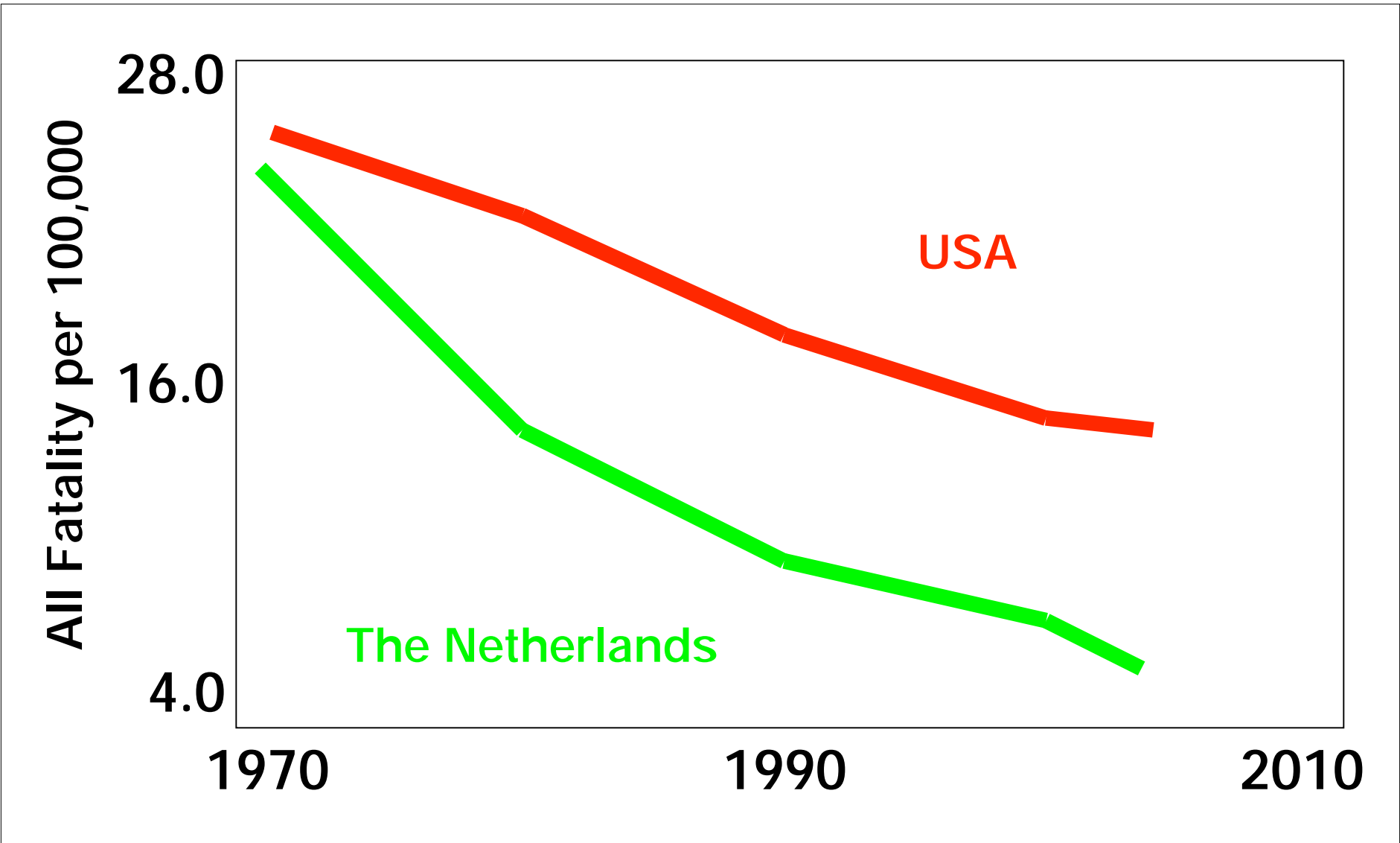


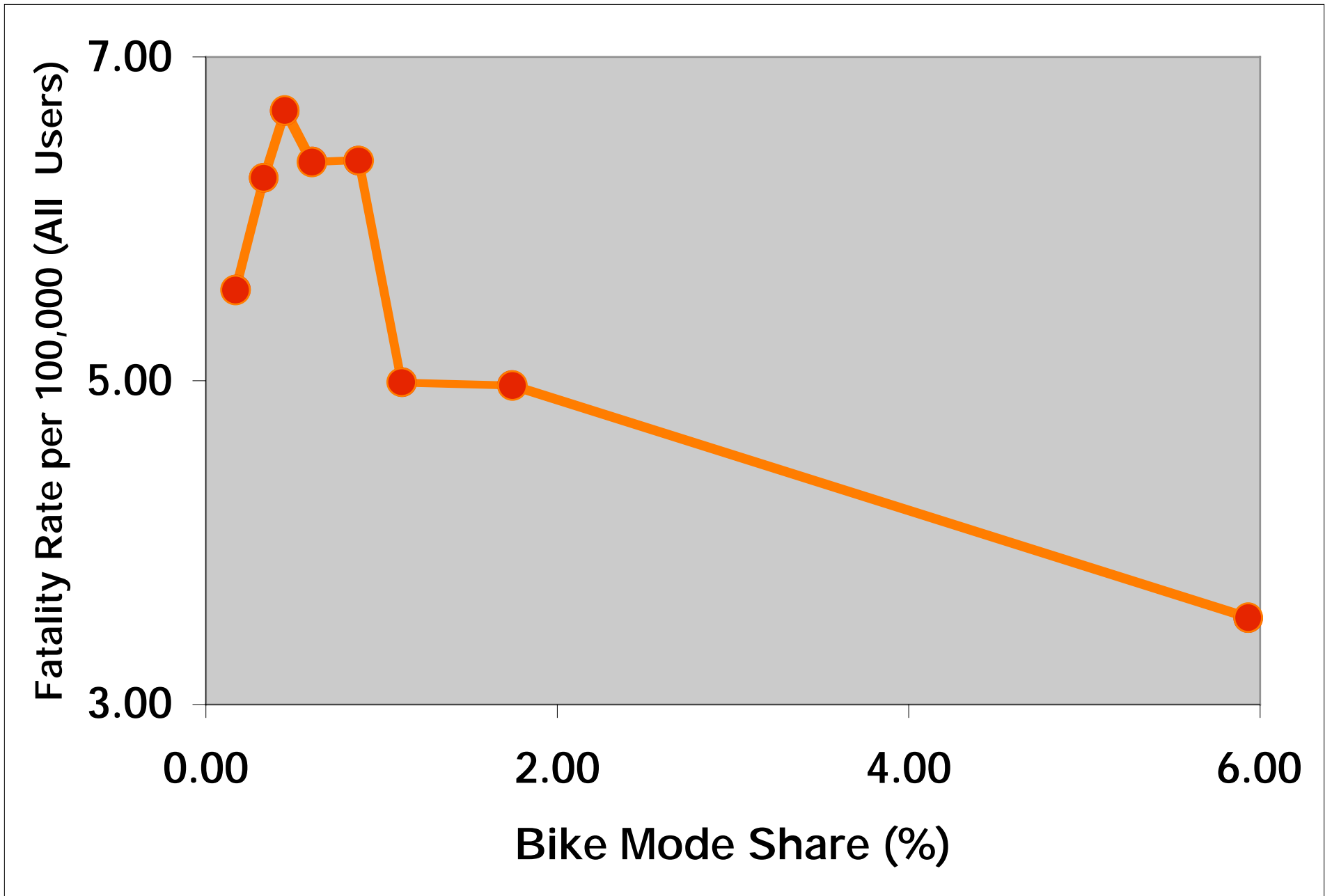
System Failure under Stress

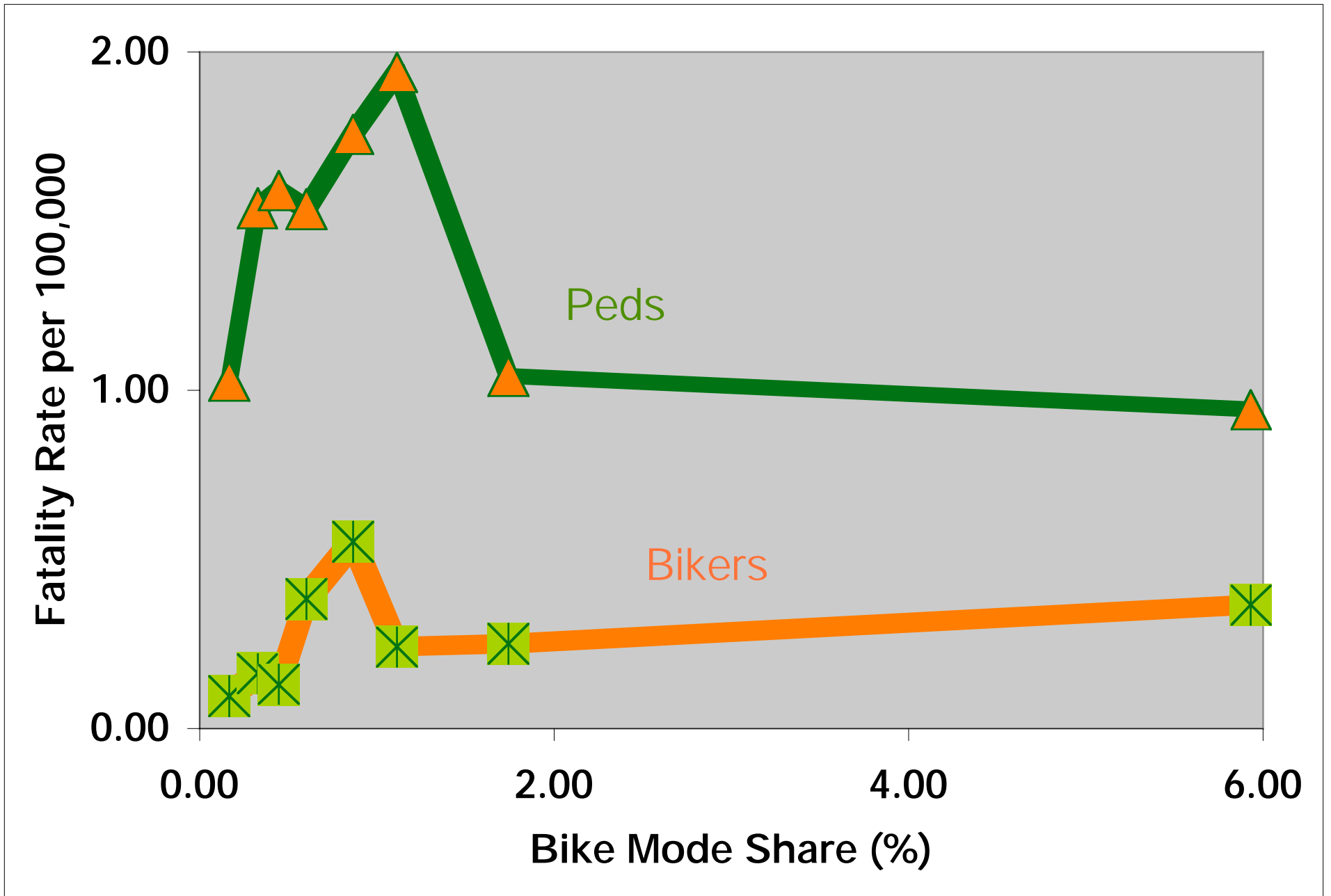
Evacuees fleeing Rita in Houston stranded on I-10

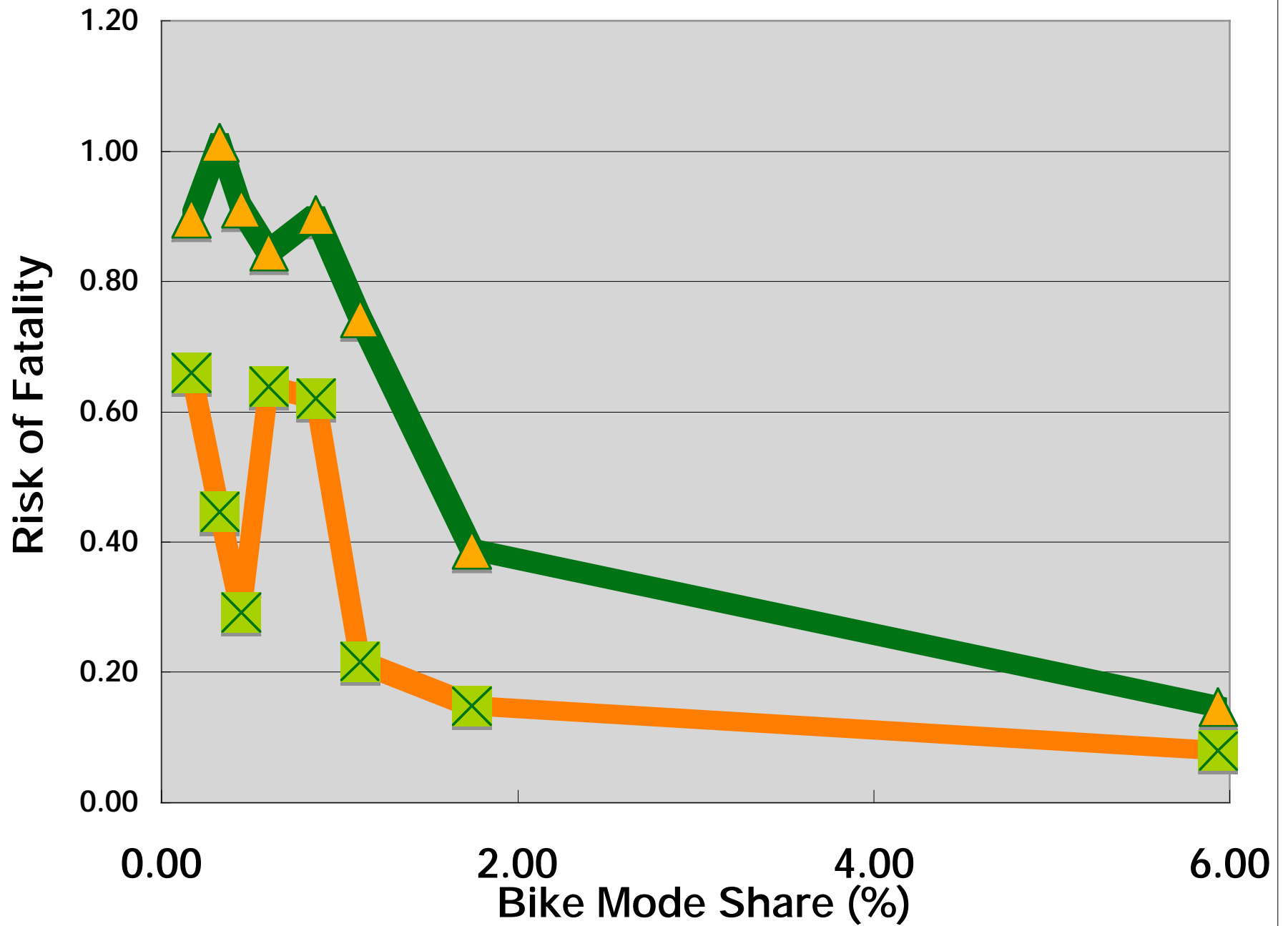
www.slate.com/id/2126823/

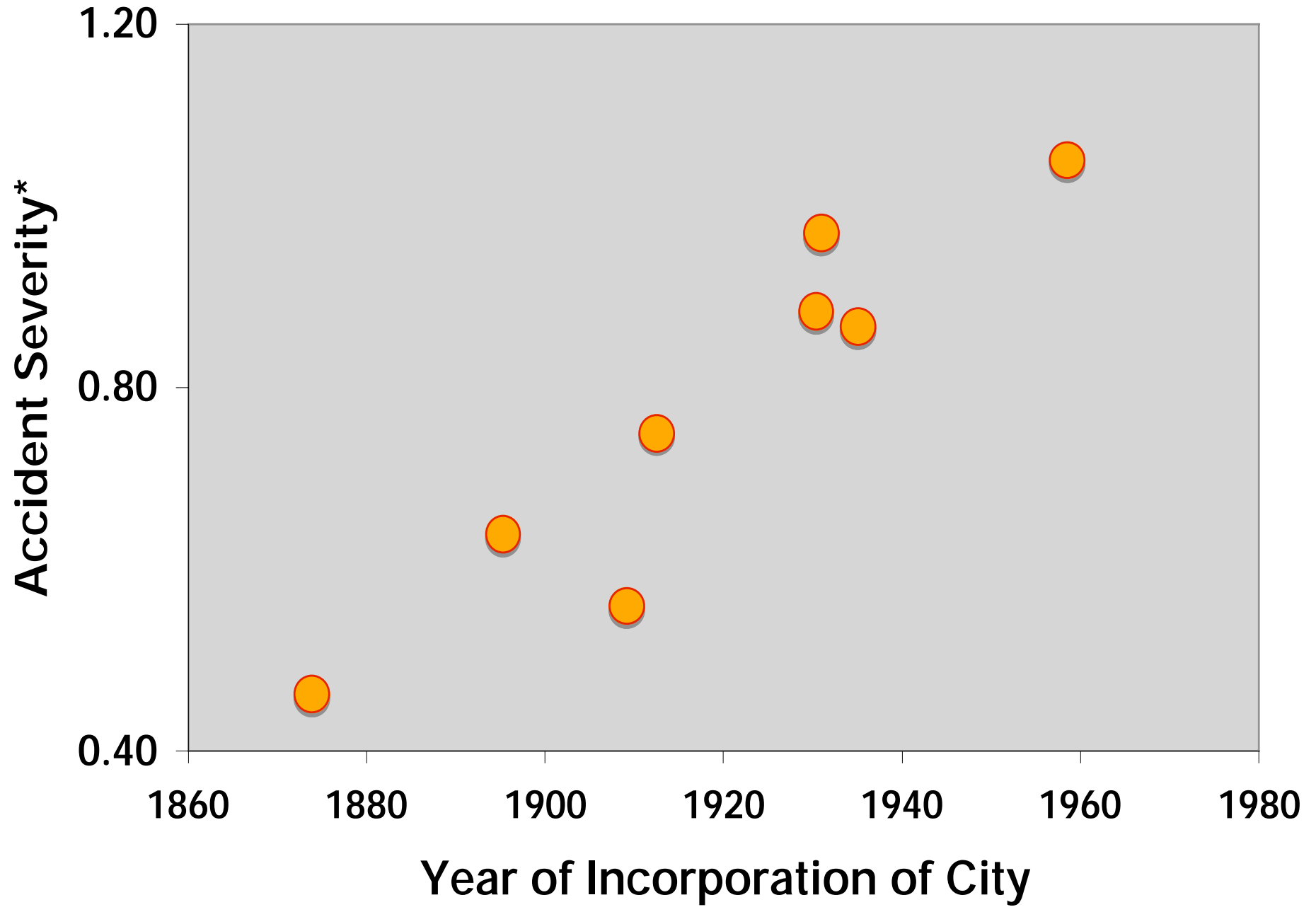




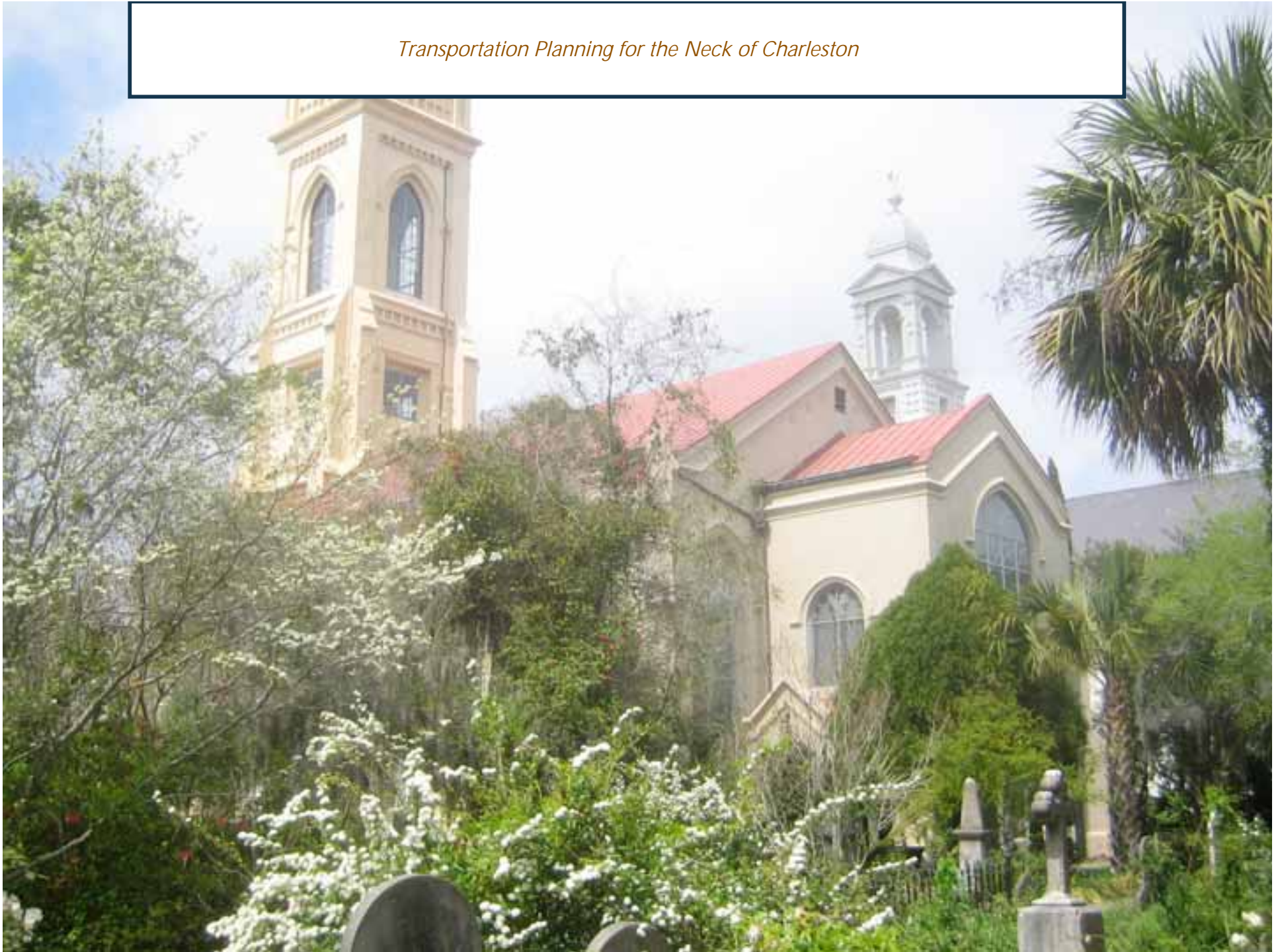








Transportation Planning for the Neck of Charleston





(WARRINGTON)

1. General Remarks	10. Area of site	19. Date of plan	28. Name of authority
2. Name of building	11. Name of building	20. Name of building	29. Name of building
3. Name of building	12. Name of building	21. Name of building	30. Name of building
4. Name of building	13. Name of building	22. Name of building	31. Name of building
5. Name of building	14. Name of building	23. Name of building	32. Name of building
6. Name of building	15. Name of building	24. Name of building	33. Name of building
7. Name of building	16. Name of building	25. Name of building	34. Name of building
8. Name of building	17. Name of building	26. Name of building	35. Name of building
9. Name of building	18. Name of building	27. Name of building	36. Name of building

Charleston Urban Design



















Charleston and New Urbanism



New Urbanism in the Charleston Area













Battles in Urbanism

Enter through the narrow gate.
For wide is the gate and
broad is the road that leads
to destruction, and many enter
through it. But small is the gate
and narrow the road that leads
to life, and only a few find it.
Mat. 7:13-14

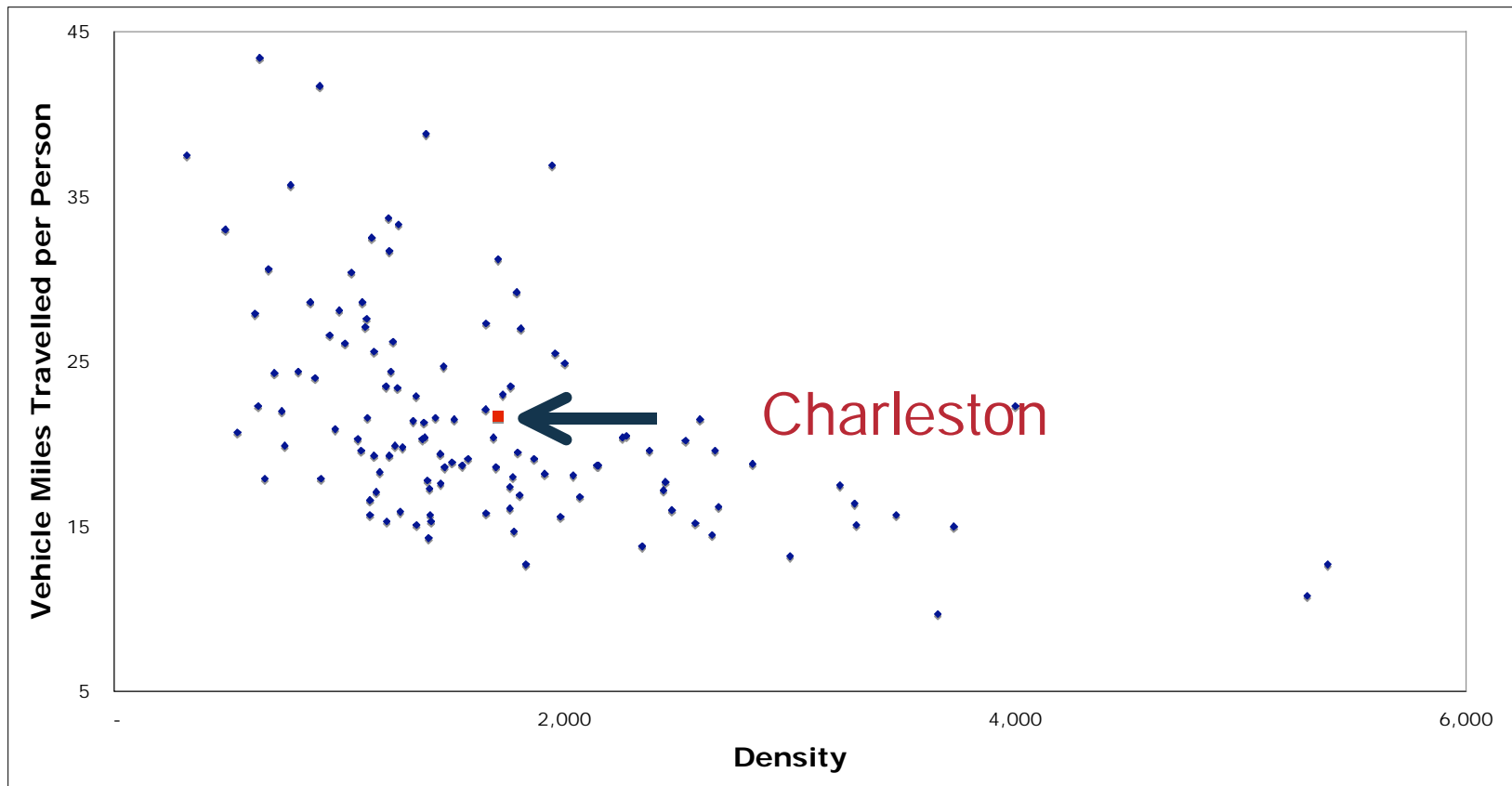
Higher density
Urban Streets
Marketing
Perception



The Neck of Charleston



Charleston Metropolitan Framework









The Battles over Johnnie Dobbs





DOVER, KOHL & PARTNERS
town planning



DOVER, KOHL & PARTNERS
town planning

Norman W. Garrick



LEED® for Neighborhood Developments



What is LEED-ND?



- Joint venture of USGBC, CNU, NRDC (SG)
- national certification for “smart” development
- Primary market: development teams
- Secondary market : planners & local government

How does LEED-ND apply?



- developments of multiple buildings and developer-supplied infrastructure
- May be mixed-use, or entirely residential or commercial if adding diversity to surrounding area
- Will inform land-use component of LEED

LEED-ND Pilot Status

- 371 Applications
- 238 Registered projects
- Representing 42 states, 8 countries
- 104 sq. mi, “bigger than Boston”





Registered LEED-ND Pilot Projects (208)



Focus Group Projects (60)

Three Stages of Certification

- Stage 1: Pre-Entitlement
 - Review of Preliminary Design Documents
- Stage 2: Post-Entitlement
 - Review of Entitled Design
- Stage 3: Post-Construction
 - Built Project



LEED-ND Schedule

- 2007 Pilot program starts
- 2007/8 Initial project certifications complete
- 2008 Pilot complete, standards revised
- 2009 ND criteria finalized and adopted by
CNU/Smart Growth/USGBC
- 201X Zoning code version of LEED-ND



How is LEED-ND organized?

- Three Big Questions:
 - **Where?**
 - Locate in or near existing urban areas
 - Avoid sensitive areas
 - **What?**
 - Compact, connected, & complete place
 - **How?**
 - Project construction and maintenance



Where: Smart Location and Linkage



- Prerequisites
 - Smart Location
 - Water and Wastewater Infrastructure
 - Imperiled species and habitats
 - Wetland and water body conservation
 - Farmland preservation
 - Floodplain avoidance



Where: Smart Location Pre-Requisite

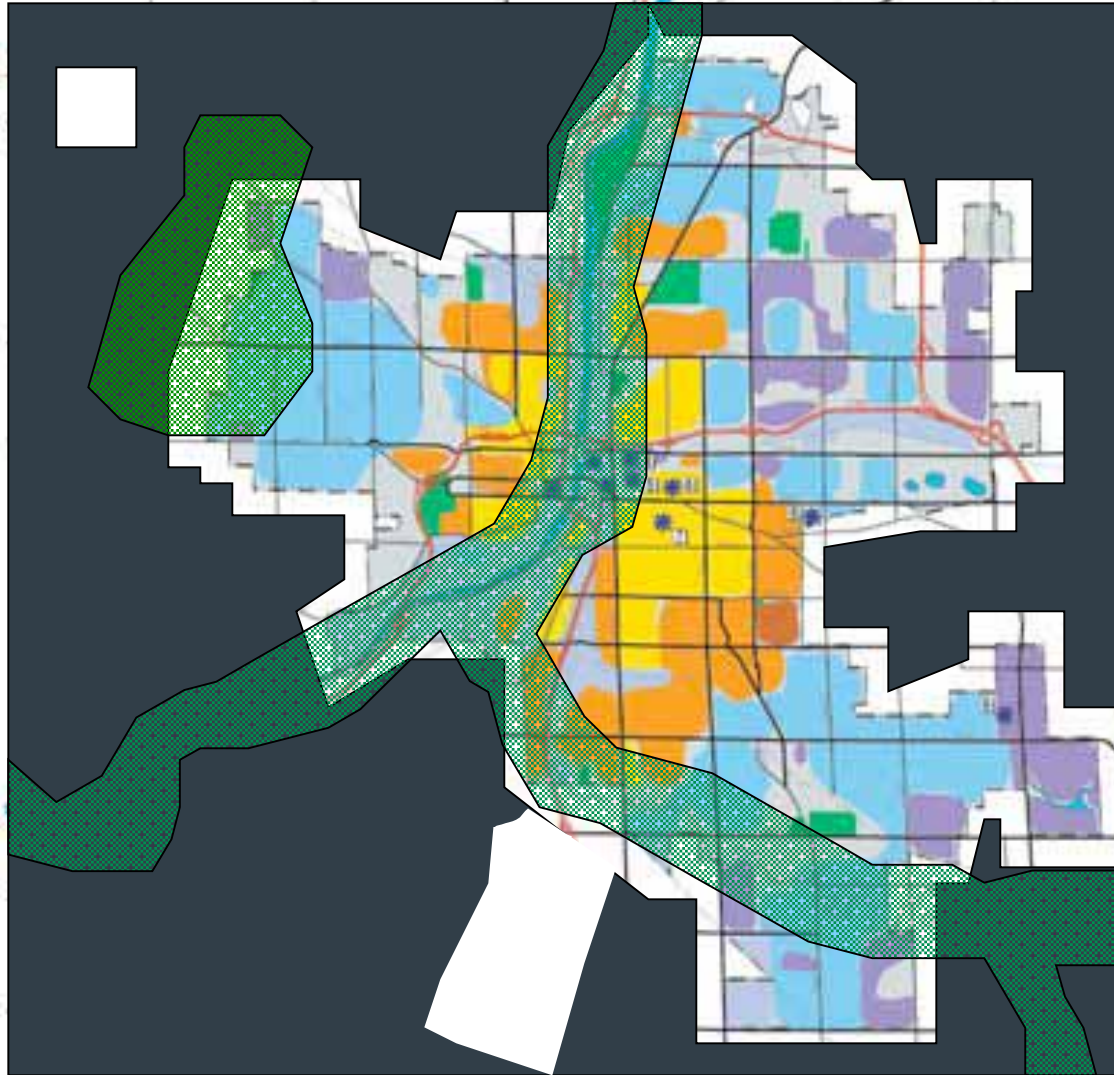
Infill, Redevelopment,
Or Adjacent and
Existing Transit

Planned Transit
Service

Drive Less than Regional
Average

Wetland and Water
Body Protection

Imperiled Species
And Ecological
Communities



Norman W. Cannon



Where: Smart Location and Linkage

- Credits

- Brownfields Redevelopment
- High Cost Brownfield Redevelopment
- Preferred Locations
- Locations w/ reduced automobile dependence
- Bicycle Network
- Jobs and Housing Proximity
- School Proximity
- Steep Slope Protection
- Off-site Land Conservation
- Site Design for Habitat or Wetlands Conservation
- Restoration of Habitats or Wetlands
- Conservation Management of Habitat or Wetlands



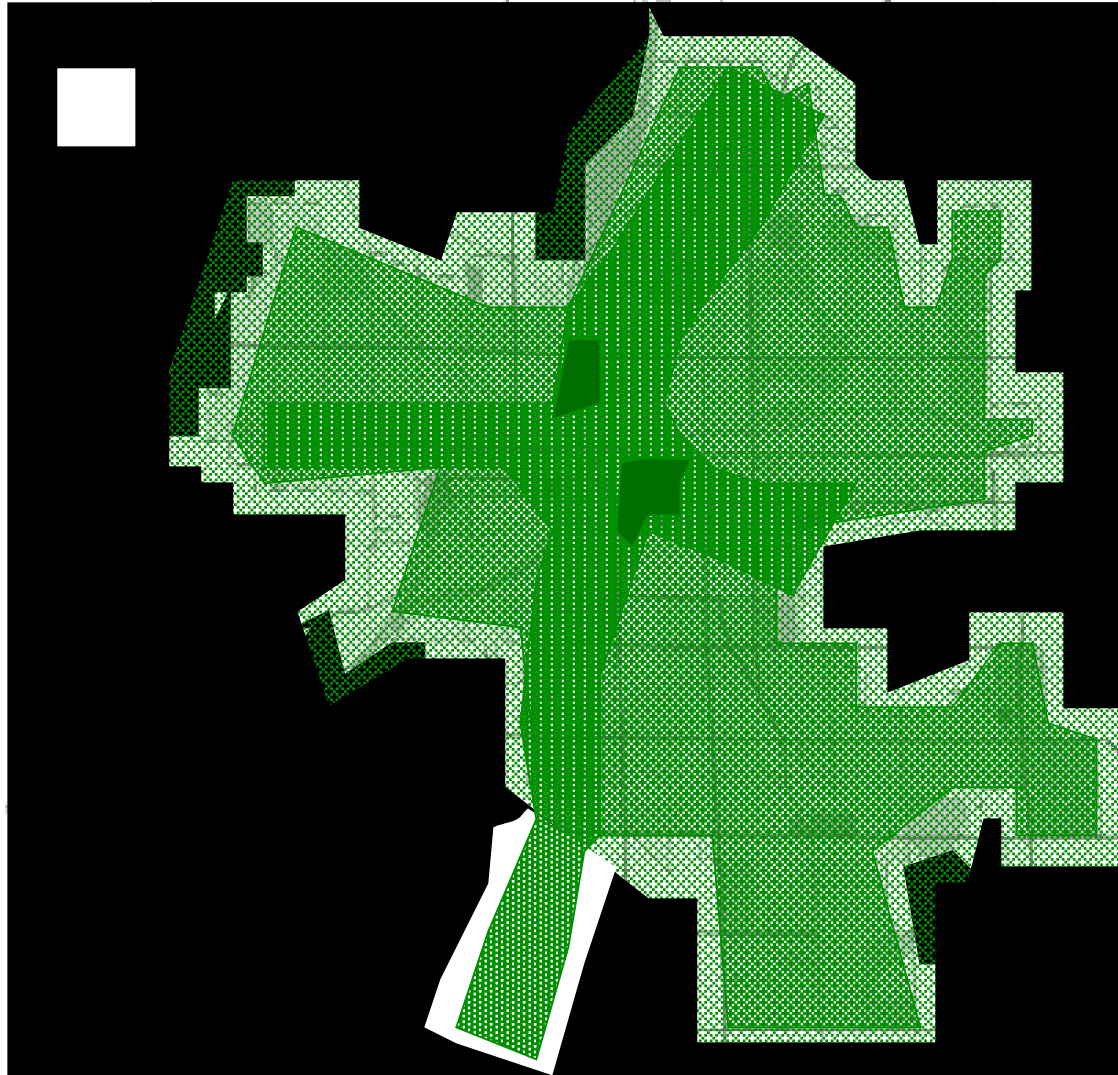
Where: Smart Location & Linkage - Credits

Adjacent

Infill or Redevelopment

Transit Service

Brownfields



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What: Neighborhood Pattern and Design



- Prerequisites
- Open Community
- Compact Development



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What: Neighborhood Pattern and Design

• Credits

- Compact Development
- Diversity of Uses
- Diversity of Housing Types
- Affordable Rental and For-Sale Housing
- Reduced Parking Footprint
- Street Network
- Walkable Streets
- Superior Pedestrian Experience
- Transit Facilities and Subsidies
- Access to Surrounding Vicinity
- Access to Passive and Active Public Spaces
- Local Food Production
- Community Outreach and Involvement



How:
Green Construction and Technology



- Prerequisites
- Erosion control



How: Green Construction and Technology

• Credits

- Certified Green Building
- Energy Efficient and Water Conserving Buildings
- Building Reuse: Adaptive and Historic
- Minimize Site Disturbance: During Construction and After
- Contaminant Reduction in Brownfield Remediation
- Maintain and Reduce Stormwater Runoff Rates
- Stormwater Treatment
- Hazardous Waste Pollution Prevention
- Heat Island Reduction
- Solar Building Orientation and Access Prevention
- On-Site Power Generation and Renewables
- District Heating, Cooling and Power
- Infrastructure Energy Efficiency
- Water efficient Irrigation
- Graywater and Stormwater Reuse
- Local and Recycled Materials
- Comprehensive Construction and Solid Waste Management
- Light Pollution Reduction



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Existing Public Adoption Strategies

- Criteria for developer selection/entitlement (Chicago)
- Criteria for public funding/sales tax exemption (IL)
- Used to determine development impact fees (Kane Co.)
- Appearance in planning RFP's (Minneapolis)

