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
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I  The context for the discussion about infrastructure

II  Nationally, major infrastructure challenges still exist

III  Infrastructure finance is a real and growing concern

IV  The policy problem

V  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
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
...a range of choices for shopping...
…and a range of choices for transportation.
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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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.

There is a fairly direct correlation between metro area size and congestion.
On some level, the reason congestion is so pervasive is due to dependence on the automobile.

Conditions underlying growth in congestion
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.

Source: Brookings analysis of FTA data
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)

![Bar graph showing the number of closed beach days from 2004 to 2006.](image)

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

Source: EPA Clean Water Needs and ASCE Infrastructure Report Card
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.

Source: Center for Neighborhood Technology
As economies and opportunities decentralize, a spatial mismatch has arisen in many metros. Only one-quarter of the metro area’s jobs are within 3 miles of the urban core.
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There is a pervasive desire to invest in transportation infrastructure but little understanding of national needs.

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.

Adjusted federal gas tax rate and revenues

Source: IRS, 2006; Puentes & Prince, Brookings, 2003
And on the state level, “real” state gas tax receipts are again leveling off.

Source: FHWA, 2006; Puentes & Prince, Brookings, 2003
The gas tax still provides the vast amount of revenues for roads.

Revenue sources for highways and change from 2001-2005:
- Fuel taxes, 31.1%
- Vehicle taxes and fees, (-9.8%)
- Tolls, 34.0%
- Property taxes, 22.1%
- General fund 8.5%
- Other taxes, 14.8%
- Bond Proceeds, 34.4%

Source: FHWA and Puentes, Brookings, forthcoming
The share of state spending on transportation decreased more than any other major category from 2000-2004.

Change in share of total 2000-2005:

- All Other: -1.1%
- Transportation: -0.8%
- Corrections: -0.8%
- Higher Education: -0.7%
- Elem-Sec Education: -0.4%
- Public Assistance: -0.4%
- Medicaid: 4.0%

Source: Nat’l Association of State Budget Officers
The cost of construction materials is likely to continue to skyrocket.

Source: Simonson, Testimony to National Surface Transportation and Policy Revenue Study Commission.
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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.
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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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.
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.
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.
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.
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.
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www.brookings.edu/metro

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Connects places

Rebuilds public trust

Targets spending

Links priorities to funding

Connects housing econ development