

Bolder Policies Better Communities Brighter Future



Smart Cities

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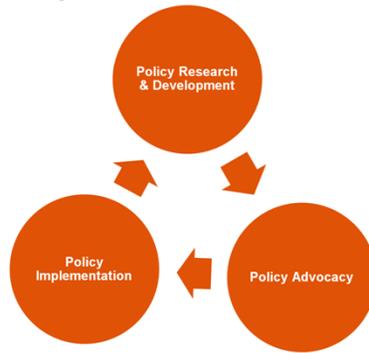
I am Peter Skosey, Vice President of the Metropolitan Planning council. I am going to talk about how American cities and regions need Bolder policies to build better communities for a brighter future. We've grown fat and lazy as a country

Bolder Policies, Better Communities, Brighter Future

- **The set up:** Post-war U.S. economic boom masked poor infrastructure spending decisions
- **The problem:** \$7.3 billion/year cost of congestion in Chicago
- **The solution:** Smarter spending, reduce demand, maximize use of existing infrastructure
 - Technology
- **The result:** Better communities

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Since 1934, the Metropolitan Planning Council (MPC) has been dedicated to shaping a more sustainable and prosperous greater Chicago region. As an independent, nonprofit, nonpartisan organization, MPC serves communities and residents by developing, promoting and implementing solutions for sound regional growth.

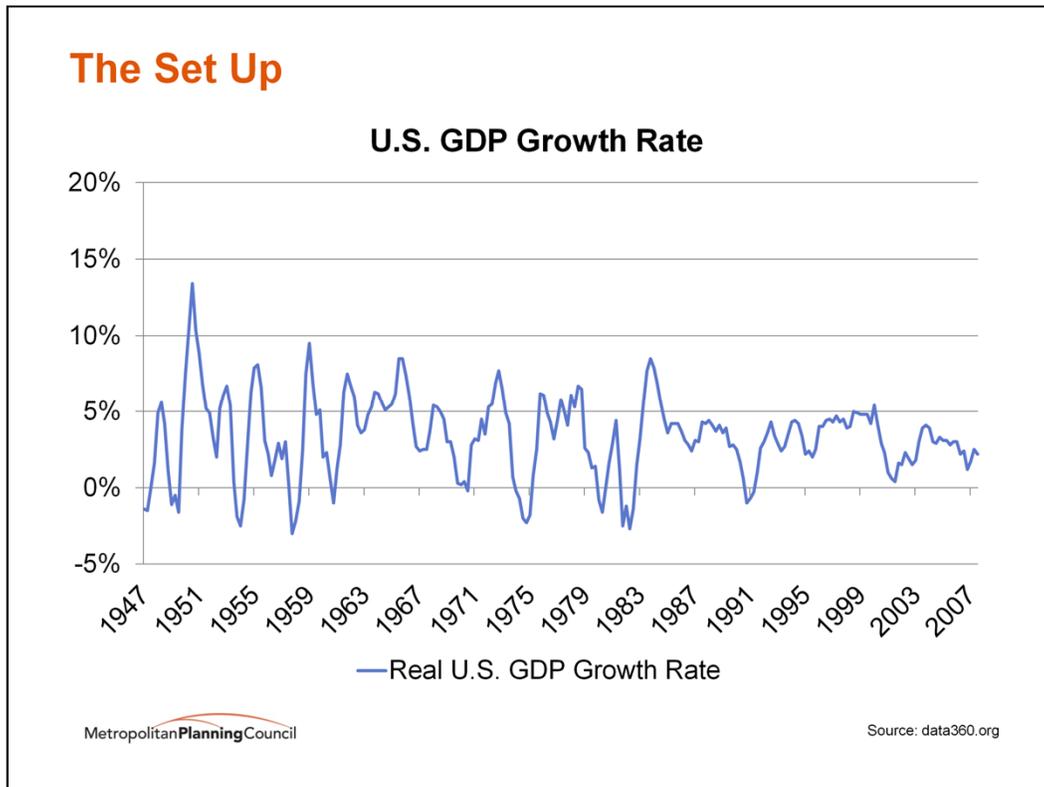


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Policy research & development is done through direct research and the use of models tested in communities around the region.

Policy advocacy is done through education and outreach to policymakers at all levels of government.

Policy implementation is done through the practical application of MPC-designed tools communities can use.



Looking back

Economic growth in the current decade has been slower than in any decade since before World War II.

Inequality has risen sharply, growth has gone to a relatively small slice of the population.

Real value accounts for inflation. Large inflation during the 70's

The Set Up

Economy masks poor investment decisions

- After World War II the federal government's debt equaled 120 percent of GDP
- Economic growth of the 1950s and '60s quickly whittled that debt away.
- No competition from Asia, India, etc.



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In the Hey Day, Tax *revenues* increase without *raising taxes*

Economic growth in '50-'60 was 4% per year compared to 2.5% today

Every one percent of GDP growth brings in \$150 billion dollars (\$15 trillion economy) (current US Debt is \$14.419 trillion) (\$46,000 per citizen \$129,000 per tax payer) Medicare, social security and defense.

Average economic growth in the current decade has been the slowest of any since 1930's (great depression)

Over the next 25 years if growth could be lifted by just **one tenth of a percentage point** a year the extra tax revenue would pay for Obama's stimulus (AARA)

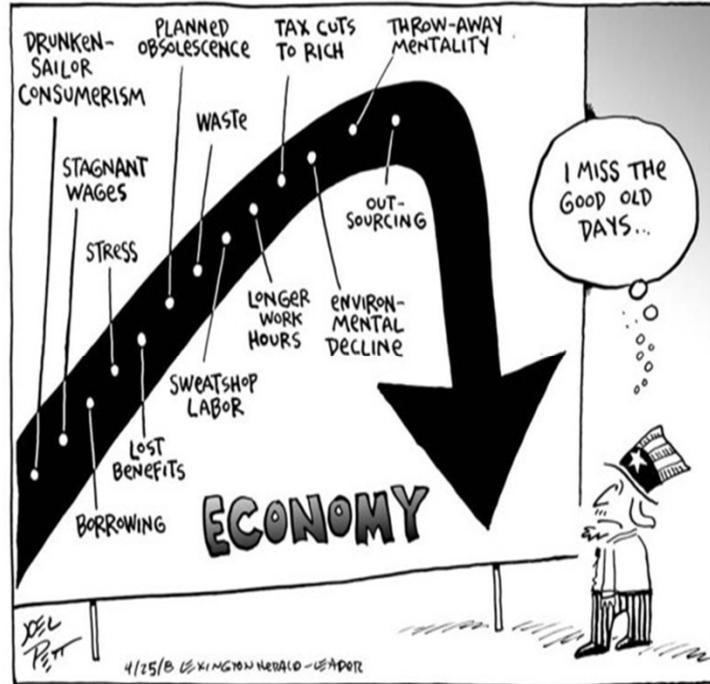
- Fast growth masks problems

- Slow growth reveals them

SO

- What's the strategy for the new American economy?

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In good economic times the politics to beat back bad investment policies doesn't exist

2010 US GNP - \$15 trillion

2010 US GDP - \$14.7 trillion

This led to a nation that was Complacent – expecting government to pay for everything but not wanting to pay taxes to fund government, “Fat and Lazy” we like to say



In terms of American Infrastructure that looked like this:

Completed in 1993

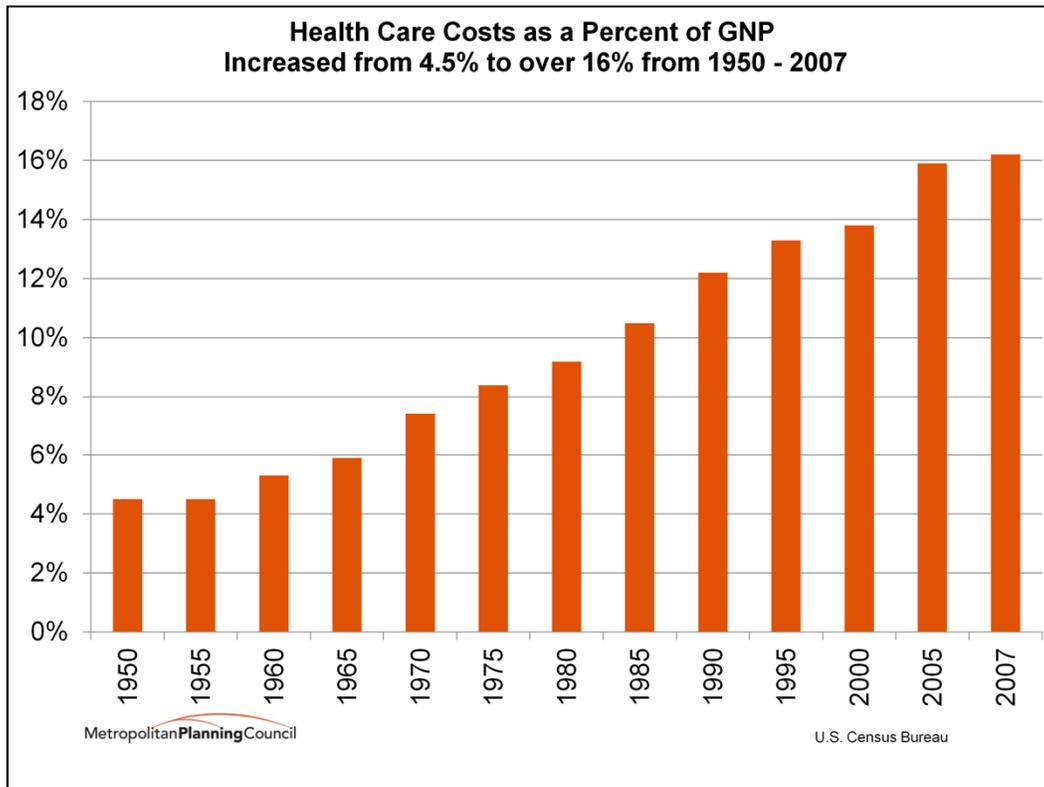
“biggest, tallest, most costly structure yet built by California Department of Transportation” (and ever?)

Five-level stack interchange of I-110 and I-105 in Los Angeles, near Watts

Includes direct HOV-to-HOV lane ramps, light rail station, and bus rapid transit (Harbor Transitway) station



In terms of American People, it looked like this:
Created a fat and lazy culture. (remote caddy, multiple remotes, sleepy dog,) we want instant gratification.



United States rates of obesity have doubled since 1970 to over 30% . One out of three American children is obese

Four major categories of economic impact linked with the obesity epidemic:

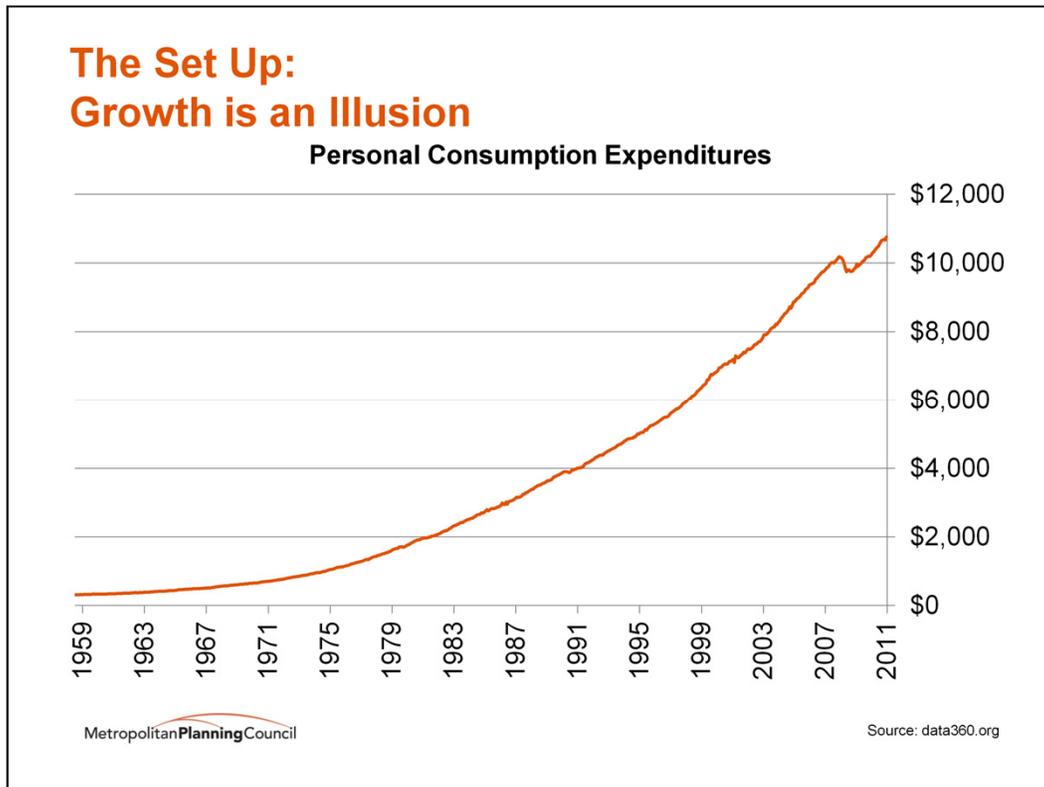
- Direct medical costs
- Productivity costs
- Transportation costs
- Human capital costs

Livable communities could turn this around

- Brookings
- direct medical costs
- productivity costs - Absenteeism, disability, health care costs
- transportation costs – larger costs, paratransit,
- human capital costs – negative relationship between weight and GPA

Note: GDP is the market value of everything produced within a country; GNP is the value of what's produced by a country's residents, no matter where they live.

The health care slide is GNP because that's what the Census based the data on.



We were lulled into a false sense of complacency as personal consumption increased – TV's, iPads, Cars and even houses.

Economists predict on it's current path economy will grow **slower** than ever before

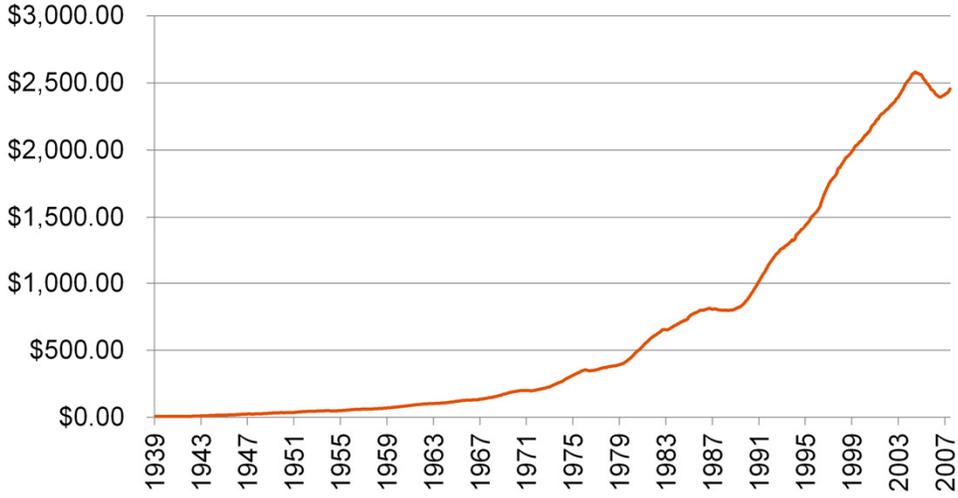
Two engines of economy – consumer spending and Wall Street that led growth are an **illusion**

Consumer debt and spending lifted short term growth at the expense of future growth

Wall Street activities had little real value

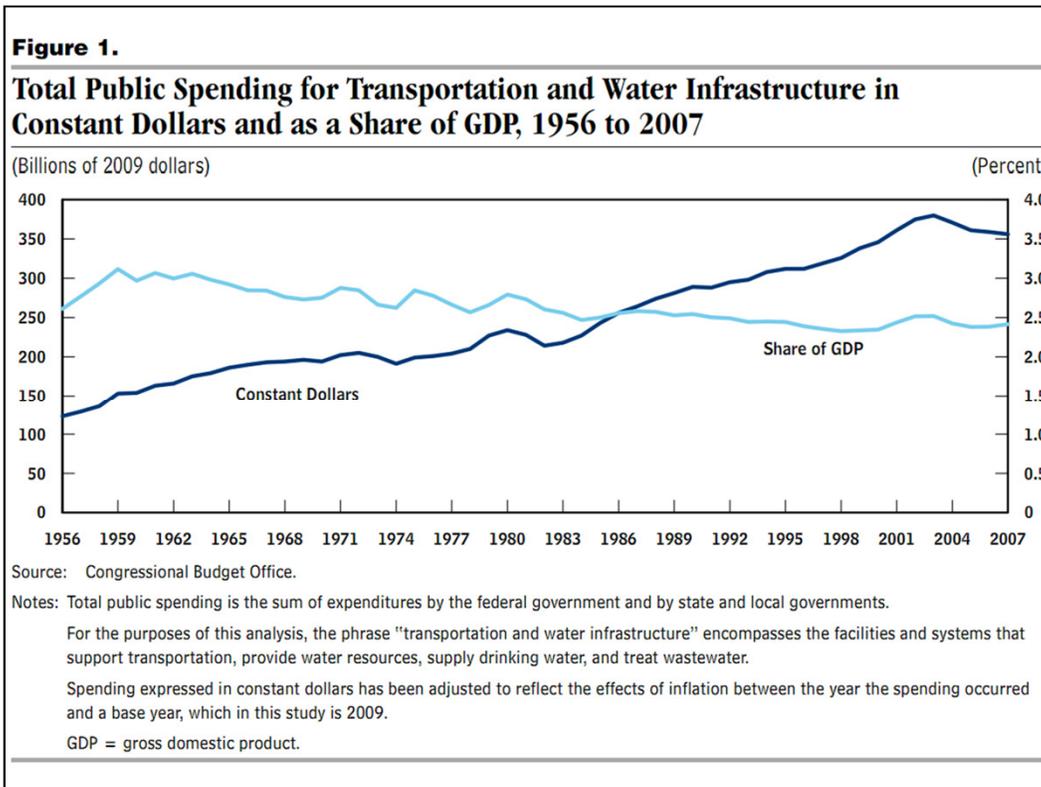
The Set Up: Growth is an Illusion

Total Consumer Credit Outstanding



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Source: data360.org



China spends 9%. Europe spends 5%. U.S. 2% (MSNBC)

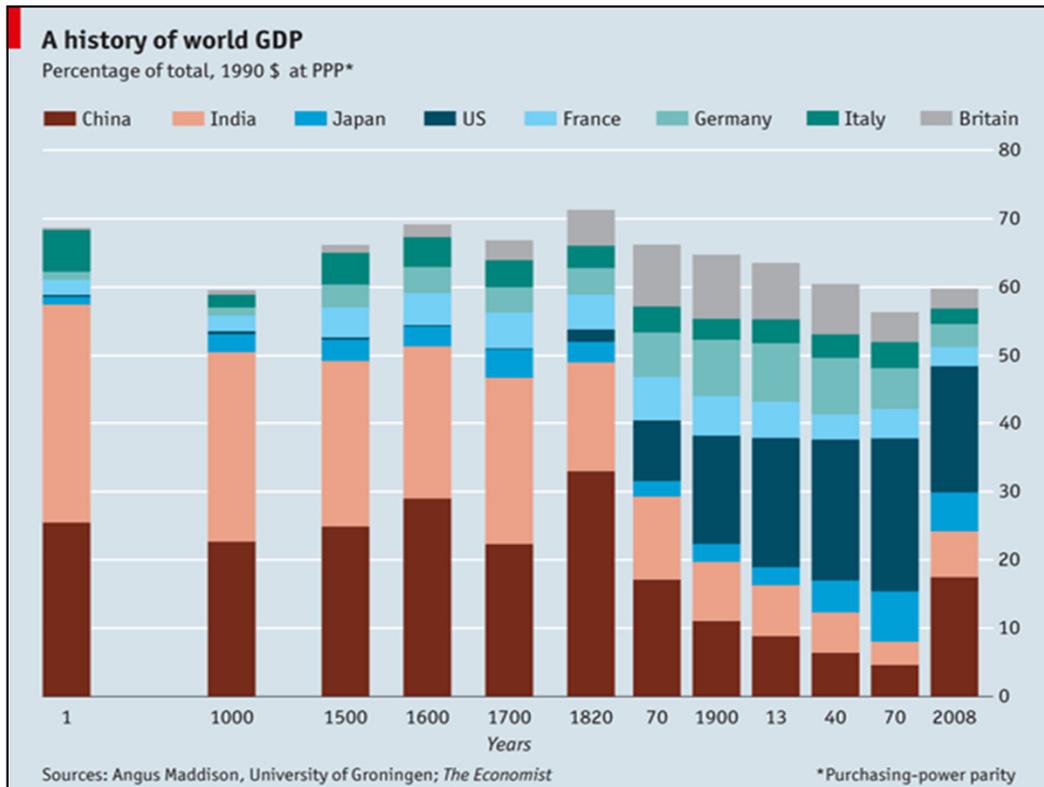
(current transportation bill proposal is \$240 billion is 1.6% of GDP)

The past decades of economic growth have created a culture that is.....(next slide)

Source: Congressional Budget Office, Public Spending on Transportation and Water Infrastructure, 2010

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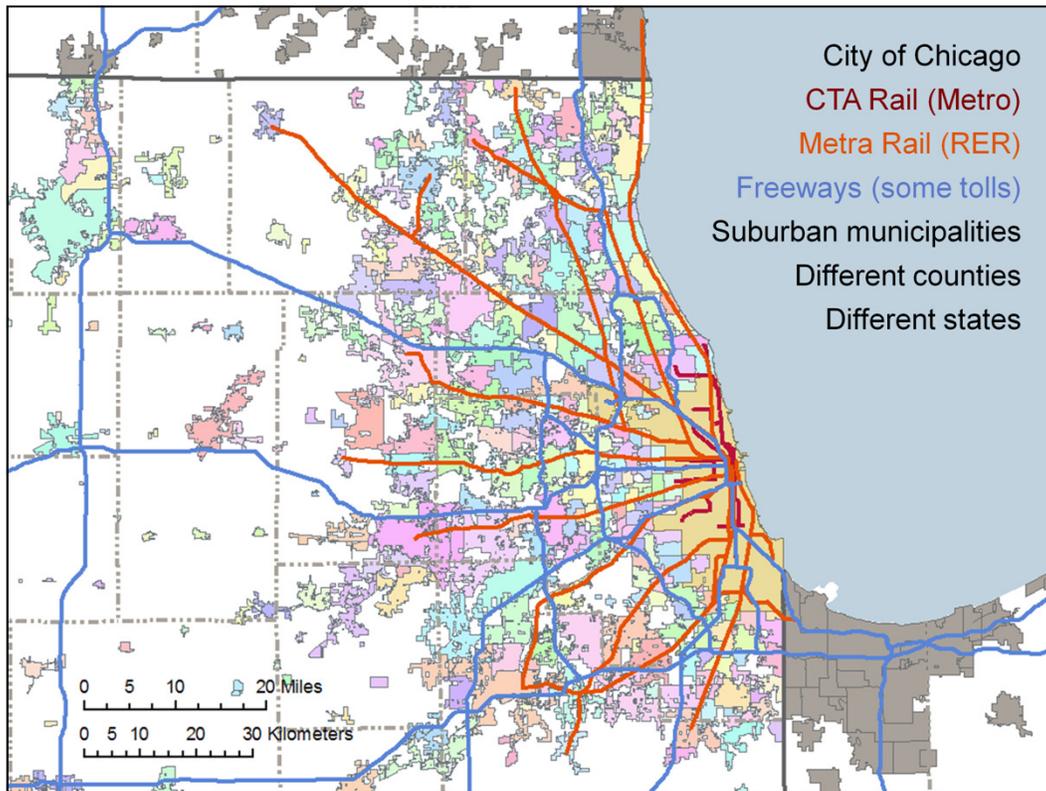
Today, the US spends 2.0% of GNP on Infrastructure.

China and India's share of Global GDP is increasing while the US's is decreasing. (not as badly as Germany's though)

(Purchasing –power parity adjusts for exchange rates.)

Note: **GDP** is the market value of everything produced within a country; **GNP** is the value of what's produced by a country's residents, no matter where they live.

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Regional population is: 8,444,447 +3.6% since 2000

Chicago population is 2,695,598 -6.9% since 2000

The Problem: Congestion Costs the Chicago Region

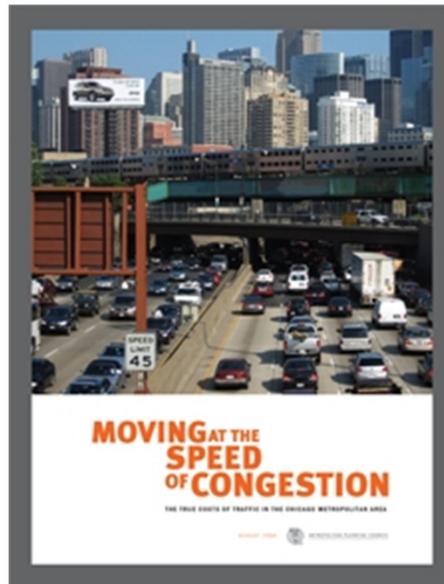
\$7.3 billion a year

- \$33 million in environmental damages
- \$354 million in wasted fuel
- \$6.9 billion in wasted time (2 ½ days/year/commuter)

and

- **87,000** jobs not created.
- \$14.76/hour/commuter stuck in traffic.

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The Solution: Build Smarter Communities!

Smarter spending

Reduce demand

**Maximizing existing
infrastructure**
•Technology

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The solution is a three pronged approach to transportation planning and investments.

Smarter Spending

Performance Criteria

- key to place based strategies
- allows multiple goals

Federal Programs

- Surface Transportation Bill
- TIGER Grants

Regional Plans

- CMAP Major Projects

Public Private Partnerships & Infrastructure Banks

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“This is all about return on investment — a smart business plan for communities. Are we reducing vehicle miles traveled? Are we producing jobs? Are more people being educated? ... Are the balance of investments being made between highways, bridges, and mass transit?”

– Adolfo Carrion, Former Director,
White
House Office of Urban Affairs

Corrallary bill here in DC, National Transportation Objectives Act, HR 2724

IDOT regions do not match DCEO or IEPA

Reduce Demand

Land Use

- Employer Assisted Housing
- Mixed Income Transit Oriented Development

Encourage Alternative Travel Modes

- Bike Sharing

Placemaking

- ALL public spaces



“Increased commitment to and investment in bicycle facilities and walking networks can help meet goals for cleaner, healthier air; less congested roadways; and more livable, safe, cost-efficient communities.”

Ray LaHood, Secretary of Transportation, March 15, 2010

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2040 supports policy-based efforts to improve the bicycle and pedestrian systems, such as the use of Complete Streets principles to accommodate non-motorized travel in roadway design.

Land Use: Density , Mixed income Transit Oriented Development (MITOD) , Reduce Jobs/Housing Mismatch

Alternative Modes: Transit, Bike, Pedestrian

Placemaking: Train Stations, Streets, Plazas and Parks

Maximizing Use of Existing Infrastructure

Pricing

- Parking
- Tolls

Highways and Tollways

- Managed Lanes
- Bus on shoulder service
- Congestion Pricing
 - MnPass, Minnesota

Bus Rapid Transit

- Western Avenue

Technology

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- Relates back to redevelopment/infil. Connection to existing facilities, towns, schools, etc. better land use connection
- MnPass - In 2005, nine miles of carpool lanes along Minnesota's I-394 corridor were converted into toll lanes
- 940,000 vehicles use every year
- Tolls are adjusted hourly based on the level of congestion
- Average toll cost drivers \$1 to \$4 during rush hour
- More than 60 percent of residents support the program, and more than 90 percent of toll lane users maintain a very high level of satisfaction
- Because of the success the federal government provided Minnesota with a \$133 million grant to expand the program

Maximizing the Use of Existing Infrastructure with Technology

Chicago Transit

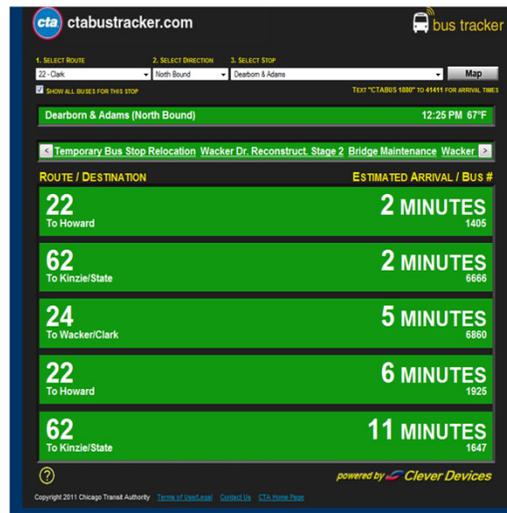
- Bus Tracker
- Train Tracker
- GoRoo (trip planner)

Bus Rapid Transit

- Traffic signal prioritization

Future Plans

- Chicago Traffic Tracker
- Universal Fare Card
- Pay by smartphone
- Real time pedestrian counting



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- We have some limited experience here in Chicago with technology, but we're going and learning.
- Bus TSP on Western (CTA) and Pace routes serving the Harvey Transportation Center.
- Go Roo is RTA serving Meta, CTA, and Pace

Maximizing the Use of Existing Infrastructure with Technology

Congestion Pricing

MPC & Illinois Tollway Authority

- *Moving at the Speed of Congestion*

Stockholm

- Cordon Pricing
- Transit Component

Berlin

- Truck Tolling
- Next Bus
- Verkehrsverbund Berlin-Brandenburg Fare Card



Maximizing the Use of Existing Infrastructure with Technology

Pedestrian

Dynamic Crosswalk Signals

Parking

Dynamic Variable Pricing

- SF Park

Bike Share

- Seville
- Berlin
- Paris
- Chicago



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- Point here on bikes is to say this reduces demand for auto travel at a minimum cost
- Chicago plans to begin with 2,000 bikes next year (2012) and expanding to 5,000 shortly there-after.
- Dynamic Variable Pricing – what the future could hold for Chicago

Thank You

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Multimodal Integrated Corridor Management

Dallas: US 75 Corridor

- Predict travel conditions 30 minutes into the future
- Wireless and web-based alerts for travelers
- Improve incident management through interagency coordination

San Diego: I-15 Corridor

- Use road sensors, video, and traveler information to reduce congestion
- Wireless and web-based alerts for travelers with comparative travel times, parking availability, and expected delays
- Ability to adjust traffic signals and ramp meters to direct travelers to HOV and HOT lanes and bus rapid transit.

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Eight US DOT Pioneer Sites



•Multimodal Integrated Corridor Management: operational coordination of multiple transportation networks and cross network connections comprising a corridor and the coordination among institutions responsible for corridor mobility.

The USDOT has selected eight "Pioneer Sites" as part of its 7-year ICM Initiative.

All eight Pioneer Sites are recognized leaders in the area of congestion management. For example, all have implemented real-time signal control on their arterials. Many have implemented high-occupancy vehicle (HOV) and value-pricing strategies, others have advanced bus operations that include express bus and bus rapid transit services.

There are three stages to the USDOT partnership with the

Pioneer Sites:

Stage 1—Concept Development (FY07-08): COMPLETE.

All eight sites will develop site-specific concept of operations (CONOPS) and System Requirements documents. Each site provided sample data for evaluation. These documents are available from the ICM Knowledgebase.

Stage 2—Modeling (FY09–FY10). Dallas, Minneapolis, and San Diego were selected, to model their proposed ICM systems. All three sites have successfully modeled their proposed ICM systems.

Stage 3—Demonstration and Evaluation (FY10–FY13).

Dallas and San Diego were selected to demonstrate their ICM strategies. These sites will demonstrate the application of institutional, operational and technical integration approaches in the field and document implementation issues and operational benefits.

Dallas: Dallas: U.S. 75 Corridor

The U.S. 75 project is a collaborative effort led by Dallas Area Rapid Transit (DART) in collaboration with USDOT; the cities of Dallas, Plano, Richardson, and University Park; the town of Highland Park; North Central Texas Council of Governments; North Texas Tollway Authority; and the Texas Department of Transportation (TxDOT).

U.S. 75 is a north-south radial corridor that serves commuter, commercial, and regional trips, and is the primary connector from downtown Dallas to the cities to the north. Weekday mainline traffic volumes reach 250,000 vehicles, with another 30,000 vehicles on the frontage

roads. The corridor has 167 miles (269 kilometers) of arterial roadways.

The U.S. 75 corridor currently has two concurrent flow-managed, high-occupancy vehicle (HOV) lanes, light rail, bus service, and park-and-ride lots. The corridor sees recurring congestion and a significant number of freeway incidents. Light rail on the DART red line is running at 75 percent capacity, and arterial streets are near capacity during peak periods and are affected by two choke points at the U.S. 75/Lyndon B. Johnson Freeway (I-635) interchange and U.S. 75/President George Bush Turnpike interchange.

DART will contribute \$3 million to the \$8.3 million project, which will use a transportation management model to predict travel conditions 30 minutes into the future. Those predictions will facilitate diversion of traffic from U.S. 75 to other routes during freeway incidents and special events. Through wireless and Web-based alerts, travelers will have access to real-time information about traffic, public transit, and expected travel times. Another goal of the Dallas research is to improve incident management through interagency communication and coordinated response.

Specific practices that the Dallas team intends to employ include the following:

Provide comparative travel times to the public and operating agencies for the freeway, HOV lanes, frontage roads, arterial streets, and light-rail transit line.

Use simulations to predict travel conditions for improved incident response.

Implement interdependent response plans among agencies.

Divert traffic to strategic arterials with adaptive control that can adjust signal timing in response to real-time traffic demands.

Shift travelers to the light-rail system during major incidents on the freeway.

San Diego: I-15 Corridor

The I-15 project is a collaboration led by the San Diego Association of Governments (SANDAG), along with USDOT, the California Department of Transportation, Metropolitan Transit System, North County Transit District, and the cities of San Diego, Poway, and Escondido, in addition to private sector support. The goals are to augment technical management, software and systems development, and cutting-edge innovation.

The interstate is a north-south corridor that runs from S.R. 78 in the north to the S.R. 163 interchange in the south. I-15 is a primary artery for the movement of commuters, goods, and services from inland northern San Diego County to downtown San Diego. Weekday traffic volumes range from 170,000 to 290,000 vehicles on the general purpose lanes. The corridor currently has two reversible high-occupancy toll (HOT) lanes. Approximately 20,000 vehicles use the I-15 express lanes during weekdays, and the corridor experiences recurring congestion.

SANDAG and its partnering agencies will contribute \$2.2 million for the \$10.9 million project. San Diego will use investments in intelligent transportation systems (ITS) to implement a "smart" transportation management system

that combines road sensors, transit management strategies, video, and traveler information to reduce congestion. The smart system will deliver information to commuters via the Internet and message signs, and will enable managers to adjust traffic signals and ramp meters to direct travelers to HOV and HOT lanes, bus rapid transit, and other options.

Examples of practices the SANDAG team intends to employ include the following:

Provide corridor users with the operational condition of all corridor networks and components, such as comparative travel times, parking space availability, incident information, and expected delays.

Use a decision support system with real-time simulation, predictive algorithms, and analysis modeling.

Establish, improve, and automate joint agency action plans.

Identify means of enhancing corridor management across all networks, including shared control of field devices such as lane controls, traveler information messages, and transit priority.

Squeeze Capacity out of Existing Infrastructure with Technology

Washington State DOT Active Traffic Management:

Moving Washington Program

- Overhead gantries
- Variable speed limits
- Queue warning
- Junction control
- Hard shoulder running
- Dynamic rerouting
- Travel time signs

[Play YouTube video](#)

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•Multimodal Integrated Corridor Management: operational coordination of multiple transportation networks and cross network connections comprising a corridor and the coordination among institutions responsible for corridor mobility.

<http://www.youtube.com/watch?v=cd0doR0Ga-I>

Squeeze Capacity out of Existing Infrastructure with Technology

Seattle: Variable pricing, enhanced bus service, traffic alert system

Minnesota: HOT, dynamic pricing on shoulder, TSP, real time traffic information

Miami: Managed lanes, HOT, BRT subsidized through tolls

Los Angeles: HOT, dynamic parking pricing

VMT Tax

- University of Iowa Road User Study



- Multimodal Integrated Corridor Management: operational coordination of multiple transportation networks and cross network connections comprising a corridor and the coordination among institutions responsible for corridor mobility.