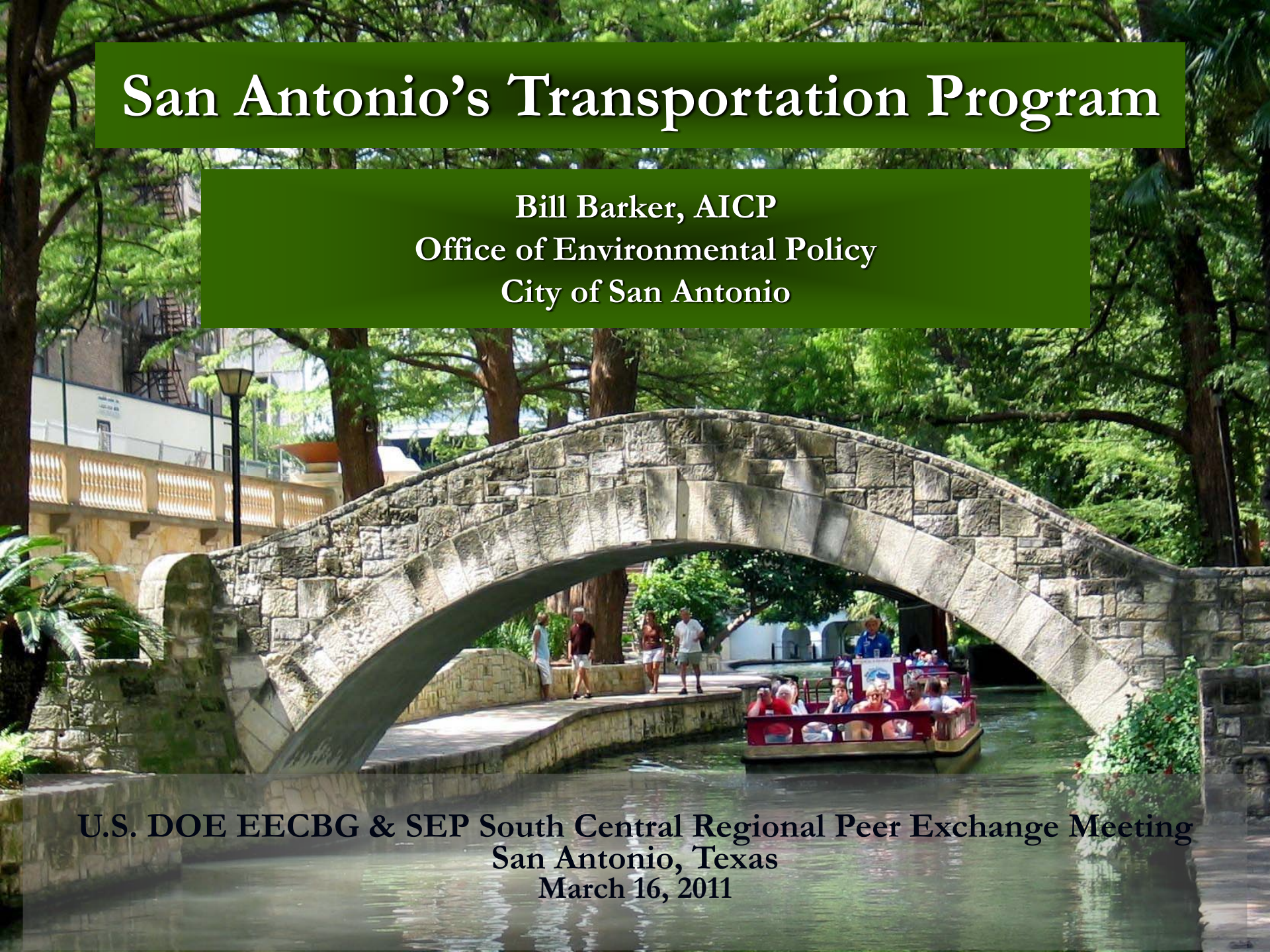
San Antonio's Transportation Program

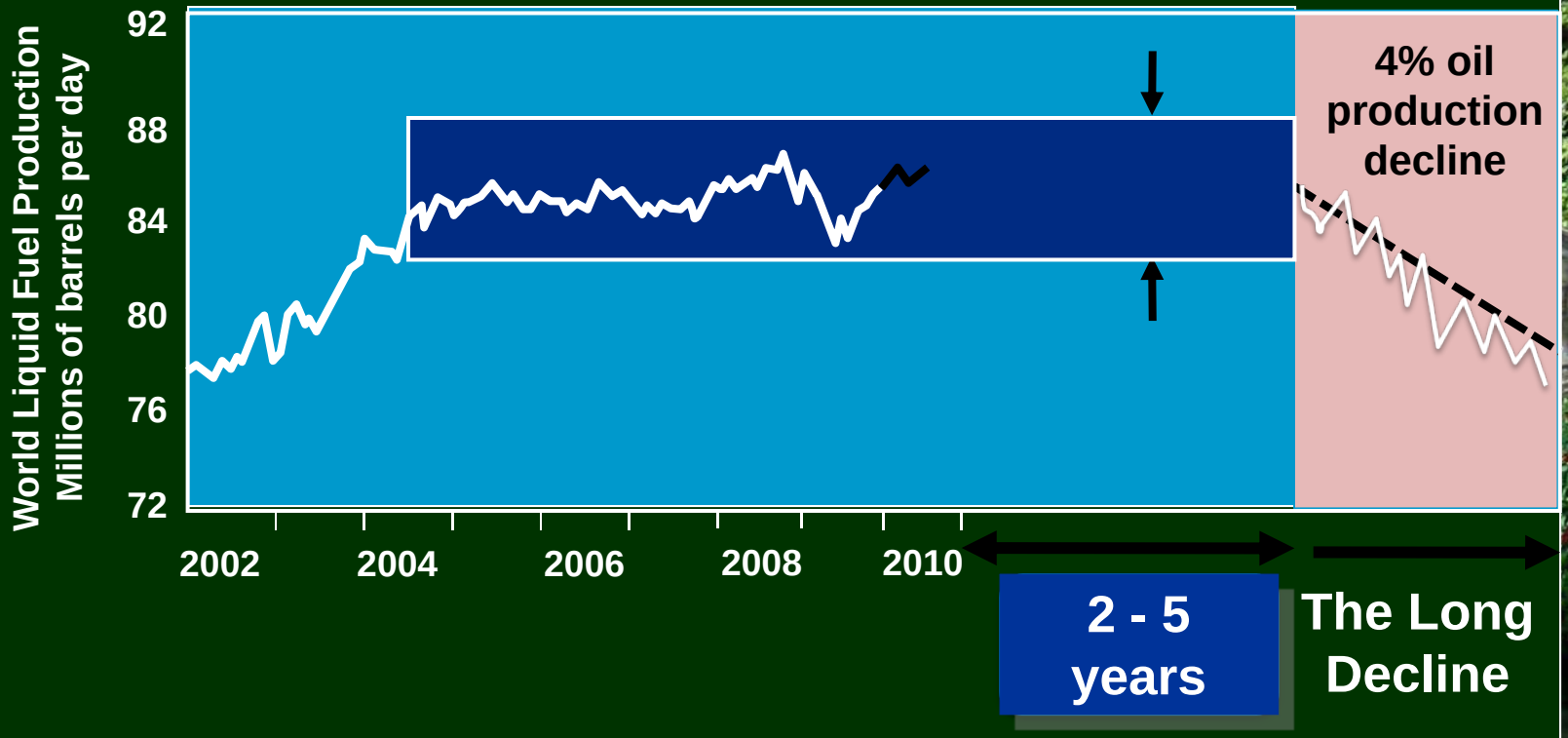
Bill Barker, AICP
Office of Environmental Policy
City of San Antonio



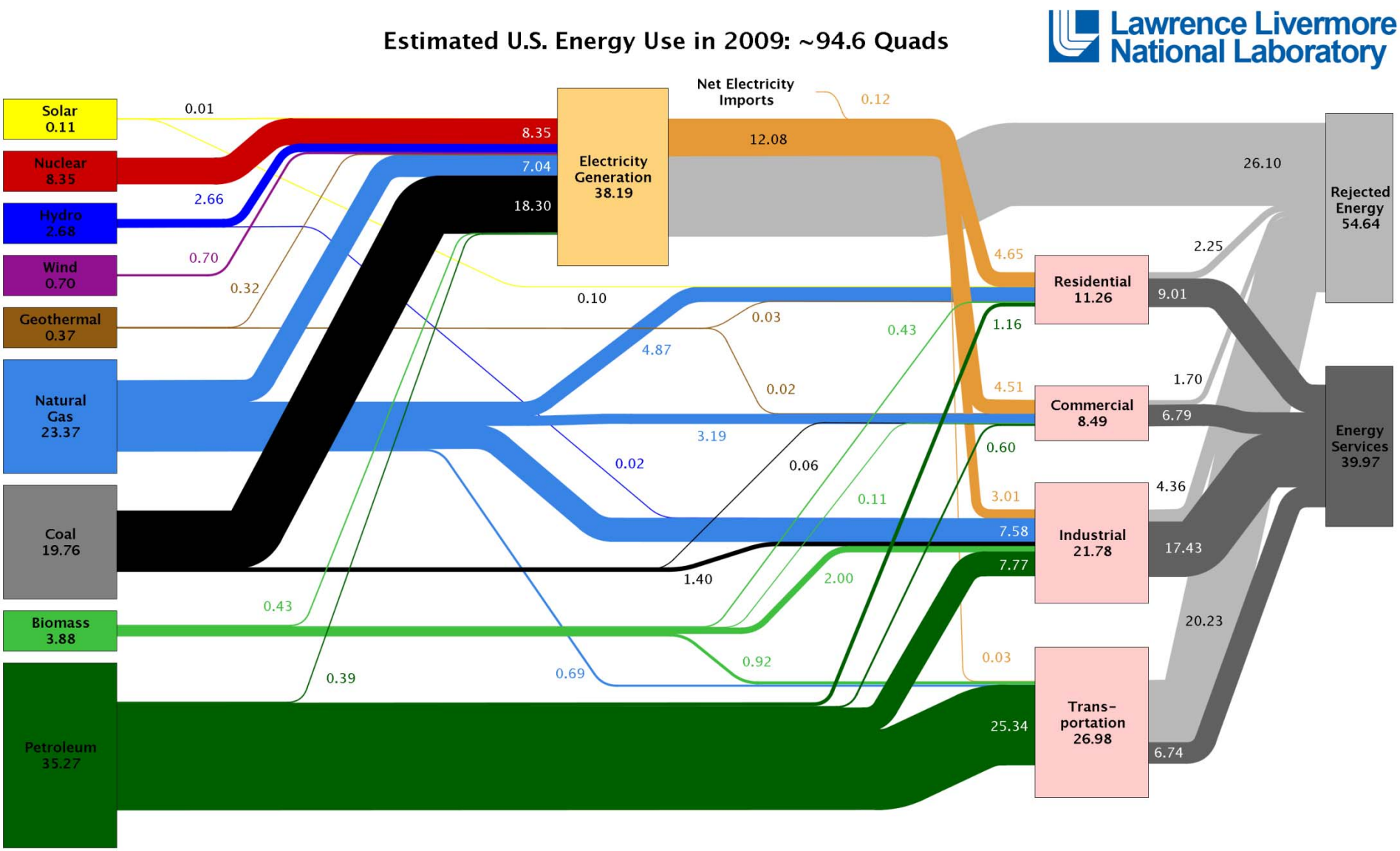
U.S. DOE EECBG & SEP South Central Regional Peer Exchange Meeting
San Antonio, Texas
March 16, 2011

Robert Hirsch Presentation
Electrification of Transportation Conference
San Antonio, October 22, 2010

"We believe that world oil production will likely stay on its current plateau & enter decline in 2 - 5 years."



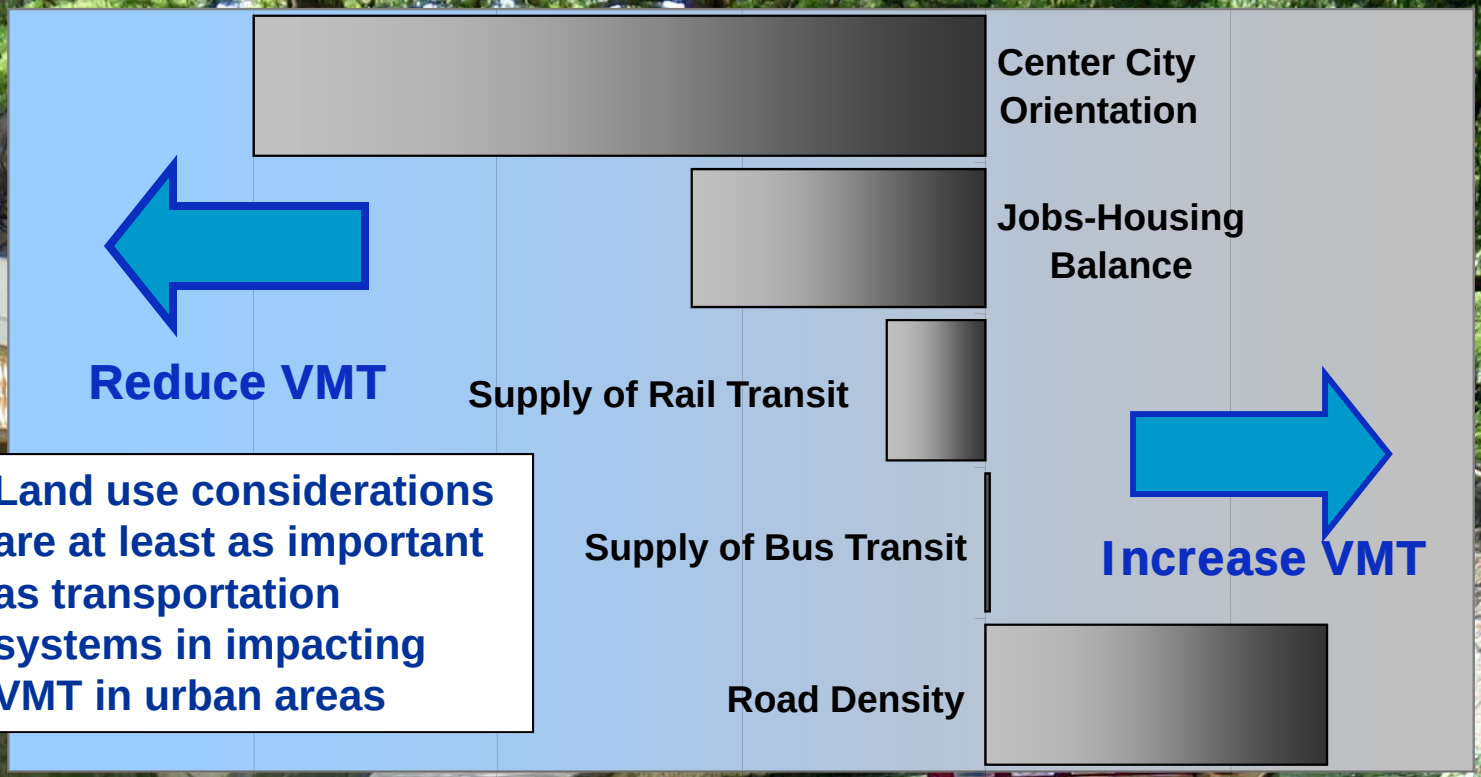
Transportation Now Depends on Oil



Source: LLNL 2010. Data is based on DOE/EIA-0384(2009), August 2010. If this information or a reproduction of it is used, credit must be given to the Lawrence Livermore National Laboratory and the Department of Energy, under whose auspices the work was performed. Distributed electricity represents only retail electricity sales and does not include self-generation. EIA reports flows for non-thermal resources (i.e., hydro, wind and solar) in BTU-equivalent values by assuming a typical fossil fuel plant "heat rate." The efficiency of electricity production is calculated as the total retail electricity delivered divided by the primary energy input into electricity generation. End use efficiency is estimated as 80% for the residential, commercial and industrial sectors, and as 25% for the transportation sector. Totals may not equal sum of components due to independent rounding. LLNL-MI-410527

Urban VMT Factors

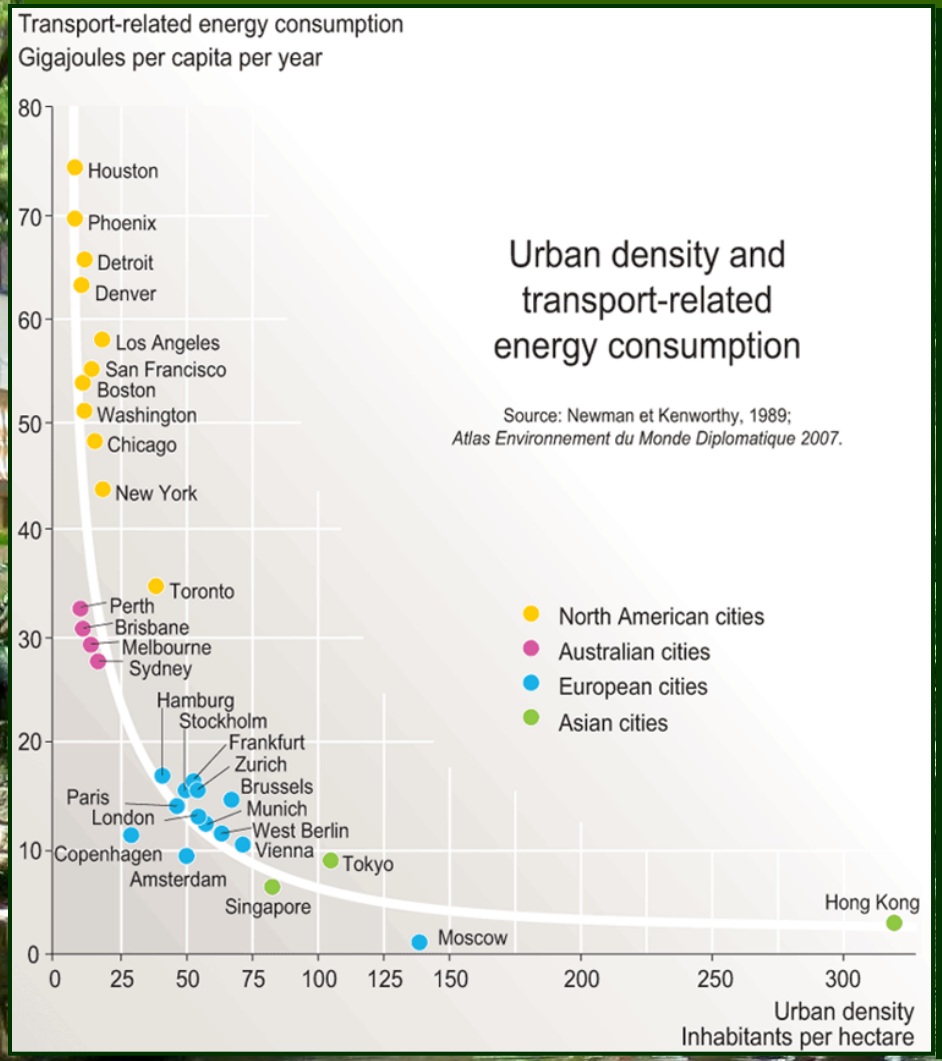
Based on a 10% Increase in the Factor of Interest in 144 U.S. Urbanized Areas



Relative Impact on Urban VMT

Source: Antonio M. Bento, Maureen L. Cropper, Ahmed Mushfiq Mobarak, Katja Vinha, *The Impact of Urban Spatial Structure on Travel Demand in the United States,* The World Bank Group Working Paper No.: 3007, March 20, 2003

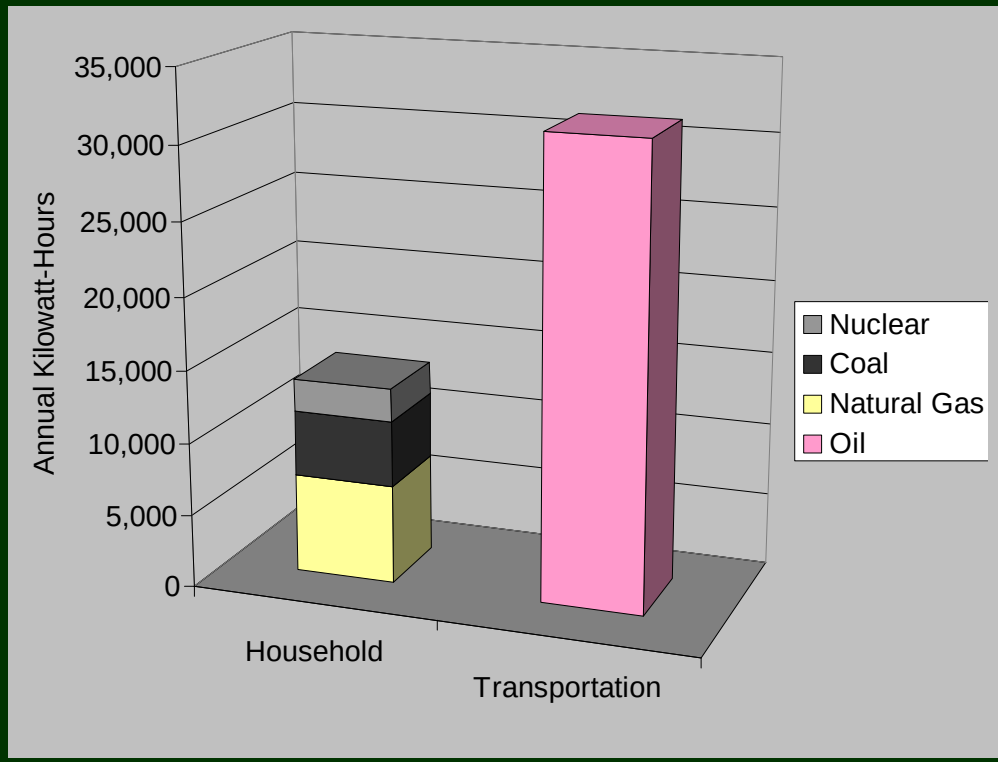
Getting Transportation Off of Oil



- Encourage more efficient travel modes
  - Pedestrian
  - Two-wheel vehicles
  - High occupancy vehicles
  - Carsharing
- Alternative fuels
- Reduce need for vehicular travel
  - Non-motorized travel
  - Land development strategies
- Don't forget about jobs
- Air emissions often, but not always, take care of themselves

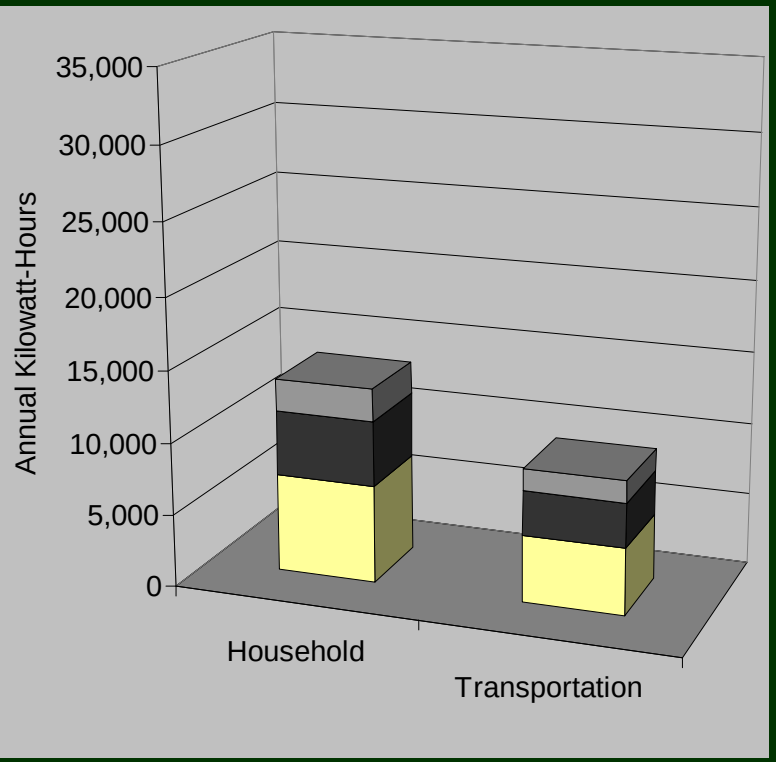
Average San Antonio Household Energy Consumption (2001)

Without Any Electric Cars



Annual Energy Bill = $2,331

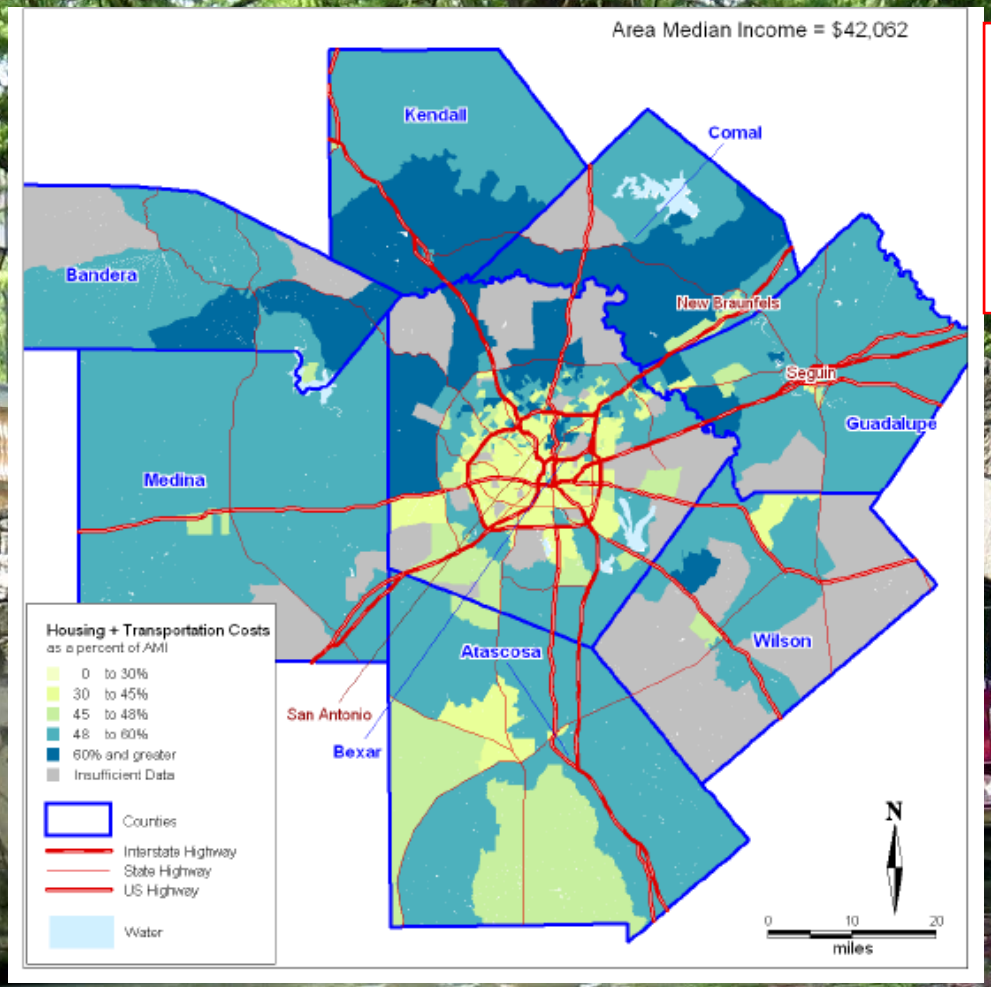
With All Electric Cars



Annual Energy Bill = $1,551

VMT for Bexar County households: http://nhts-gis.ornl.gov/transferability/
Texas retail gasoline prices: http://www.eia.doe.gov/dnav/pet/hist/LeafHandler.ashx?n=PET&s=EMM_EPM0_PTE_STX_DPG&f=W
West South Central miles per gallon per household: http://www.eia.doe.gov/emeu/rtecs/nhts_survey/2001/tablefiles/table-a02.pdf
CPS Energy residential sales: http://ftp.eia.doe.gov/Ftproot/pub/electricity/f8262001.xls
Electric vehicle efficiency: http://avt.inel.gov/pdf/fsev/costs.pdf

Affordable Housing and Transportation

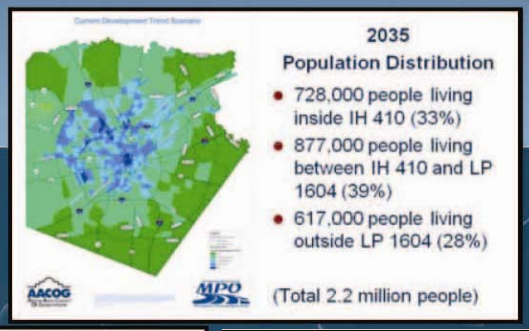


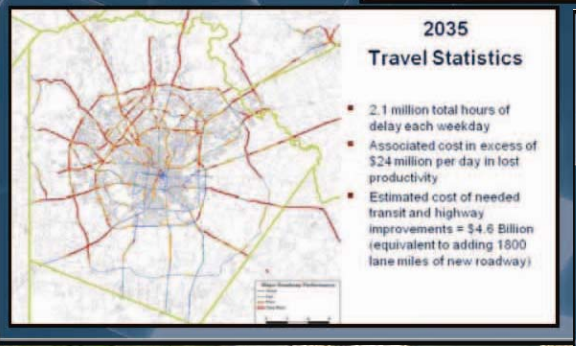
Affordable defined as:

- **Housing 30% of income**
- **Transportation 18% of income**

2035 San Antonio – Infill vs Current Trend

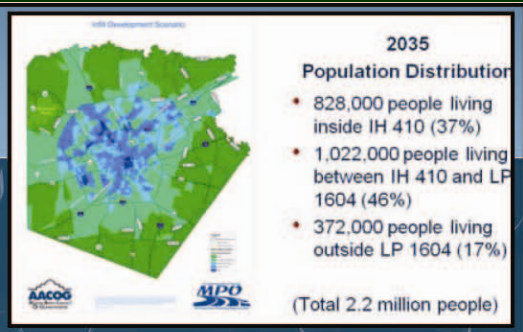
Current Trend Development Scenario





- Current trend
  - 2.1M annual hours of delay
  - $24M daily lost productivity
- Infill
  - 0.7M annual hours of delay
  - $8.6 daily lost productivity

In-fill Development Scenario



Infill development will improve transportation system performance more than any transportation network investment!

Transportation Projects

EECBG Funded

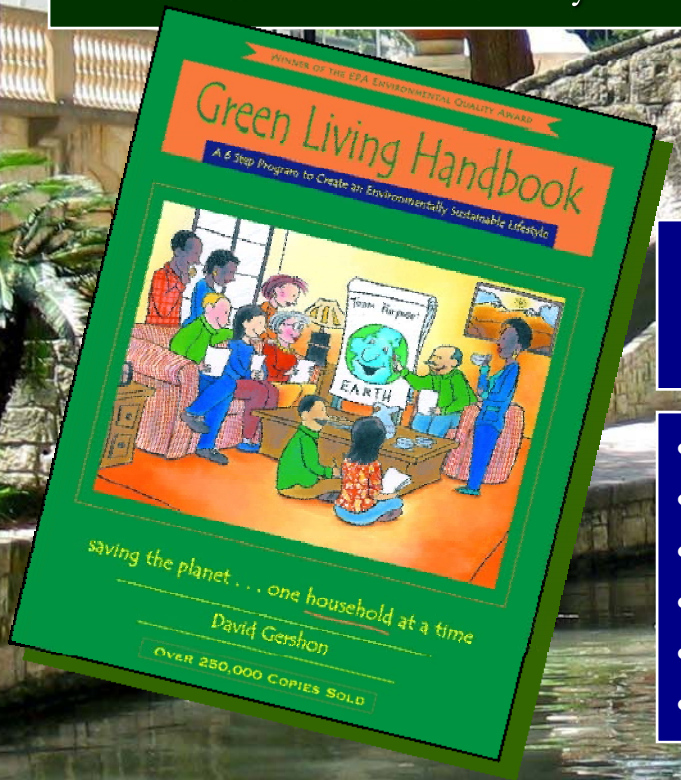
- Bicycle
  - Bicycle master plan
  - B-cycle bike share
  - Signage
  - Bicycle Safety and Awareness Media Campaign
- NuRide – green travel incentives
- Carsharing feasibility and pilot
- Alternative fuels
  - EVSE in public garages
  - Chevy Volt on order
  - Auxiliary Power Units
  - Residential EVSE rebates
- Reduce need for vehicular travel
  - Eco Team behavior program
  - Sustainable neighborhood INDEX GIS project
- Don't forget about jobs
  - Sustainable economic model

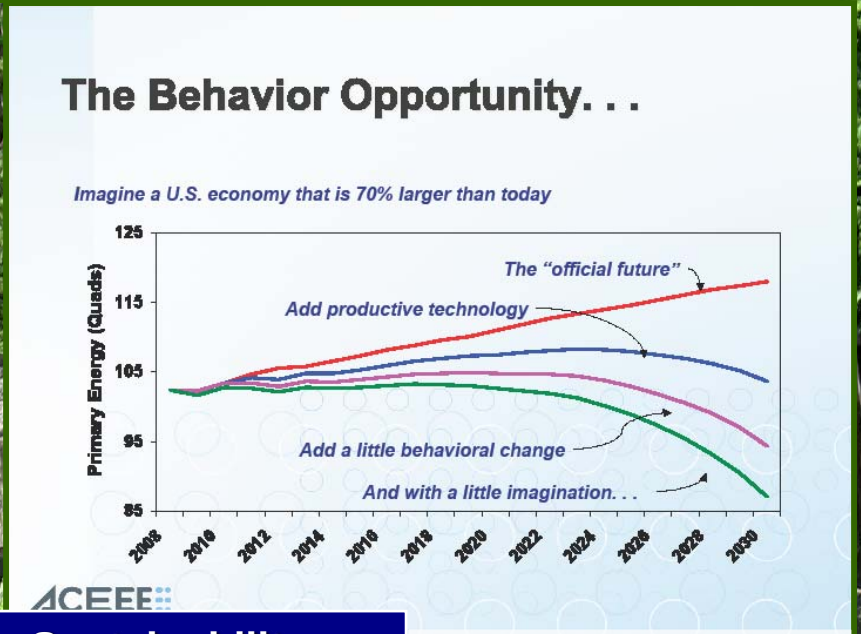
Other Supportive Funding

- Robert Wood Johnson Foundation Healthy Kids, Healthy Communities (bicycles, pedestrianism and 'Complete Streets')
- HHS Communities Putting Prevention to Work (bicycles, pedestrianism and 'Complete Streets')
- USAA (NuRide) – other sponsors possible
- State Energy Conservation Office (Prius conversions to PHEV plus EVSE)
- TxDOT Enhancement (bicycle safety and awareness campaign)
- CPS Energy (EVSE)
- DOE Clean Cities @ AACOG (alternative fuels)
- City of San Antonio
  - Electric vehicle readiness
  - Mayor's Green Jobs Council
  - Fleet policy review
  - Bicycle facilities
- VIA Metropolitan Transit (electric transportation/bicycle/NuRide/'Complete Streets')
- Alamo City Electric Auto Association

Behavioral Approaches

- There is a "behavioral wedge"
- "Green Living Program" required by 5% of staff in each City department in FY 2011
- Conversations going on with potential partners to roll out into the whole community





Employee Sustainability Education Program
(per individual participant)

- 40% less garbage sent into waste stream
- 32% less water used
- 14% less energy used
- 18% less fuel used
- 15% less C02 emissions
- Average savings of $255

Karen Ehrhardt-Martinez and John "Skip" Laitner, *Breaking Out of the Economic Box: Social Rationality and Non-Economic Drivers of Behavioral Change*, ECEEE Summer Study: Act, Innovate, Deliver, June 2009

San Antonio NuRide Gasoline Savings Year Ending 2/28/11

SUMMARY REPORT print report

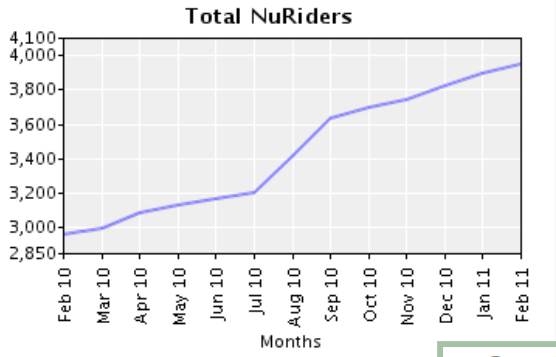
NuRiders		
New NuRiders	1,015	(52% additionality)
Total NuRiders	3,957	(51% additionality)
Total Active NuRiders (#)	2,574	(38% additionality)
Total Active NuRiders (%)	65%	
Organizations	194	
Avg age (years)	37.8	
Male / female	40% / 60%	

Trips & Reductions	All trips	Trips with <5
All trips	208,290	177,808
Avg trip distance (miles)	28.6	26.5
Avg vehicle occupancy	-	-
Reduced car trips	217,771	170,058
Reduced miles (VMT)	6,168,797	4,394,349
Reduced car starts (VT)	136,384	104,910
Gallons of gas saved	310,723	223,640
Reduced NOx (tons)	4.05	2.88
Reduced VOC (tons)	3.99	2.84
Reduced CO2 (tons)	3,045.09	2,191.68
Total reduced emissions	3,053.13	2,197.41

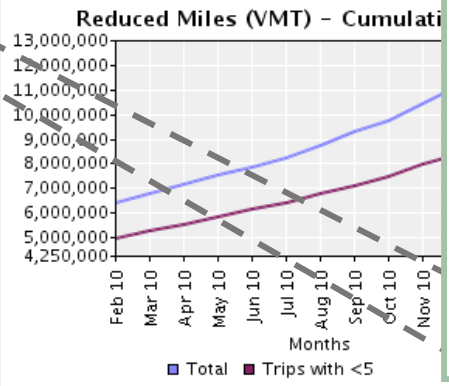
Rewards	Total	Per NuRider
Money saved	$1,263,350	$490
Points earned	38,477,150	14,948
Rewards redeemed	$143,650	$55
Redemptions	19,184	7.5

Other Summary Data		
Avg parking spots saved	1,063.2	spots per work day

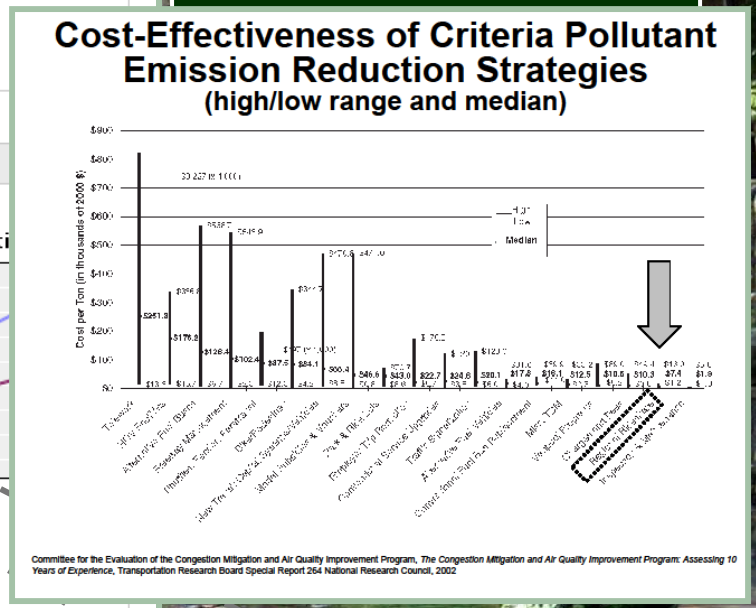
Total NuRiders | Go



Reduced miles (VMT) - cumulative | Go

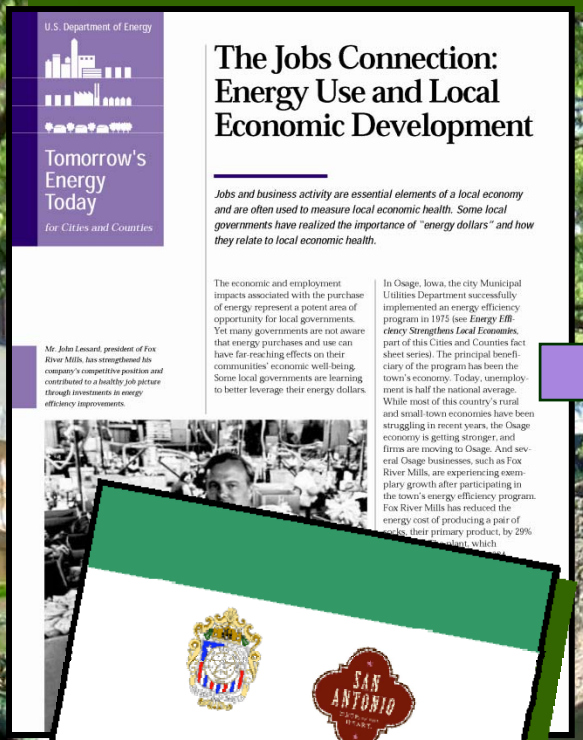


- Third generation rideshare matching
- Incentive program for "green" commuting
- Great performance measures
- Very cost effective
- NuRide.com



Gallons of gas saved 310,723

Jobs


U.S. Department of Energy

Tomorrow's Energy Today

for Cities and Counties

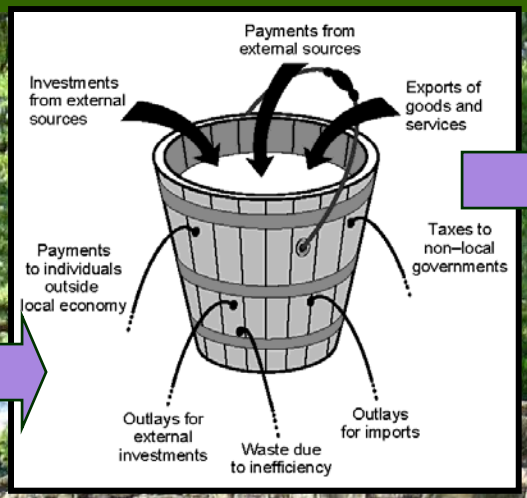
The Jobs Connection: Energy Use and Local Economic Development

Jobs and business activity are essential elements of a local economy and are often used to measure local economic health. Some local governments have realized the importance of "energy dollars" and how they relate to local economic health.

The economic and employment impacts associated with the purchase of energy represent a potent area of opportunity for local governments. Yet many governments are not aware that energy purchases and use can have far-reaching effects on their communities' economic well-being. Some local governments are learning to better leverage their energy dollars.

In Osage, Iowa, the city Municipal Utilities Department successfully implemented an energy efficiency program in 1975 (see *Energy Efficiency Strengthens Local Economies*, part of this Cities and Counties fact sheet series). The principal beneficiary of the program has been the town's economy. Today, unemployment is half the national average. While most of this country's rural and small-town economies have been struggling in recent years, the Osage economy is getting stronger, and firms are moving to Osage. And several Osage businesses, such as Fox River Mills, are experiencing exemplary growth after participating in the town's energy efficiency program. Fox River Mills has reduced the energy cost of producing a pair of socks, their primary product, by 29%

Mr. John Lessard, president of Fox River Mills, has strengthened his company's competitive position and contributed to a healthy job picture through investments in energy efficiency improvements.



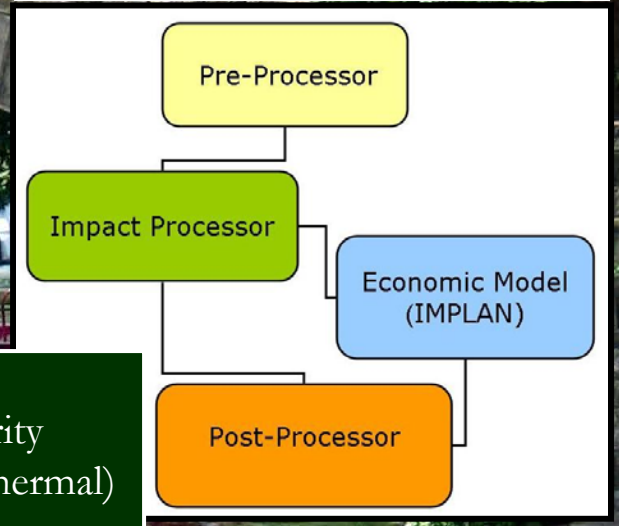
Source: David Broomhall, *The Use of Multipliers in Economic Impact Estimates*, Purdue University Cooperative Extension Service, West Lafayette, Indiana, November 1993.

Economic Leakage

- Nearly 60% of gasoline and oil expenditures leave the local San Antonio economy (1999)

Source: Jon Miller, Henry Robison and Michael Lahr, *Estimating Important Transportation-Related Regional Economic Relationship in Bexar County, Texas*, for VIA Metropolitan Transit, October 1999

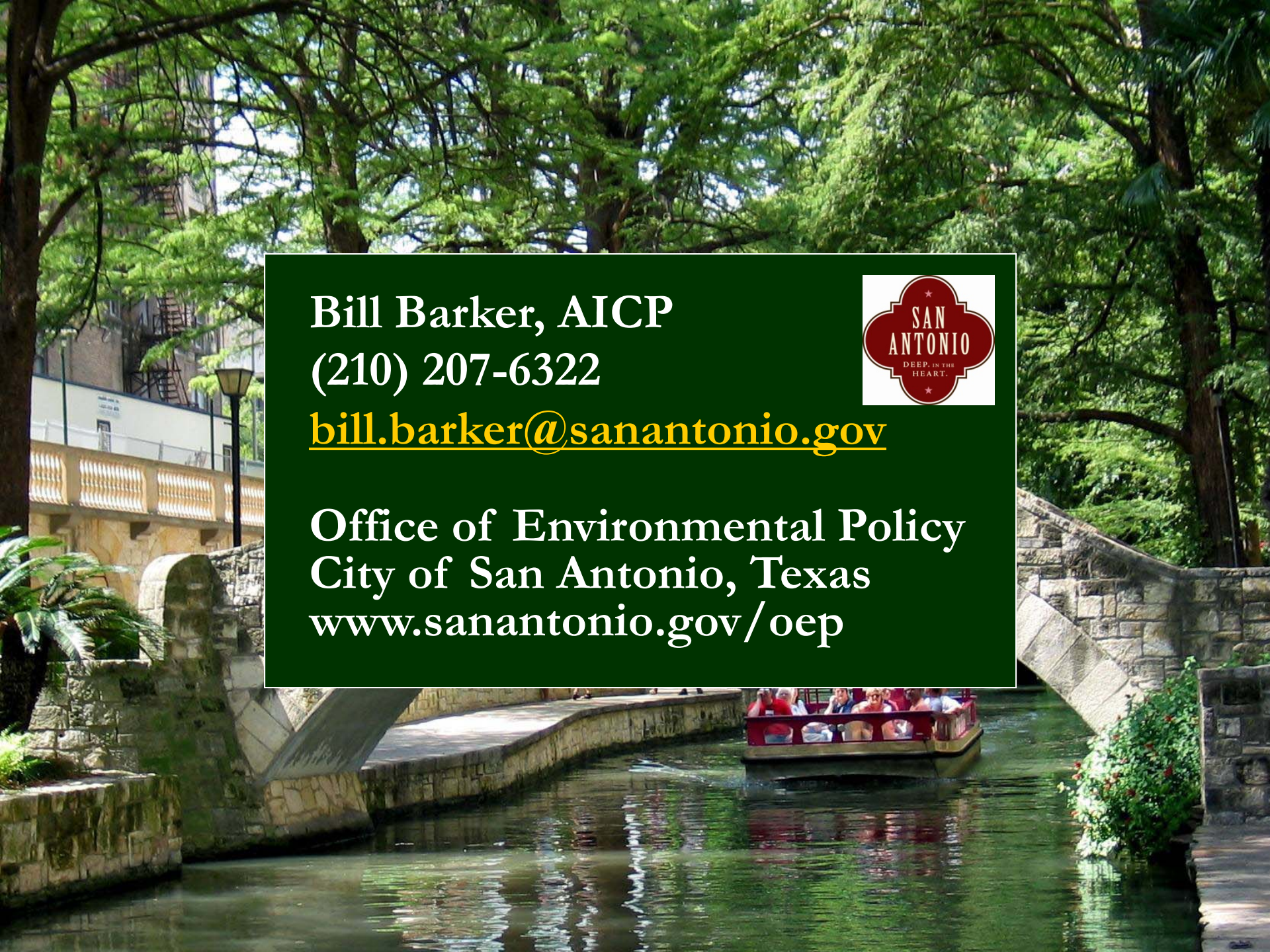
Sustainable Urban Economic Tool



- Energy Storage (Utility-Scale)
- Energy Infrastructure Cyber Security
- Solar Hot Water Heating (Solar Thermal)
- Solar Photovoltaics (PV)
- Electric Vehicles

Lessons Learned

- The value of partnerships and cooperation
- The value of non-profit organizations
- Make it very clear when a specification calls for something different
- Things take longer than they should
- It sure helps when the Mayor and City Manager are behind you
- Build a new paradigm while trying to change the existing transportation paradigm
- Lack of information, magnitude of scale, interdependency, and urgency are challenges



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www.sanantonio.gov/oep

bike! fort worth

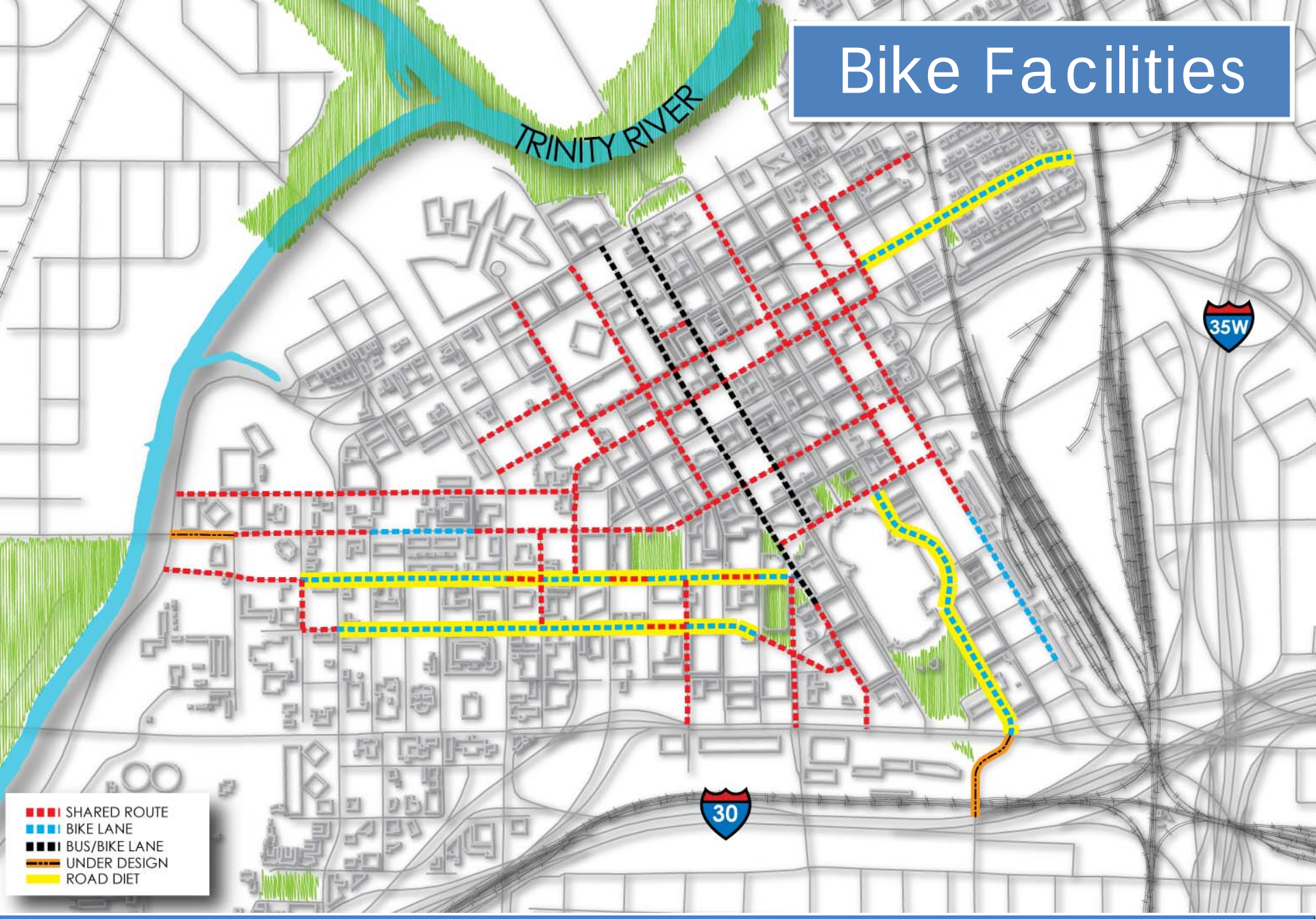
Julia McCleeary, AICP

March 16, 2011

Overview: Bike! Fort Worth

- Passed by Fort Worth City Council ***February 2010***
- Bike Parking Zoning Ordinance Passed ***November 2010***
- Safe Passing Ordinance Passed ***March 2011***

Bike Facilities



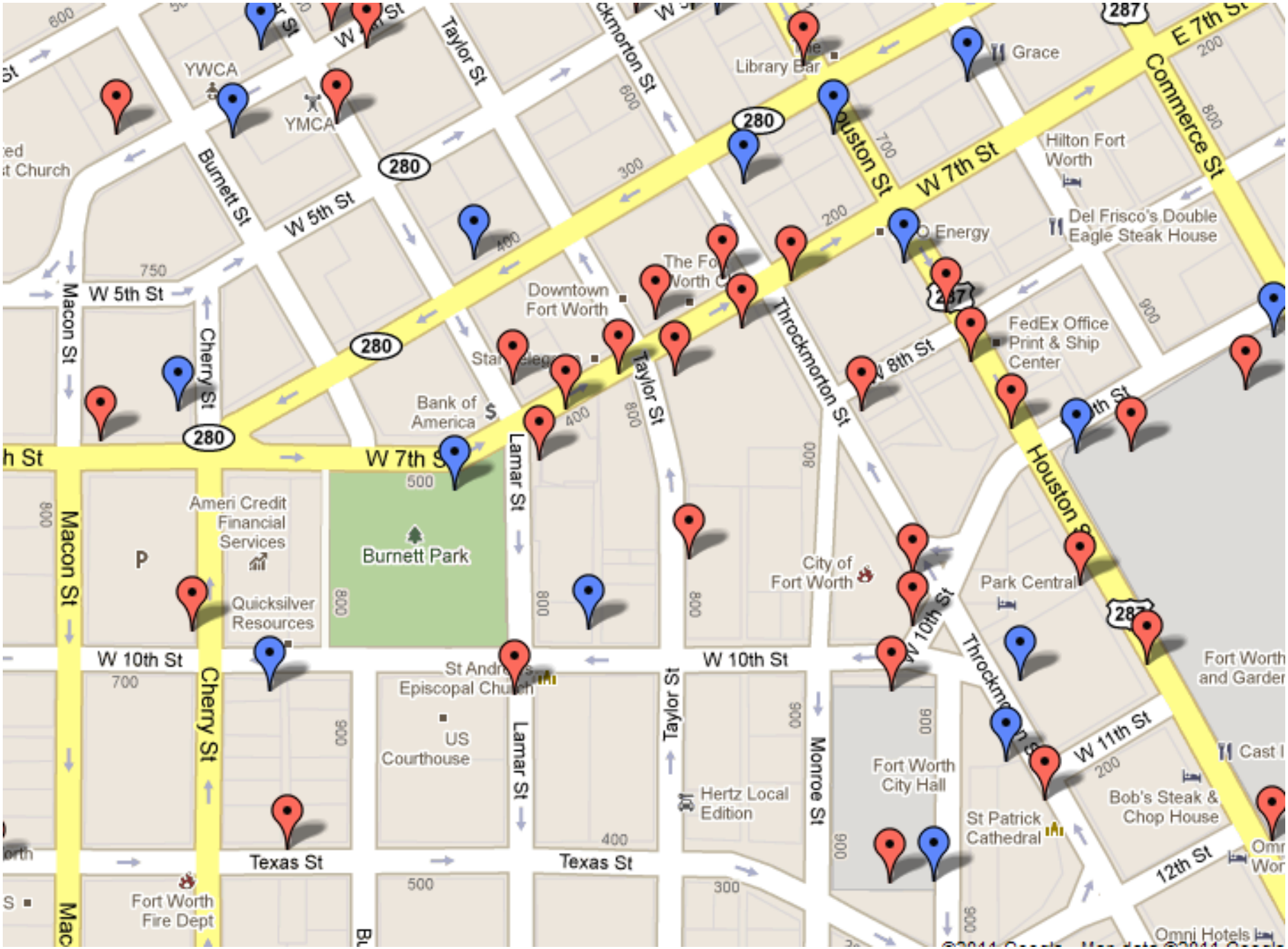
Funding: Post Grant

Potential funding sources:

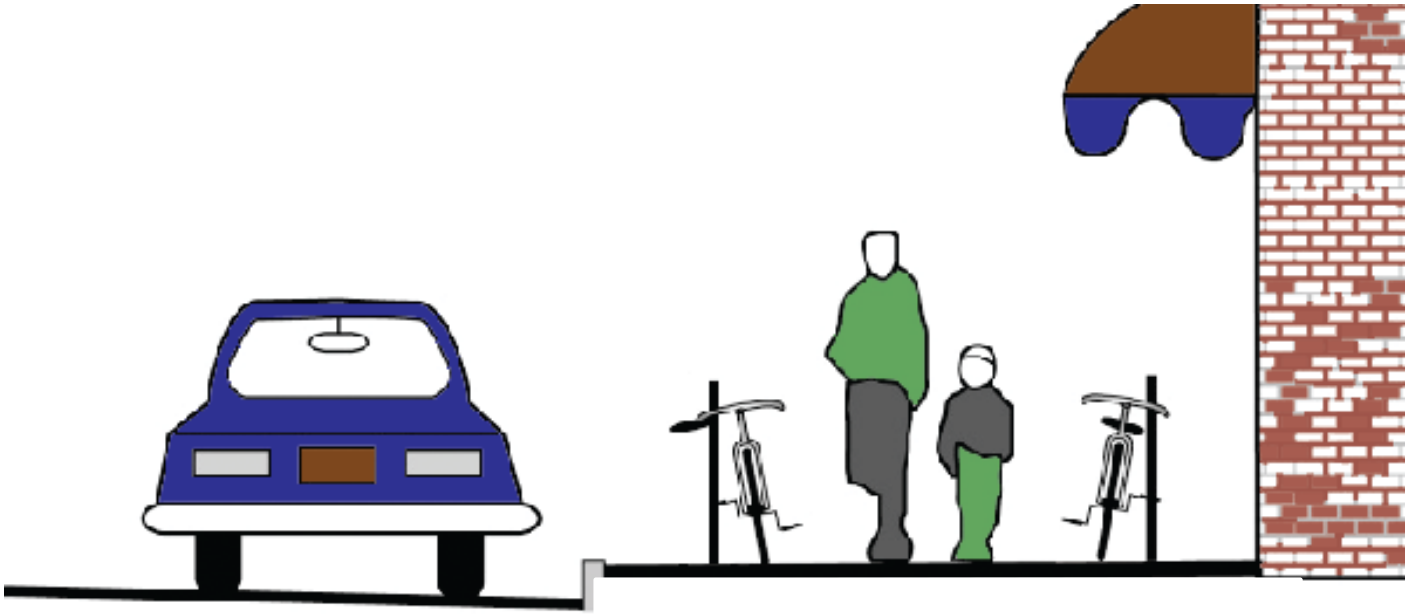
- Yearly line item: City Budget
- Bond programs
- Other grant opportunities
- Public/Private partnerships

Bike Racks

- 24W X 36H
- 12-gauge 2-7/8” galvanized steel tubing
- Black thermoplastic covering
- Surface mount with covers


YWCA
YMCA
Burnett St
Taylor St
Throckmorton St
Commerce St
Houston St
Macon St
Cherry St
Lamar St
Monroe St
W 5th St
W 7th St
W 8th St
W 10th St
W 11th St
12th St
280
287
Library Bar
Grace
Hilton Fort Worth
Energy
Del Frisco's Double Eagle Steak House
Downtown Fort Worth
FedEx Office Print & Ship Center
Bank of America
Ameri Credit Financial Services
Burnett Park
Quicksilver Resources
City of Fort Worth
Park Central
St Andrew's Episcopal Church
US Courthouse
Hertz Local Edition
Fort Worth City Hall
St Patrick Cathedral
Bob's Steak & Chop House
Texas St
Fort Worth Fire Dept
Omni Hotels

Siting Bike Racks: Downtown

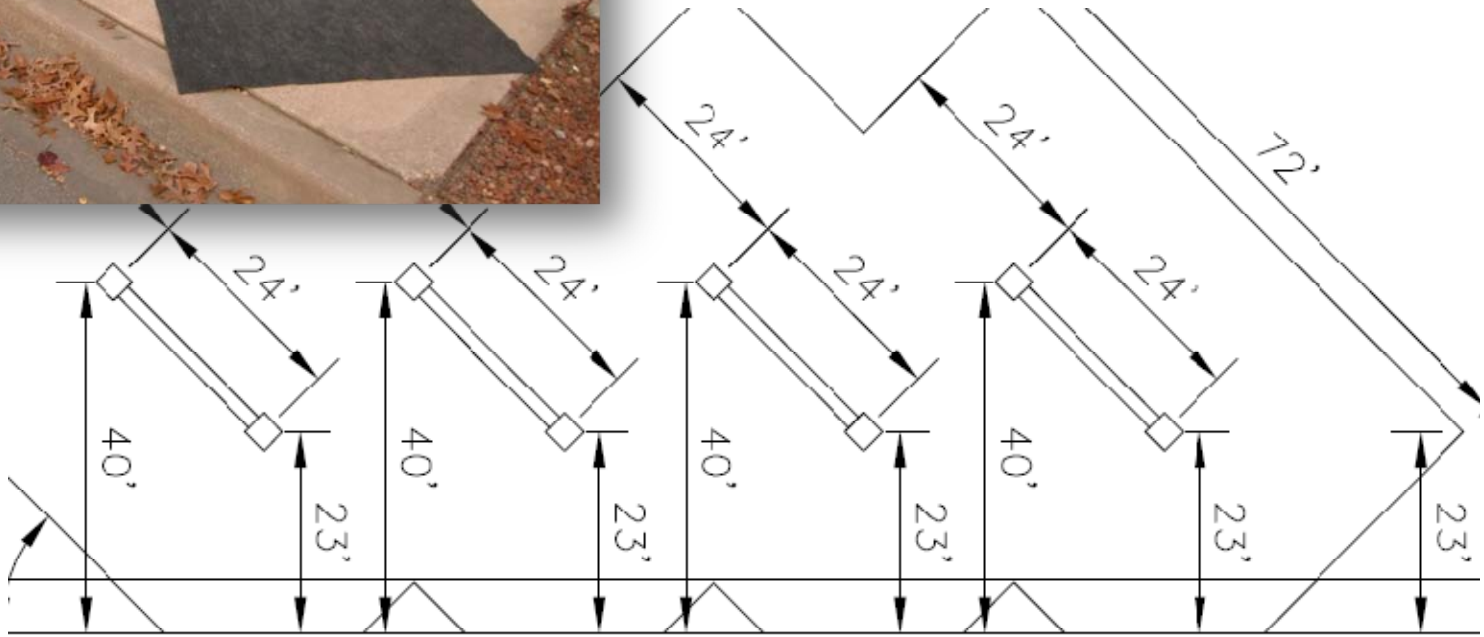


7’ Pedestrian Clear Zone*

*required by ordinance

Siting Bike Racks

- Use visual dimensions
- Standard details for installation



Siting Bike Racks

- Visible
- Near entrances

- Where were bikes parked?
- Looked for destinations

Lessons Learned: Bike Racks

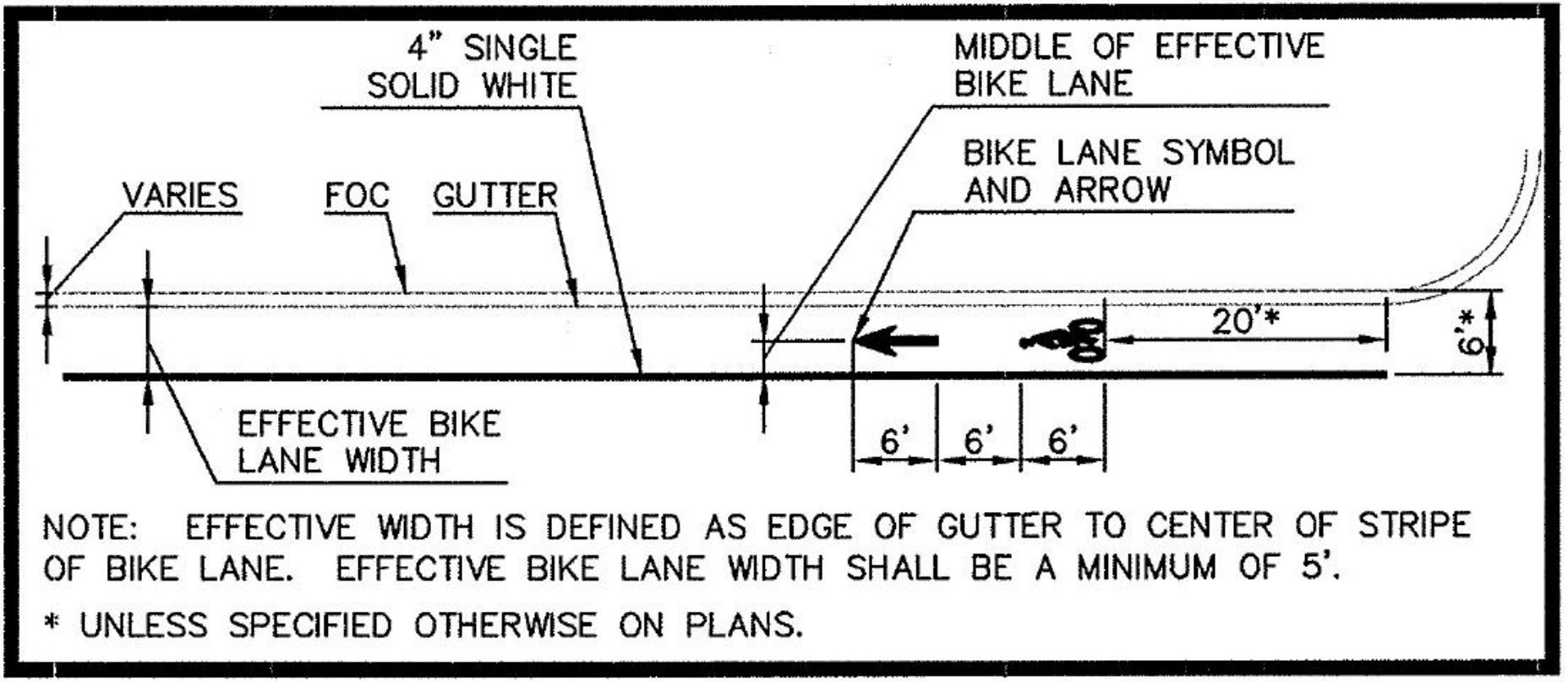
- Bicyclist “walking” distance
- Many different stakeholders in downtown
- Perceived demand of racks
- Pedestrian flow concerns
- Façade damage concerns
- Door zone: on-street parking

Lessons Learned: Striping

- Bicycle facilities installation is newer and not typical or familiar
- Pre-construction meeting is essential
- Be thorough, don't assume anything
- Importance of using uniform designs
- Define the "effective bike lane"

Effective Bike Lane

TYPICAL DETAIL "B"



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