



BROOKINGS INSTITUTION METROPOLITAN POLICY PROGRAM

A Smart Infrastructure Agenda for the 21st Century

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Preface:

- How you grow physically affects how you grow economically
- Bottom line is that it matters very much

WHERE you build
WHAT you build and
HOW you build it



Infrastructure in this context focuses mostly on surface transportation, water/sewer, housing, and other elements of the built environment.

According to a recent Brookings report*, the Grand Rapids metropolitan area:

- Had about 430,000 housing units in 2000. To accommodate growth, it is projected to need to build 266,000 more by 2030;
- It will need to double its existing commercial and office space;
- And only 9 metros are projected to need to build more new industrial square feet.

Where and how will all this new infrastructure be accommodated?

* SOURCE: Toward a New Metropolis: The Opportunity To Rebuild America, Brookings, 2004



A Smart Infrastructure Agenda for the 21st Century

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The context for the discussion about infrastructure

II

Nationally, major infrastructure challenges still exist

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Infrastructure finance is a real and growing concern

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The policy problem

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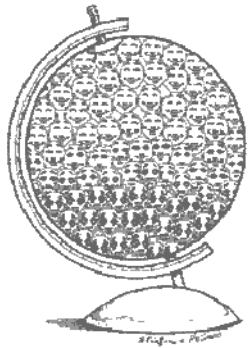
Towards a smart infrastructure agenda.

Profound demographic, economic, social, and cultural forces are reshaping the nation



Demographically, the country is growing, aging, and diversifying.

Economically, the nation is being transformed by globalization, deindustrialization, and technological innovation.



Culturally, the nation is changing its attitude towards cities and suburban living.



These changes are presenting new opportunities for cities and older, established suburbs

- **Young professionals**
 - **Childless couples**
 - **New immigrants**
 - **Empty nesters**
- **Elderly individuals**
- **Families with children**





Townhomes



Single detached



Apartments for rent



This growing and diverse population demands a range of choices in housing...

Accessory dwellings



Assisted living



Modern condos





Urban



Mixed use

...a range of choices in neighborhoods...

Single family



Town centers





Downtown



Main street

...a range of choices for shopping...

Shopping mall



Big box



Context



Non-motorized



Automobile

...and a range of choices for transportation.

Bus



Paratransit



Rail



The problem is that many places are not equipped to respond to these changes



Lack of housing types



Separated land use



Uneven metro growth



Automobile dominated



Declining commercial corridors

Cities and suburbs need to plan for change and rethink their attitudes toward several key issues:

DENSITY Today's demographic and market changes favor more housing choices and quality development

DESIGN More and more emphasis is being put on the value of place. The infrastructure is the connective tissue.

DIVERSITY Tolerant, inclusive places are highly sought-after and are able to respond more quickly to pressing challenges



Metropolitan areas with a range of options have an opportunity to attract and retain young professionals, childless couples, baby boomers, new immigrants and the assets of the knowledge economy.



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Congestion



Substandard transit



Crumbling water/sewer

Climate change

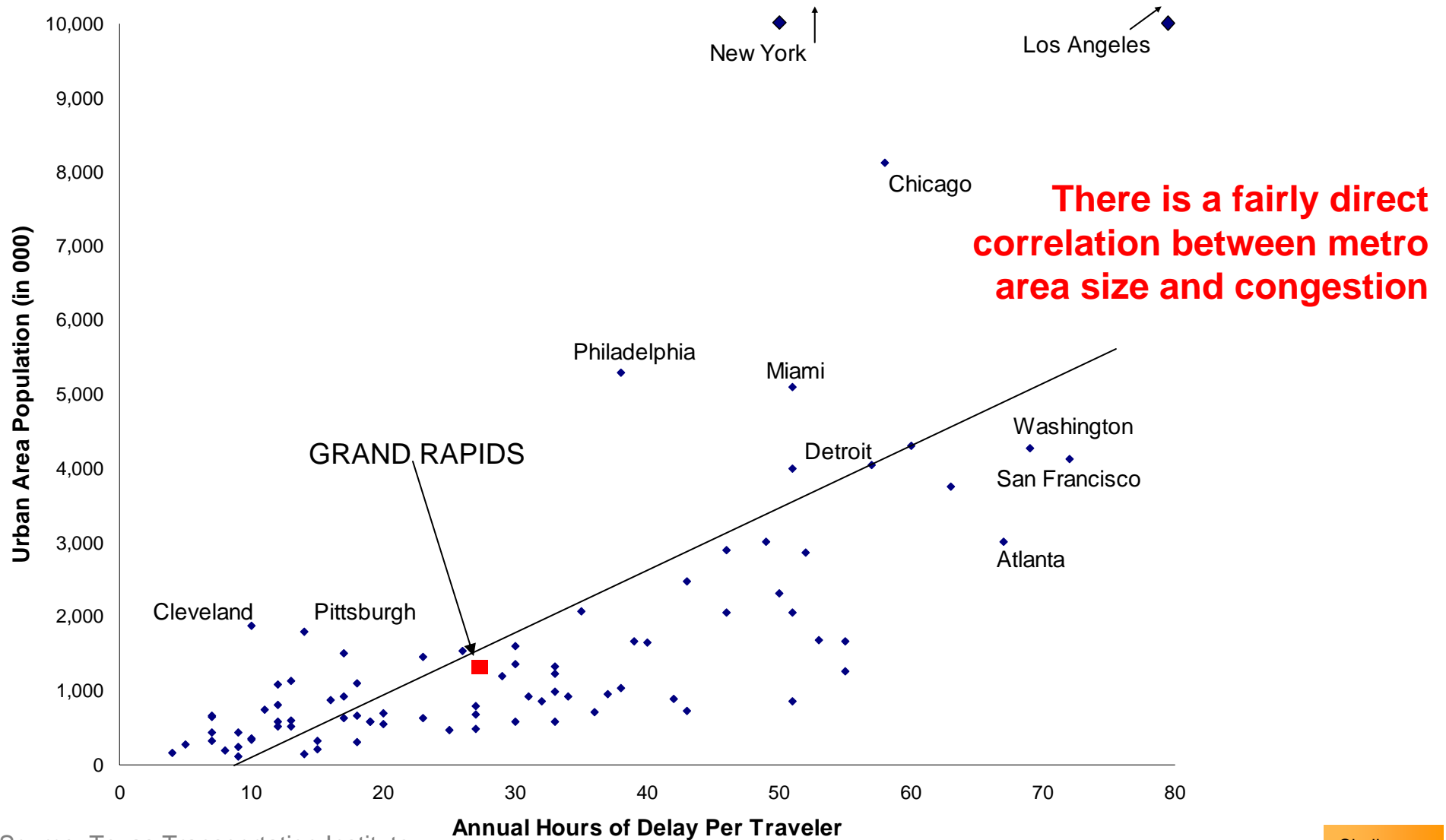


Job access



Severe challenges
related to
infrastructure
continue to plague
the largest metros

Congestion costs the American economy about \$200 billion/year
The total cost to the Grand Rapids area in 2003 was \$99 million in wasted time and fuel.

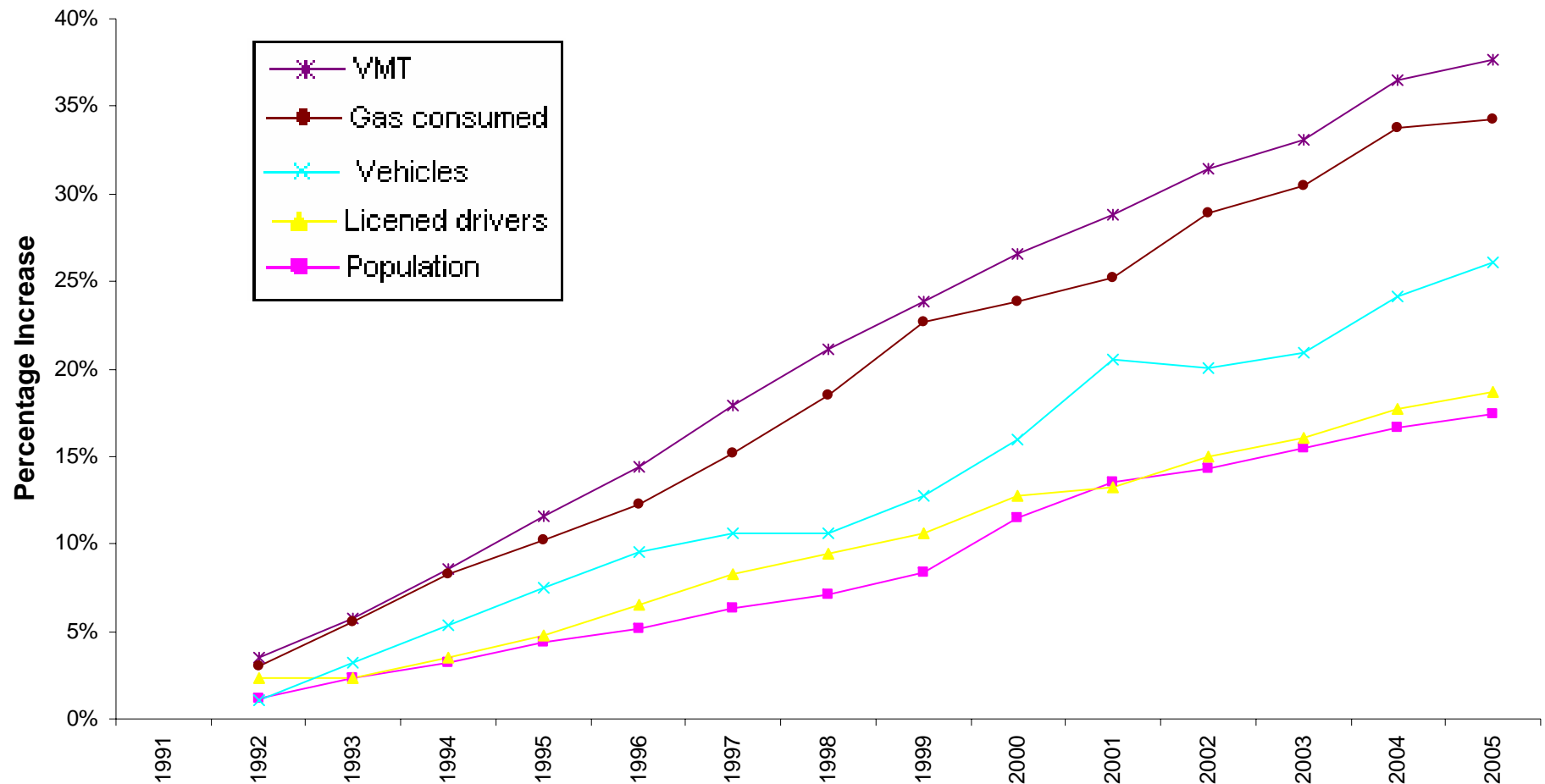


Source: Texas Transportation Institute

Challenges

On some level, the reason congestion is so pervasive is due to dependence on the automobile.

Conditions underlying growth in congestion



Source: Federal Highway Administration Highway Statistics Series

Source: Texas Transportation Institute

Challenges

In the 100 largest metro areas nearly half do not have any rail service and also have a bus volume per capita ratio lower than the national average.

Grand Rapids exemplifies this trend.

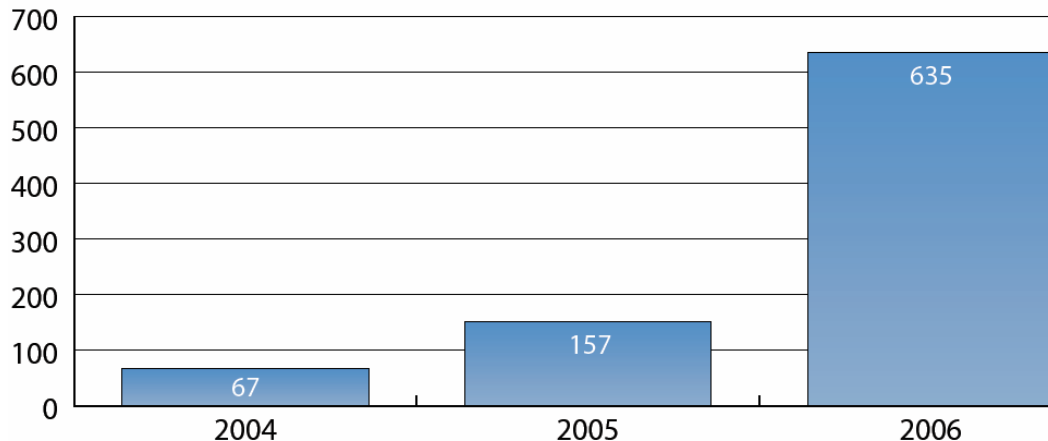
It is a major metro area but with less transit service than Davenport or Orlando. Amtrak ridership is very low in and around Grand Rapids: fewer boardings than Whitefish, Montana.



Next is that water and sewer infrastructure is outdated and outmoded

According to the EPA, Michigan's drinking and waste water infrastructure needs \$8 and \$4 billion, over the next 20 years.

Number of West Michigan Closed Beach Days (2004–2006)



Sewer separation work is ongoing. But the beaches still close a few times each year because of sewage overflows.

"We had two lake communities recently decline ... to build sorely-needed sewers because the cost of providing them was well over \$10,000 per household, and whose rates, even with low-interest financing was over \$100/month. We need to do a better job of either communicating to people the benefits ... or give them enough funding...." - Grand Rapids civil engineer

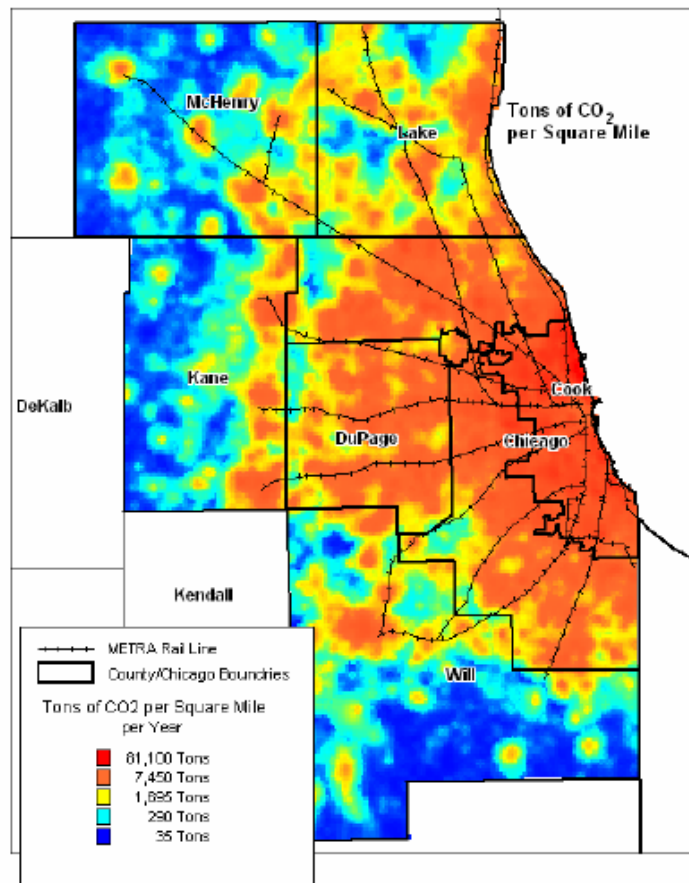
Climate change and greenhouse gases are a growing concern

Two Views of Cities and CO₂

CO₂ Generated by Automobiles in the Chicago Region per Year

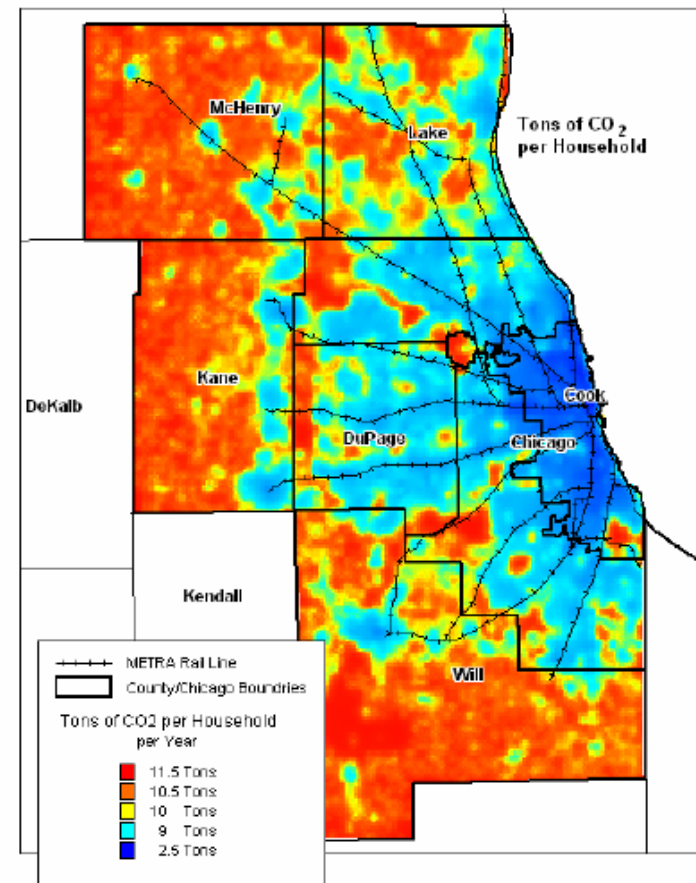
Traditional View:

Cities produce large amounts of GHGs.



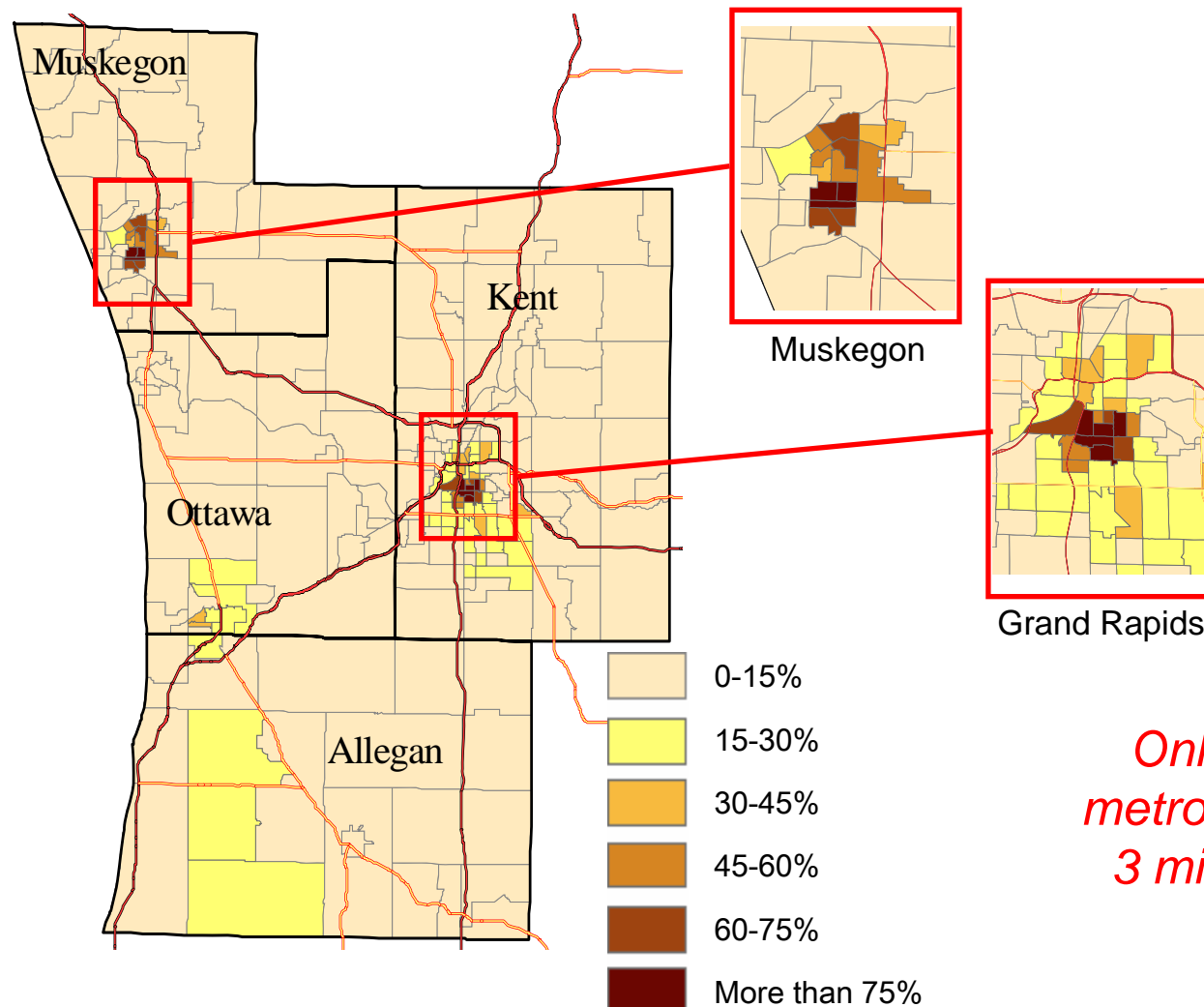
Emerging View:

City dwellers produce relatively low amounts of GHGs.



Each color represents one fifth of the land area on each map.

As economies and opportunities decentralize a spatial mismatch has arisen in many metros

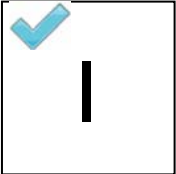


Percent of non-white residents, 2000

Only one-quarter of the metro area's jobs are within 3 miles of the urban core



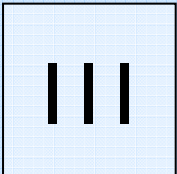
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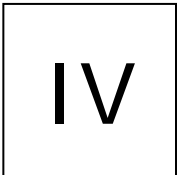
The context for the discussion about infrastructure



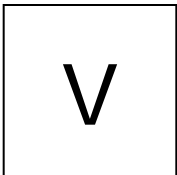
Nationally, major infrastructure challenges still exist



Infrastructure finance is a real and growing concern



The policy problem



Towards a smart infrastructure agenda.

There is a pervasive desire to invest in transportation infrastructure but little understanding of national needs

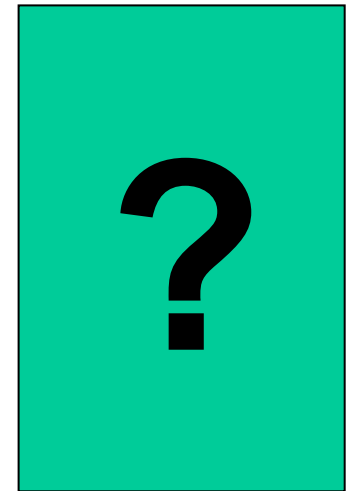
1956



1991

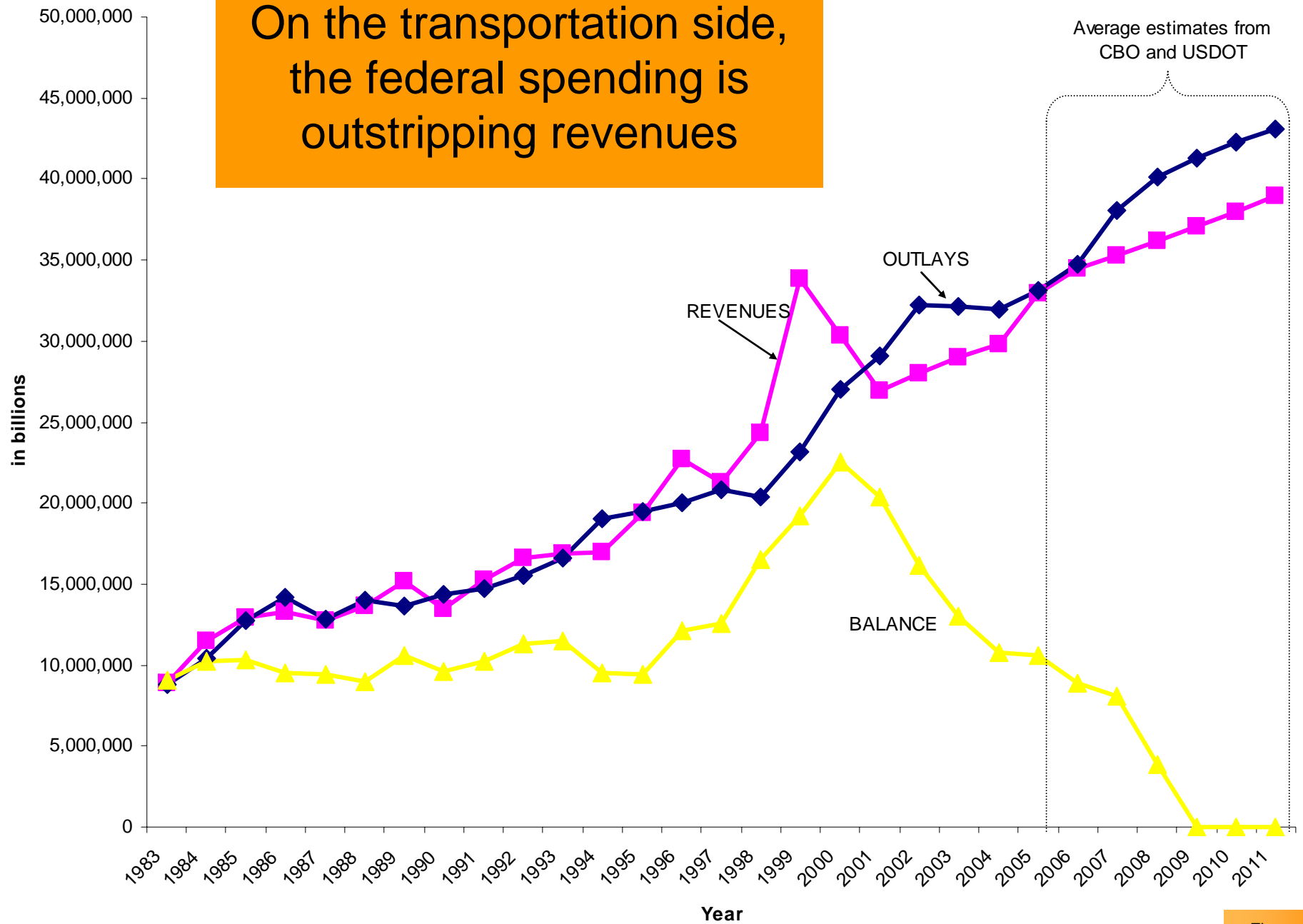


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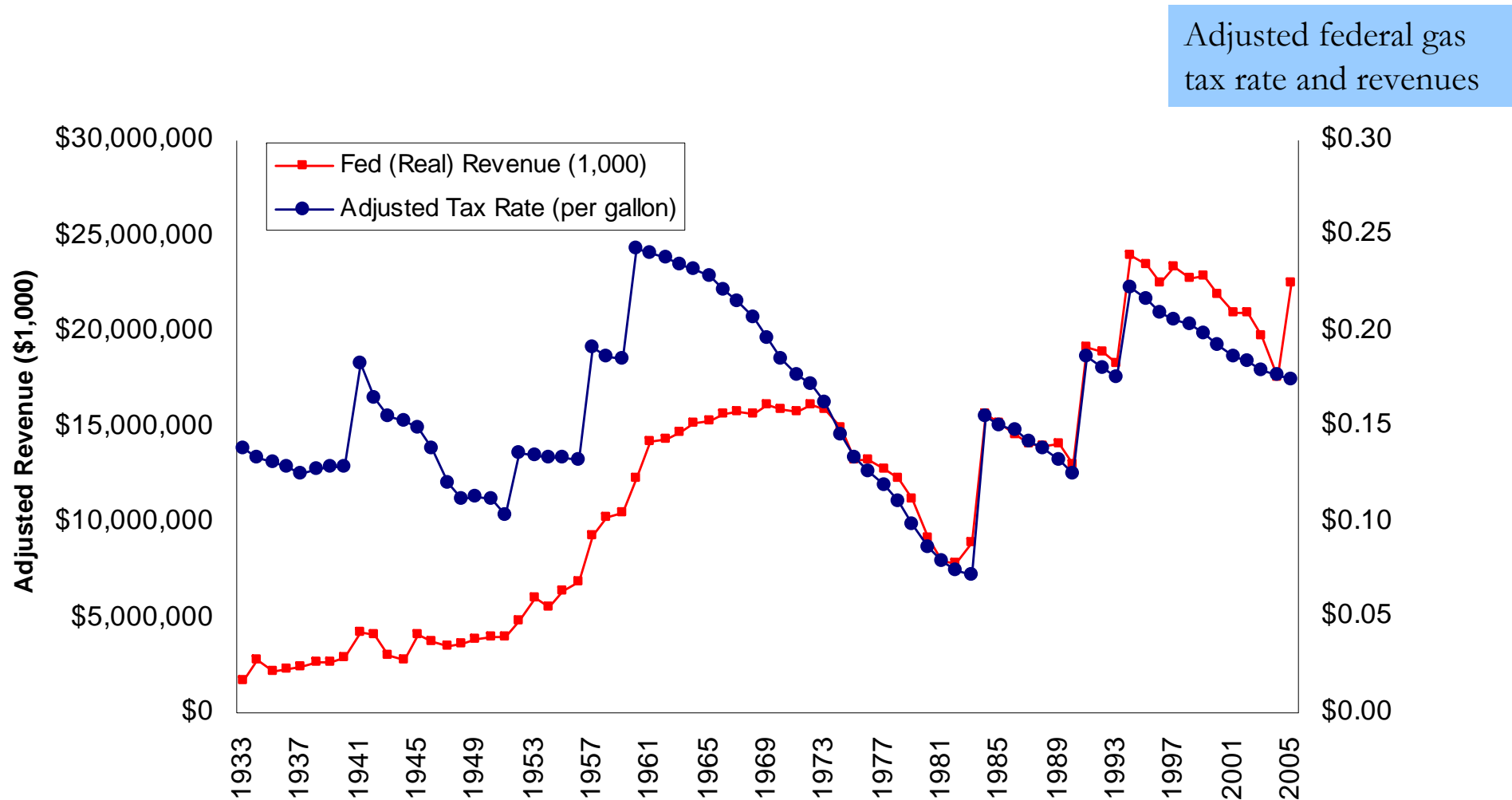


What should the national priorities be?
What should the state priorities be?
What should the metropolitan priorities be?

On the transportation side,
the federal spending is
outstripping revenues



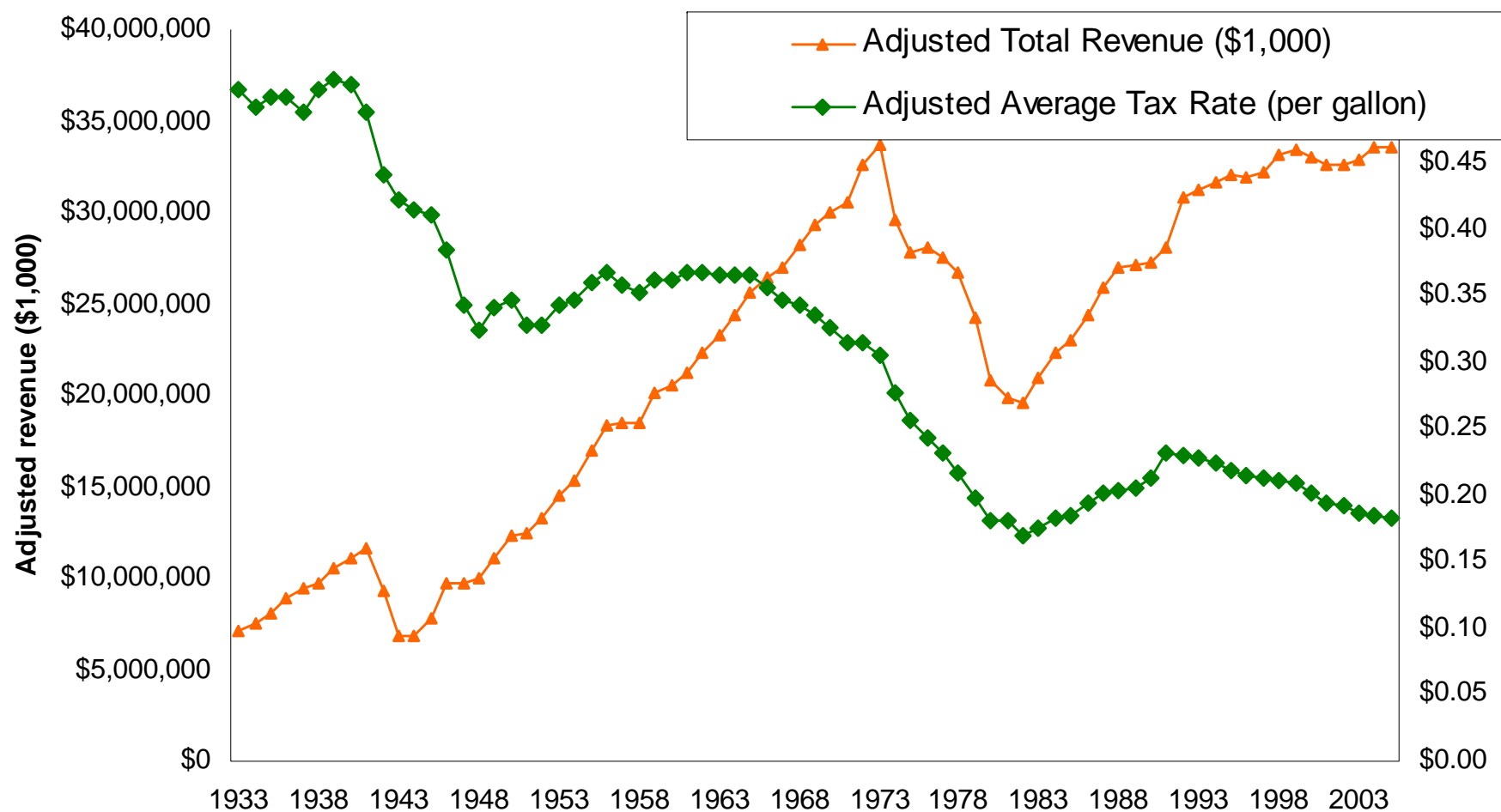
By not raising the federal gas tax – even to keep pace with inflation – receipts will continue to decline



Source: IRS, 2006; Puentes & Prince, Brookings, 2003

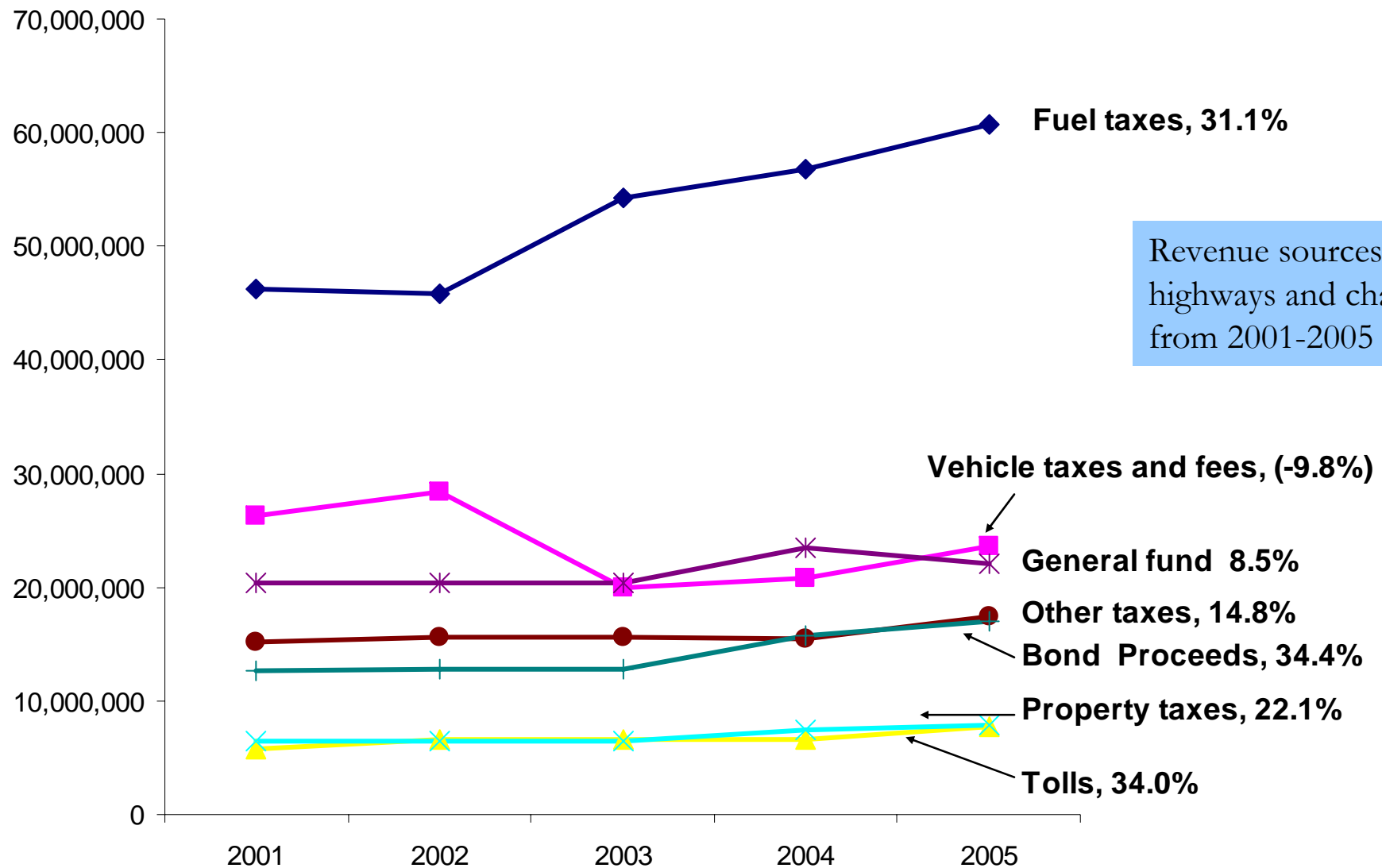
And on the state level, “real” state gas tax receipts are again leveling off.

Adjusted state gas tax rate and revenues



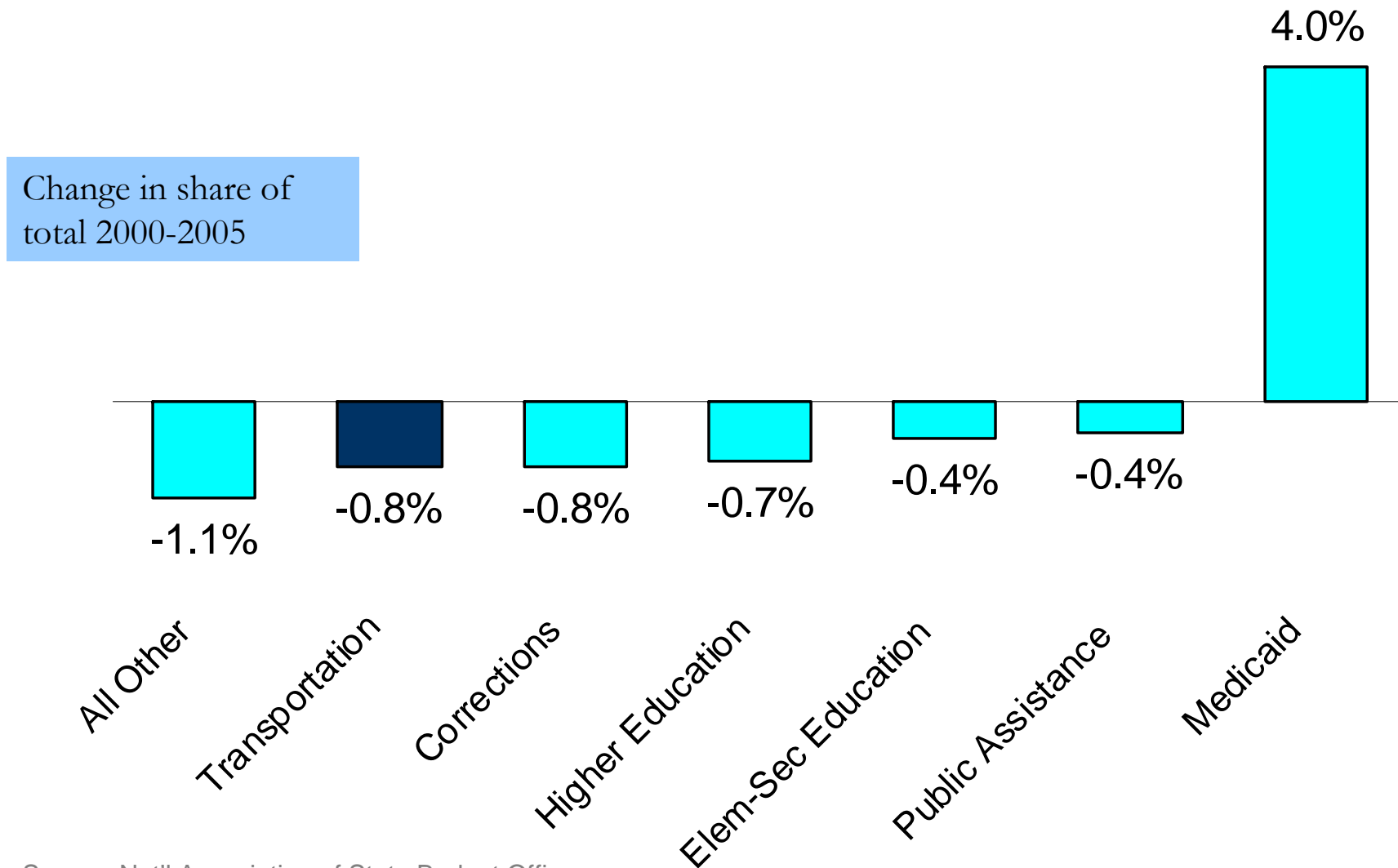
Source: FHWA, 2006; Puentes & Prince, Brookings, 2003

The gas tax still provides the vast amount of revenues for roads



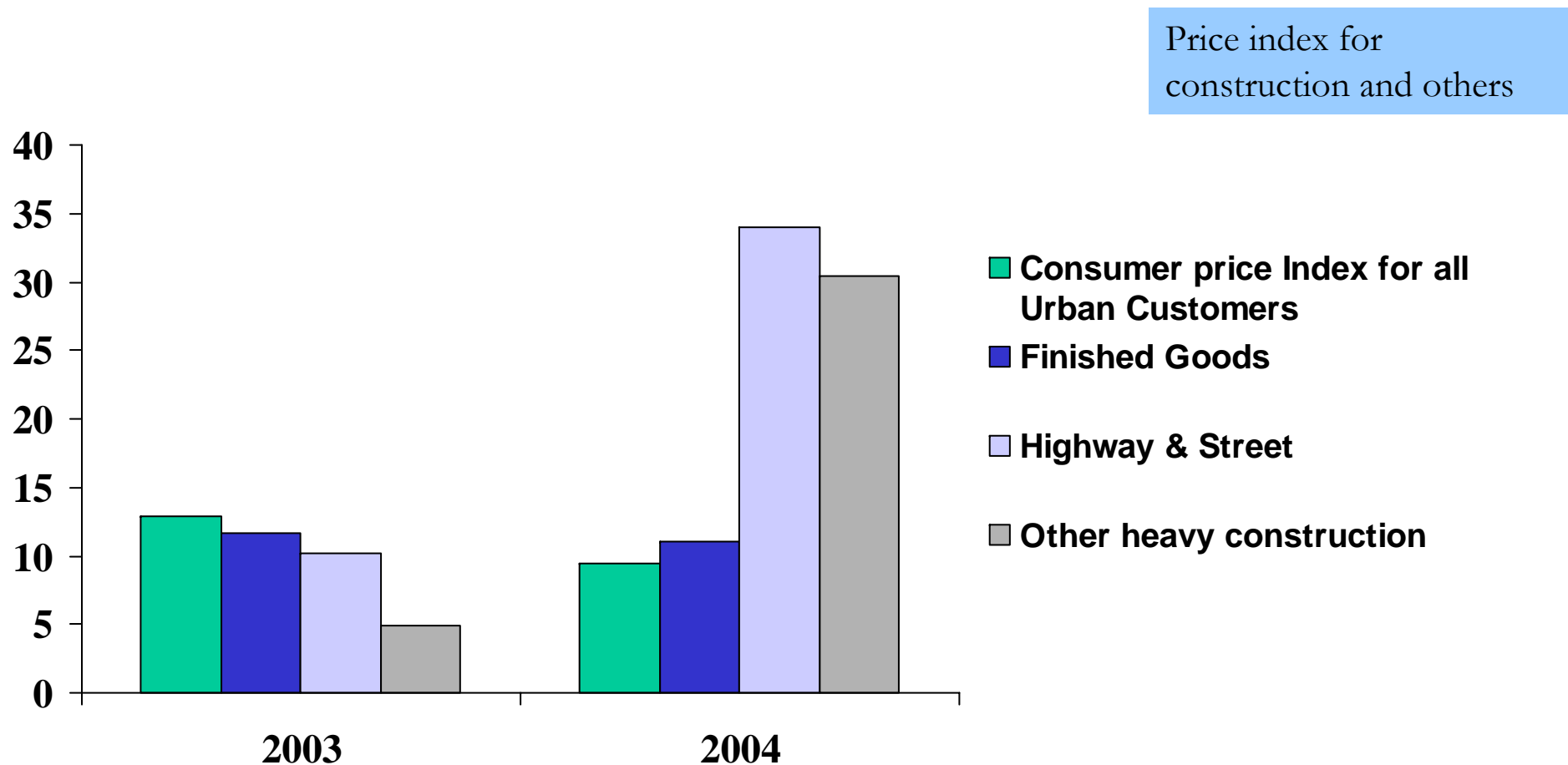
Source: FHWA and Puentes, Brookings, *forthcoming*

The share of state spending on transportation decreased more than any other major category from 2000-2004



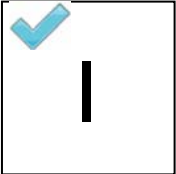
Source: Nat'l Association of State Budget Officers

The cost of construction materials is likely to continue to skyrocket





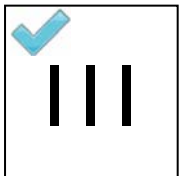
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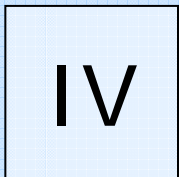
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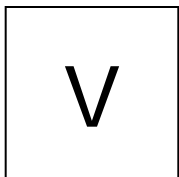
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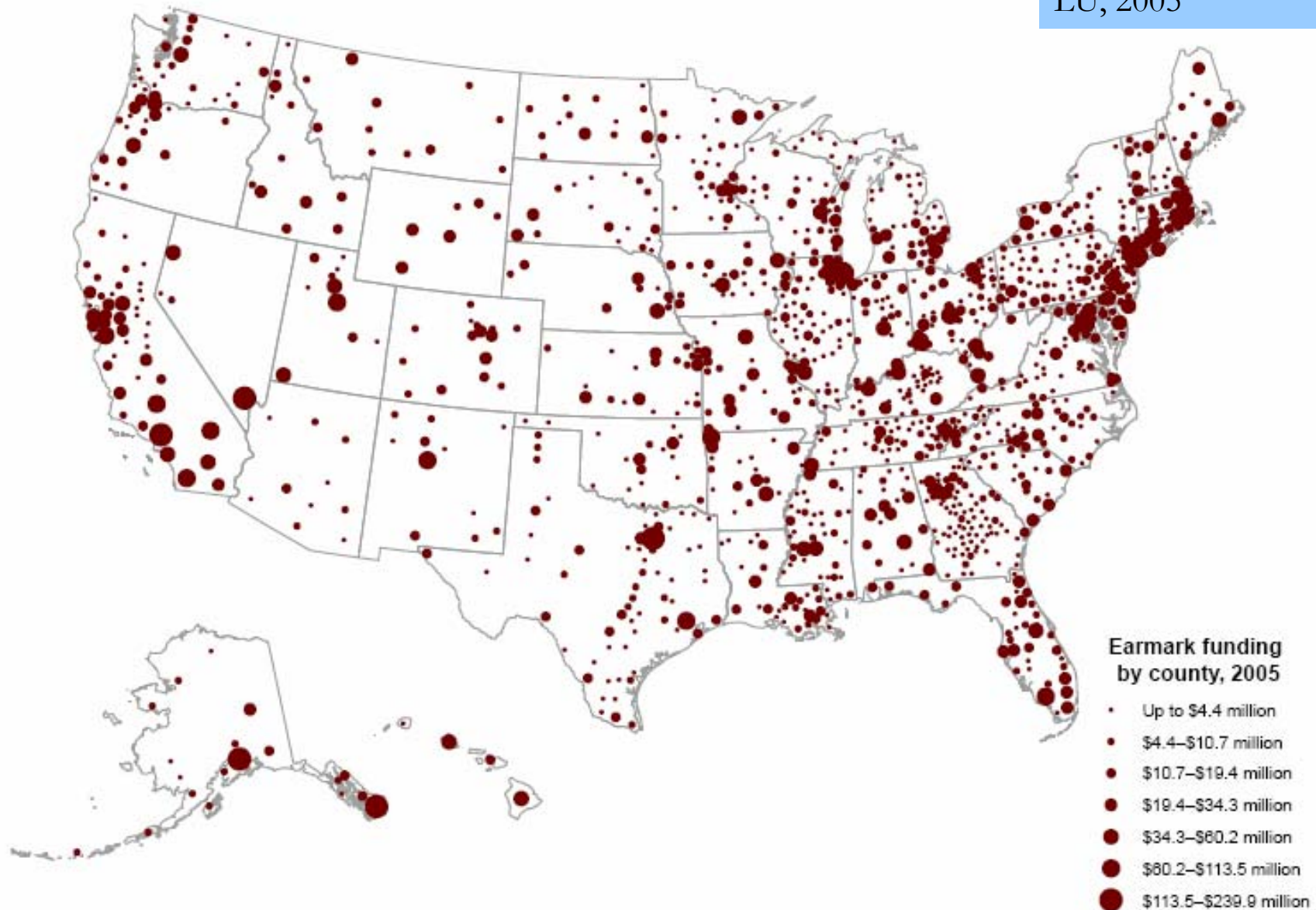
The policy problem



Towards a smart infrastructure agenda.

The federal government does not target high priority projects

Location of transportation earmarks from SAFETEA-LU, 2005



In many states the politics around infrastructure are fundamentally broken

1. ***No emphasis on better – as opposed to more – spending.***
 - Very little emphasis on reform.
2. ***No targeting of spending to critical areas.***
 - In a fiscally restrained climate infrastructure investments should be prioritized. Too often they're politicized.
3. ***No recognition of the primacy of metropolitan areas.***
 - Many states spend money disproportionately outside of metros.
4. ***No attention to reducing demand for spending.***
 - Few rewards for reducing land consumption. Investments are made on metropolitan plans that might be undesirable.
5. ***No leadership for making hard revenue raising decisions.***
 - Policy makers are fixated on “safe” alternatives to the gas tax

On the metropolitan level, infrastructure is too fragmented and compartmentalized



In transportation, the states run the show, the localities control land use, regional and local bodies govern transit. Inadequate capacity on the metro level.

Housing programs are state run or devolved to local public housing authorities. No metro focus and little attention given to the infrastructure needed to support it.



Economic development subsidies are all over the map and mostly go out, not in.

The public is often suspicious about new spending for infrastructure

Public trust in infrastructure policies and decision making is uneven.

Both spending *and* problems are increasing while most systems are not transparent, accountable, or accessible.

The public wants to know what they get in return for their investment and policy makers need to explain their vision clearly.





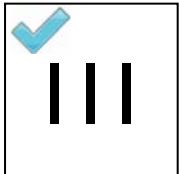
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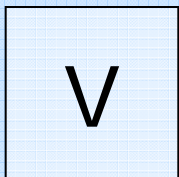
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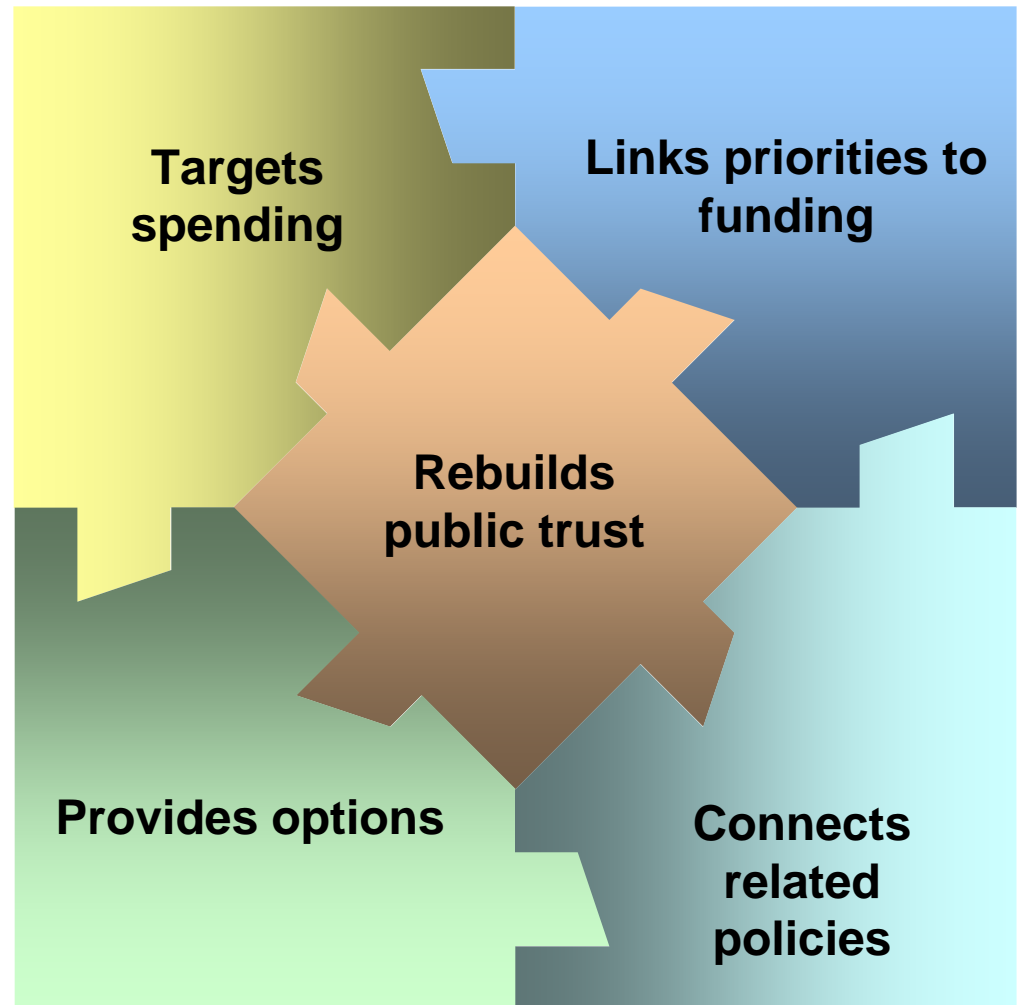


The policy problem



Towards a smart infrastructure agenda.

A smart infrastructure agenda (at any level of government) would be one that:



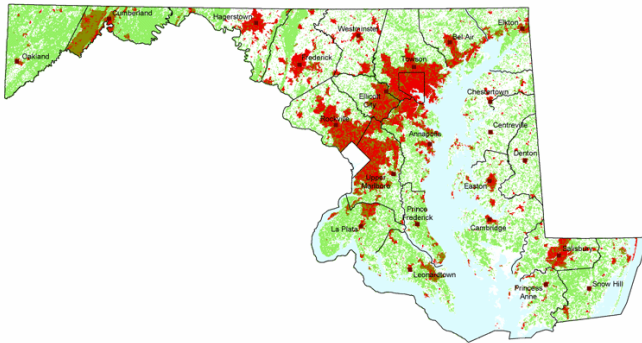
**Virginia DOT's
Dashboard project
makes project updates
available and updated.
Allows the public to
track a project from
advertisement through
construction.**

**Rebuilds
public trust**



Maryland denies the state's entire menu of infrastructure and economic development incentives to companies that want to build beyond existing water and sewer lines.

**Targets
spending**



FasTracks is the Denver region's plan to build over 100 miles of rail service, 18 miles of bus rapid transit, and accommodate massive increases in density around the stations.



Provides options

A new Illinois law makes it the first state to intentionally link economic development subsidies to jobs close to affordable housing or transit in order to avoid costly new infrastructure expenses.



**Connects
related
policies**

**California's
Infrastructure State
Revolving Fund gives
priority to projects that
are in existing
underserved areas,
have a housing plan,
revitalize downtowns,
and stimulate job
growth.**

**Links priorities to
funding**





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