

NDOT Research

4/16/08

Jason VanHavel

Research Coordinator



Research Division. What does it do?

- Find solutions to NDOT, Nevada, and Transportation problems
 - Publish about 5 Research reports per year
- Solicit problem statements
 - Internal and external
- Coordinate research projects with panels
- Review, edit and publish final reports



Research Division

- Qualified Products List (QPL)
- DOT Research Library
- T2 Center
- Pooled fund studies



Past Successes From NDOT Research

- Evaluate Shoulder Rumble Strips
- Soundwall Standards
- High-Performance Concrete
- Develop Pavement Joint Design Specs
- Roundabout Simulation Analysis



Present Research

- Winter Maintenance Improvements
- Corrosion of MSE walls
- Bridge Joints
- Impact of System Expansion
- Alternatives for Trucks on Freeways
- Graffiti Countermeasures



Future of Transportation

- US Economy tied to Transportation
- Revenue Problems
- Energy Issues

- References
 - Federal Department of Energy (DOE)
 - General Accounting Office (GAO)
 - National Surface Transportation Policy and Revenue Study Commission
 - NDOT



Financial Issues

- Federal gas tax static since 1997. 18.4 cpg
- 1993-1997, 18.3-18.4 cpg, different allocation
- State gas tax static since 1995. 18.455 cpg
- State gas tax 1992-1995. 18.305 cpg

What about 1992?



1992

- Average Cost of new house \$122,500.00
Average Income per year \$30,030.00
- Hurricane Andrew hits South Florida
- McDonalds opens first McDonalds in Beijing China
- Euro Disney opens in France
- Windows 3.1 released by Microsoft
- Bill Clinton becomes U.S. president

What about gas?



1992 Gas

- Cost of a gallon of Gas \$1.05 in 1992

Really, the Transportation Industry knows
this



Transportation Infrastructure

- National Surface Transportation Policy and Revenue Study Commission points out:
 - \$225 Billion Annually
 - Current spending is 40% of required



Transportation Infrastructure

- Consequences of existing situation/inaction
 - Assets further deteriorate
 - Decreased safety
 - Increase congestion
 - Jeopardize America's world economic leadership

The Transportation industry knows this.

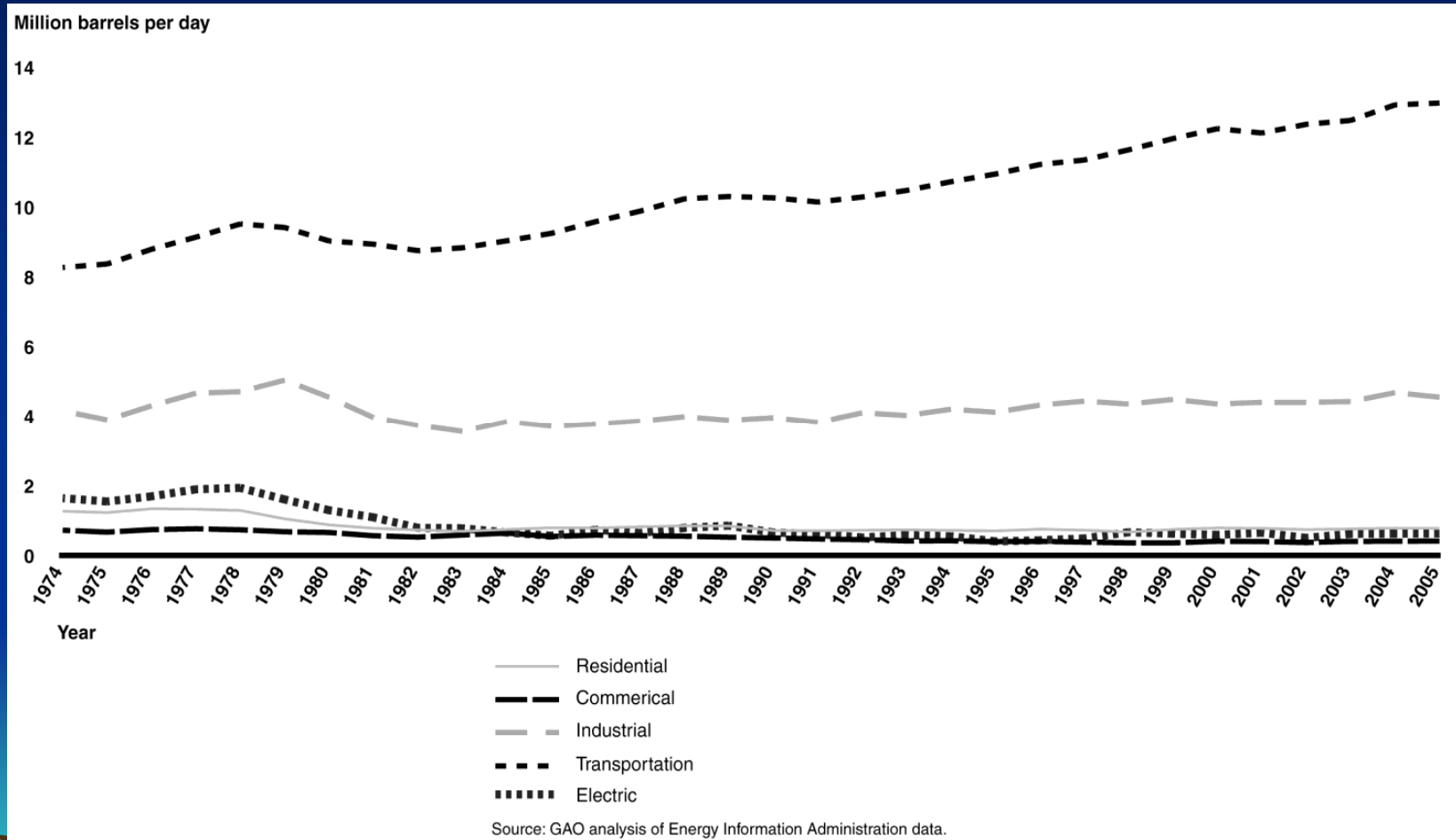


Energy

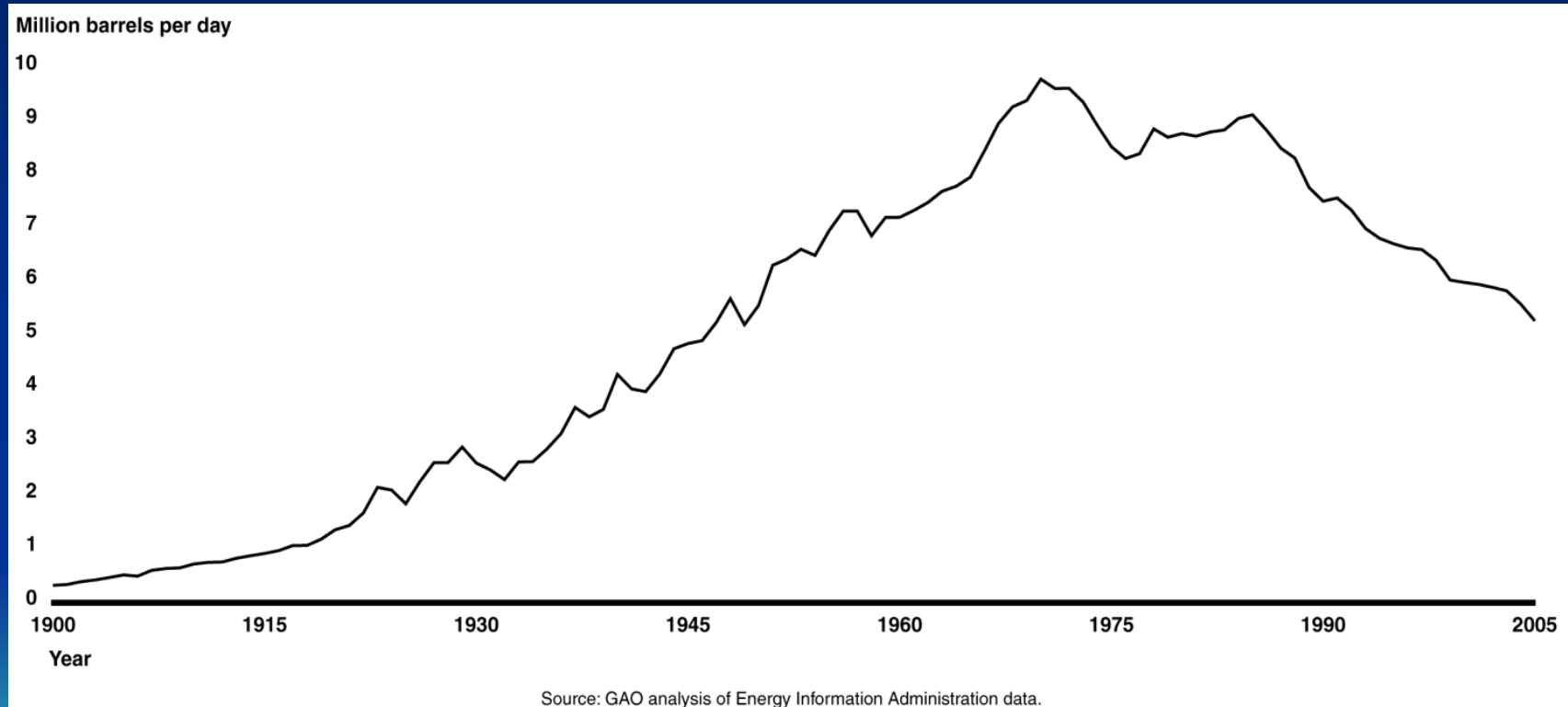
- GAO, February 2007
 - World Peak Oil Production 2-40 Years
- 66% of all Oil use in US is in Transportation
- 95% of Transportation Energy is from Oil



Annual US Oil Consumption by Sector



US Oil Production



Post Peak Oil

- Break down of economic and political systems
- Current Food Riots
- UN estimate 33 countries threatened with destabilization



Corn



BIG QUESTION

- If we:
 - Raise gas taxes by 150%
 - Build out our infrastructure
- Then:
 - We drive more and use more Oil



BIG QUESTION

- With increased demand for oil
 - Much higher prices!
 - Make world oil peak and decrease sooner.
- Now we have a costly infrastructure with little and very costly fuel to use it.



Solution

- No one solution, couple of ideas
- Rail uses 50% to 75% of energy of trucks
 - Increase rail lines/capacity
 - Create hubs/Intermodal connections
 - Technology investment has been deficient for years, increase technology investments



Solution

- Do not use a 4,000 lb tool to transport a 200 lb body, use a 200 lb tool
- Have 200 lb tool able to use half lane width
- Double capacity



Economic Solution

- Economics WILL solve the problem
- Sooner or later
- Higher standard of living or lower

OR

- We can start to solve these issues now
- Awareness now



Contacts

NDOT Research

Jason VanHavel

Research Coordinator

775-888-7803

Jvanhavel@dot.state.nv.us

