

# Eagle Ford Expansions: The Latest Developments on the Play



Principal Investigator: Thomas Tunstall, Ph.D.

Lead Investigator: Javier Oyakawa, M.A., M.Sc.

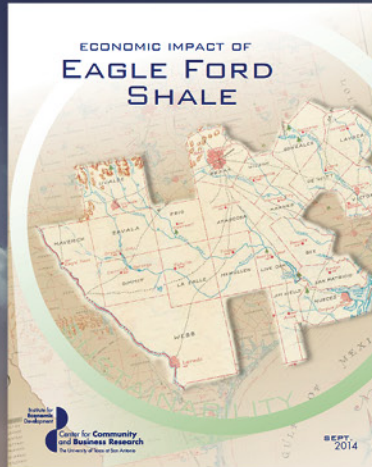
Thomas Tunstall, Ph.D.  
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# Eagle Ford Initiatives Across UTSA



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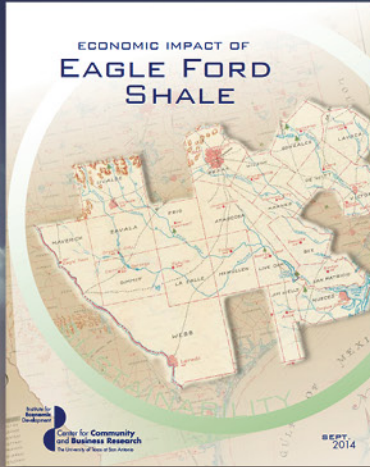
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- **Civil and Environmental Engineering, and Geology**
  - ✓ Water Institute of Texas
  - ✓ Interactive Technology Experience Center (K-12 STEM)
  - ✓ Texas Sustainable Energy Research Institute (Energy-Water Nexus)
- **Mechanical Engineering**
  - ✓ Oil and Gas Certificate Program for Engineers
- **College of Public Policy**
  - ✓ Municipal Capacity Building Workshops
  - ✓ State of Texas Demographer's Office
- **College of Architecture, Construction and Planning**
  - ✓ Center for Urban and Regional Planning
- **Institute for Economic Development**
  - ✓ Small Business Development Centers
  - ✓ Rural Business Program
  - ✓ Eagle Ford Shale Community Development Program
  - ✓ Center for Community and Business Research



# University of Texas at San Antonio Institute for Economic Development



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- Eagle Ford Shale Community Development Program (14 Counties in South Texas)
- Small Business Development Centers - SBDC (79 Counties in South, West and Central Texas)
- Rural Business Program (79 Counties in South Texas)
- Procurement Technical Assistance Center (Texas)
- CP Morgan Chase Veteran's Program (Texas)
- Southwest Trade Adjustment Assistance Center (TX, OK, LA)
- SBDC National Information Clearinghouse (National)
- Minority Business Center (National)
- **Community and Business Research (National, Int'l)**
- International Trade Center (Mexico, Central/South America, Caribbean, North Africa)



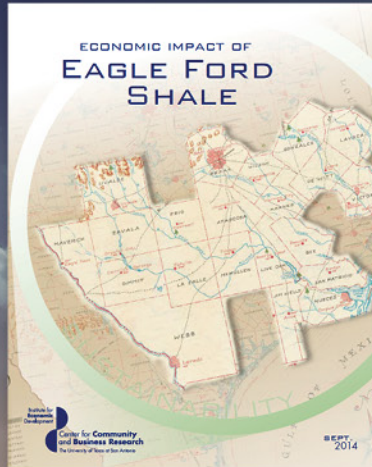


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## Institute for Economic Development

As the Research Arm of UTSA's Institute for Economic Development we are dedicated to serving:

- Economic development corporations (e.g., SA EDF)
- City, state and federal governments
- Workforce development boards
- Businesses
- Associations
- Other community stakeholders



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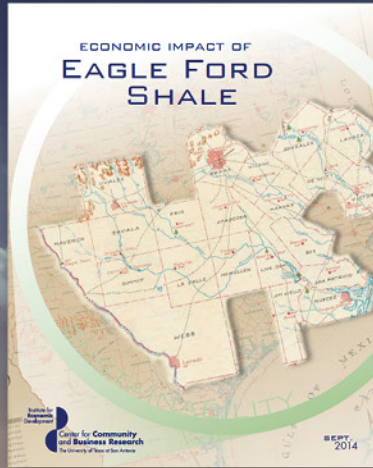
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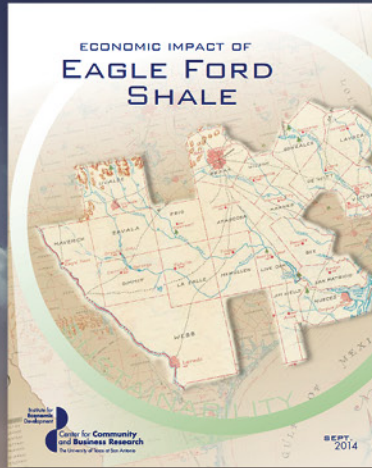
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**In theory,  
there is no  
difference between  
theory and practice;  
in practice,  
there is.**

- Yogi Berra



# UTSA – Emerging Tier 1 University



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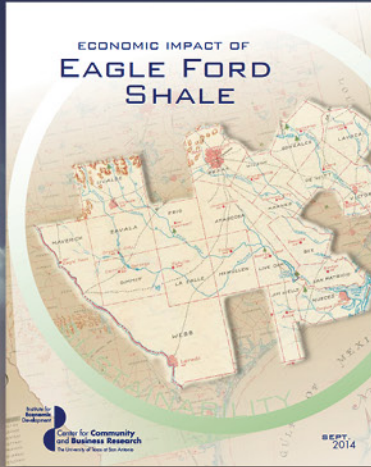
- **California: 9 Tier 1 Universities**  
(Population 38 Million)
- **New York: 7 Tier 1 Universities**  
(Population 19 Million)
- **Texas: Only 3 Tier 1 Universities**  
(Population 26 Million)







# Counties Included in Study Area



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## Producing Counties:

- Atascosa
- Bee
- DeWitt
- Dimmit
- Frio
- Gonzales
- Karnes
- La Salle
- Lavaca
- Live Oak
- Maverick
- McMullen
- Webb
- Wilson
- Zavala

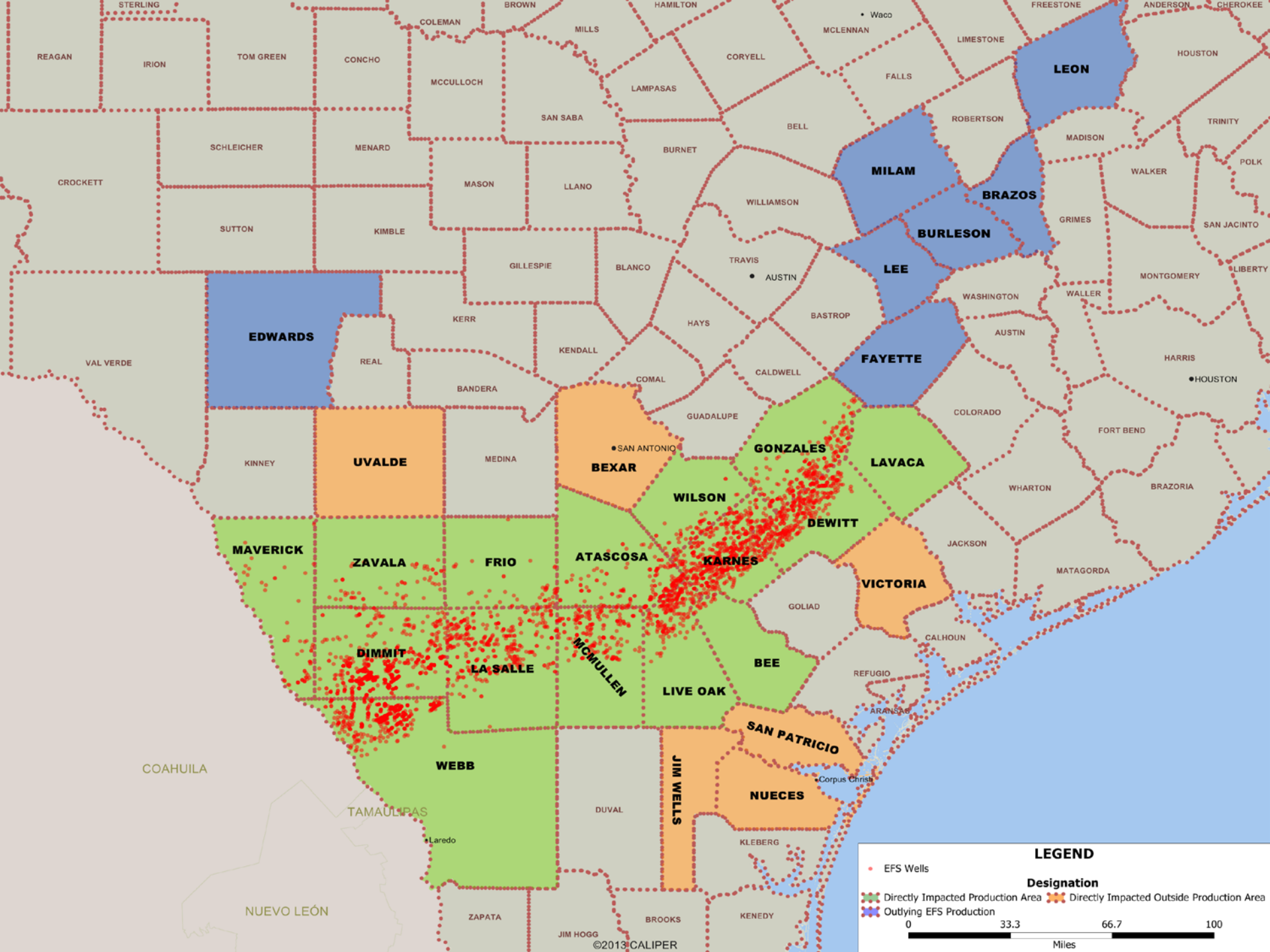
## Adjacent Counties:

- Bexar
- Jim Wells
- Nueces
- San Patricio
- Uvalde
- Victoria

Counties not included in the analysis are

Leon, Milam, Brazos, Burleson, Lee, Fayette, Lavaca, Edwards, Houston, and Wood



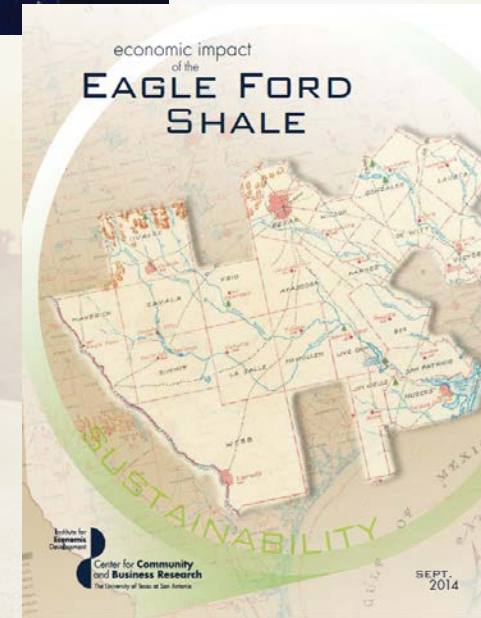
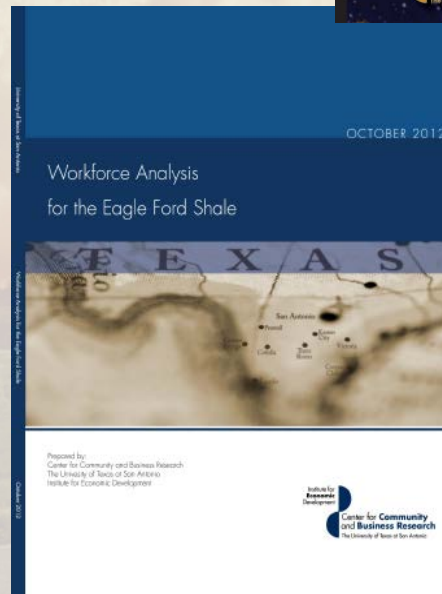
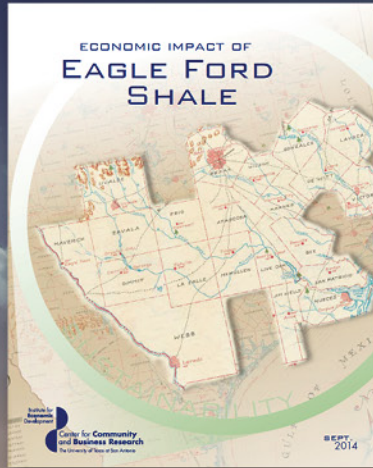


**LEGEND**

- EFS Wells
- █ Directly Impacted Production Area
- █ Directly Impacted Outside Production Area
- █ Outlying EFS Production

0 33.3 66.7 100  
Miles

# Eagle Ford Economic Reports



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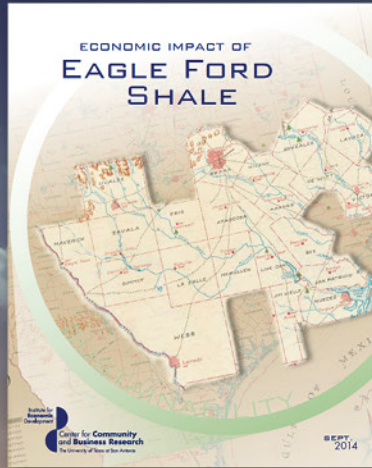
# Reasons for Increases in Economic Impact in 2013 and 2023

- **Between \$23B - \$30B will be spent on capital expenditures in 2014**

- **EFS Formation continues to exceed expectations**

- **E&P companies regularly adjust initial production and estimated reserves upward**

- **New manufacturing, port, shipping, and pipeline projects continue to be announced as a result of low-cost natural gas and growing supplies of light crude**



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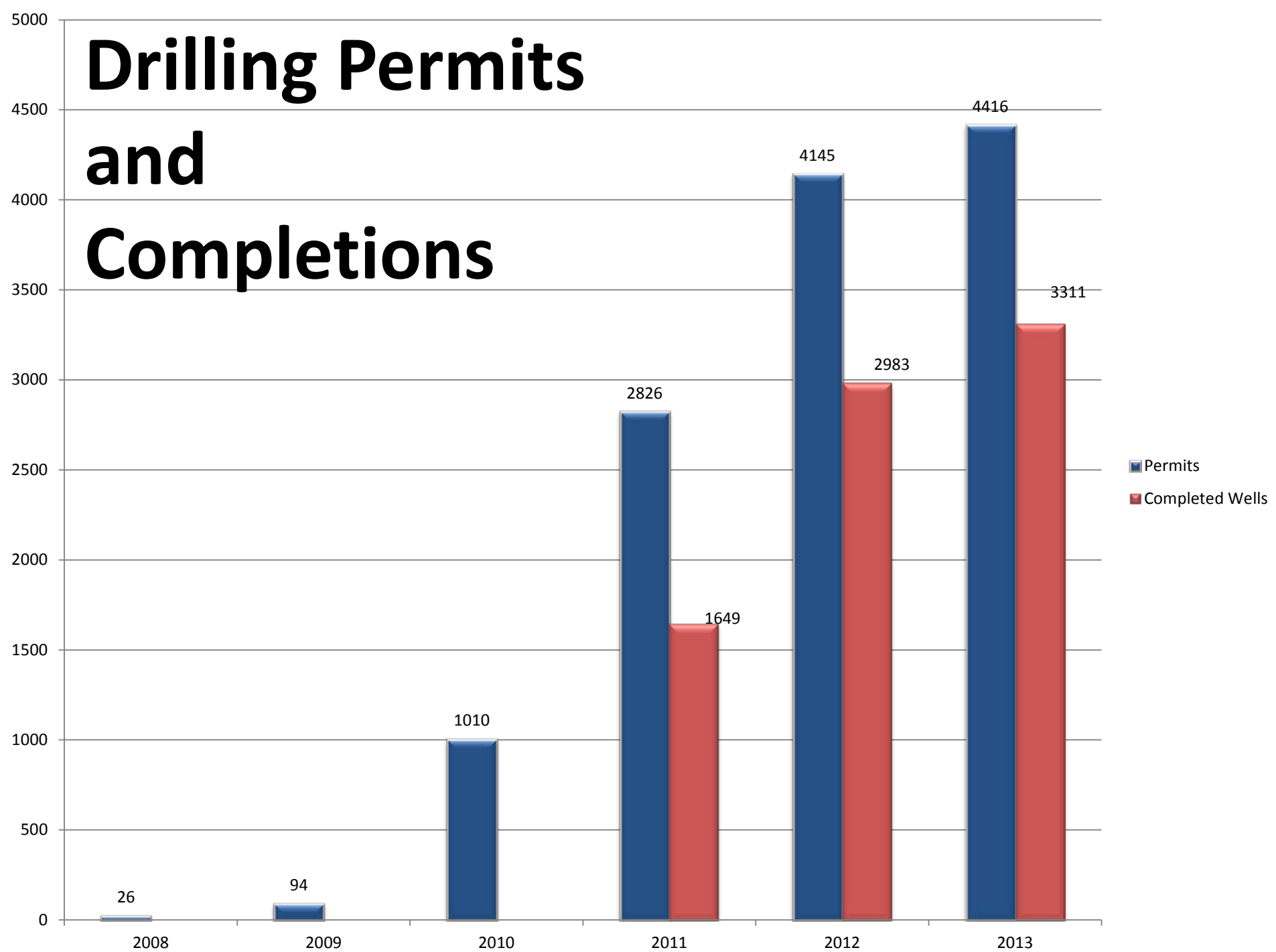
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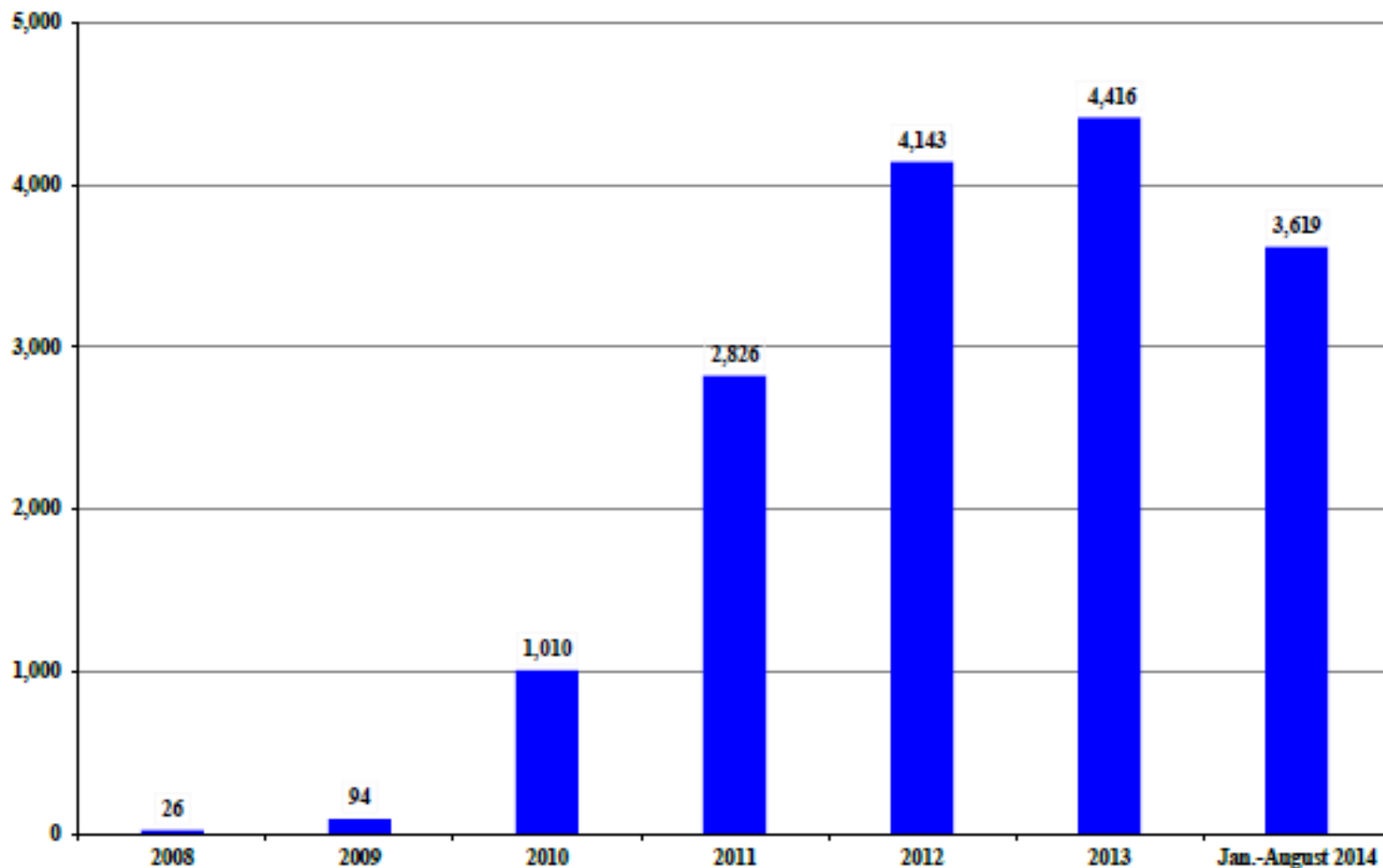
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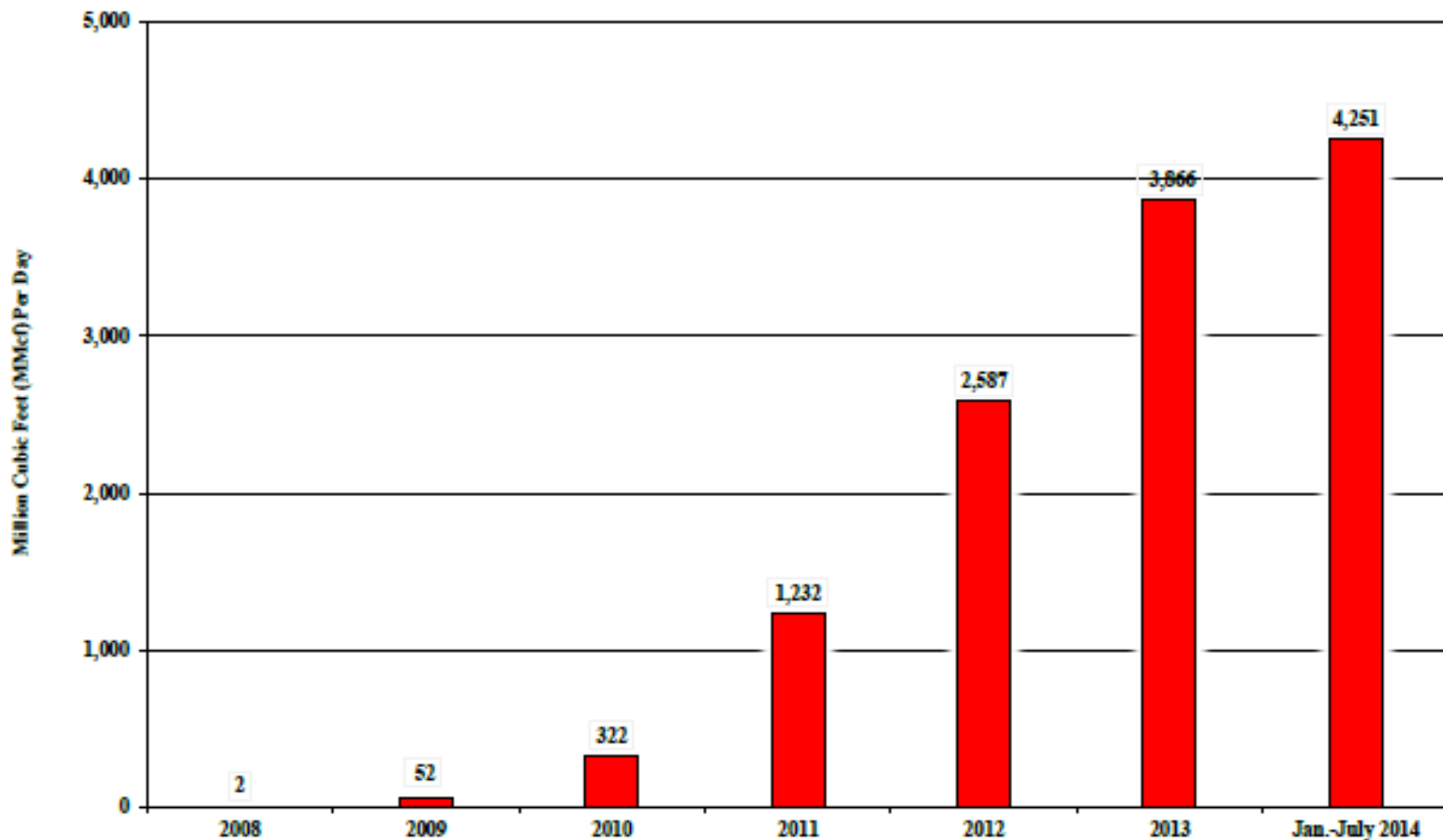
# Drilling Permits and Completions



## Texas Eagle Ford Shale Drilling Permits Issued 2008 through August 2014

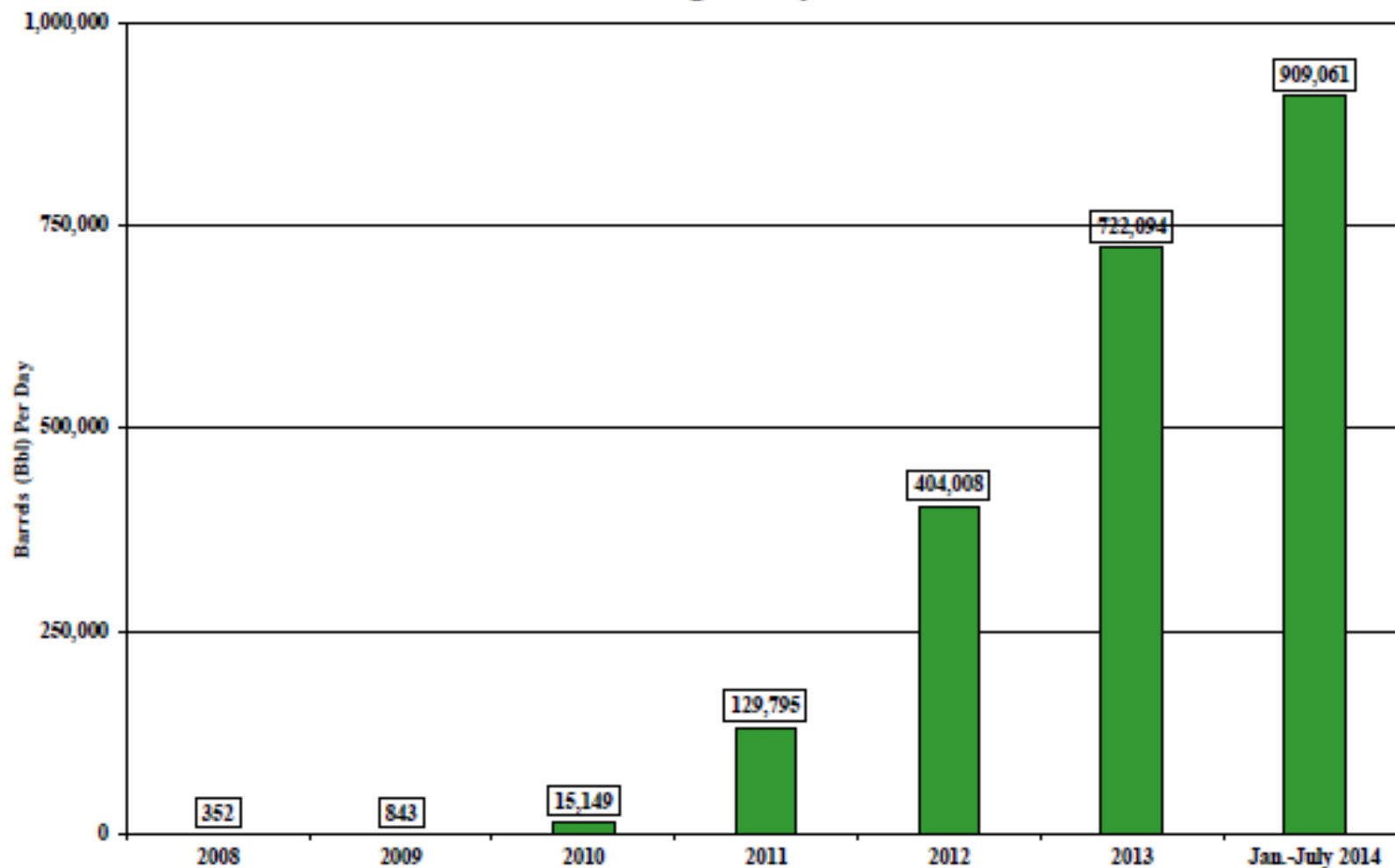


## Texas Eagle Ford Shale Total Natural Gas Production 2008 through July 2014





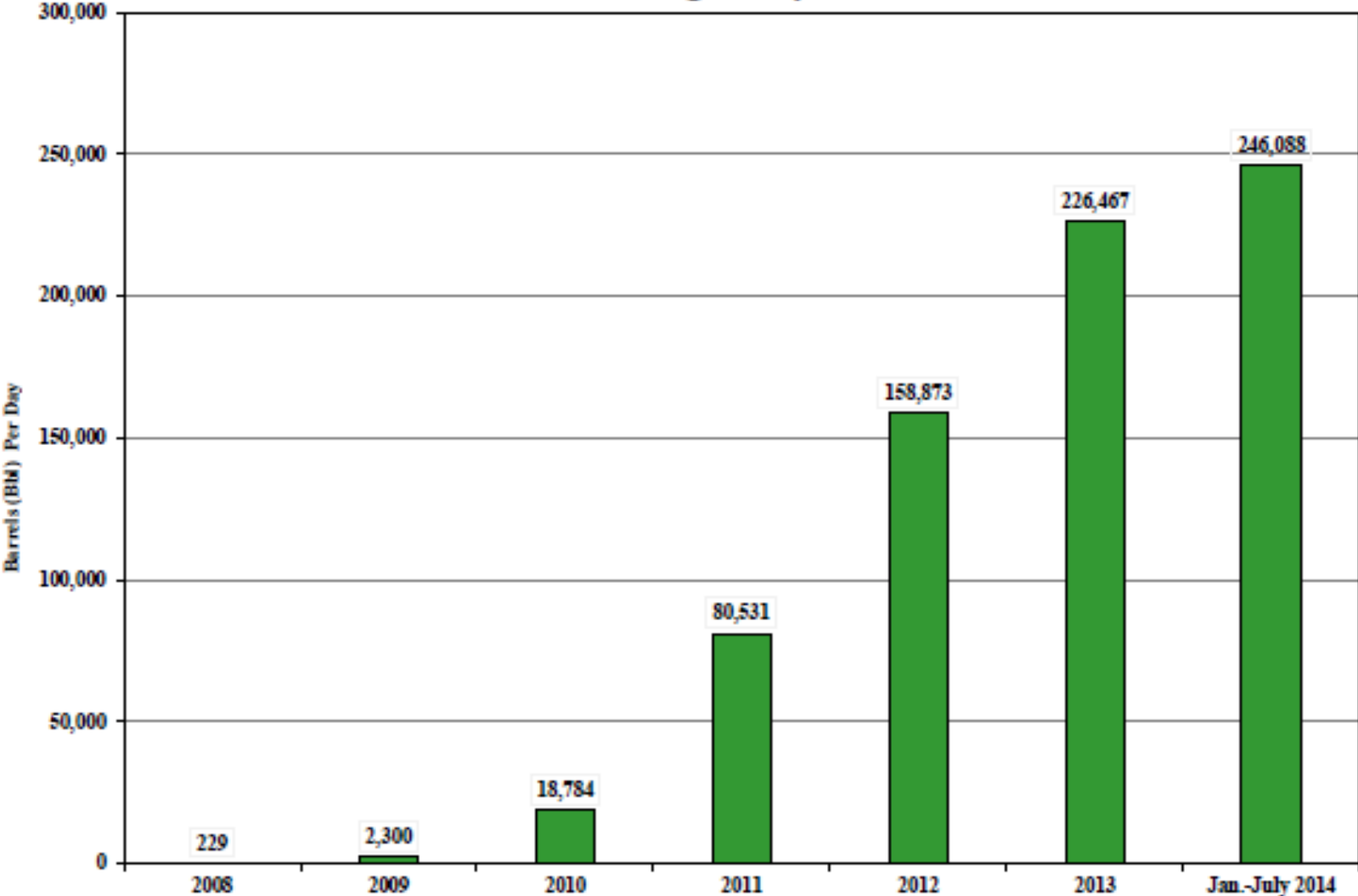
# Texas Eagle Ford Shale Oil Production 2008 through July 2014



09/24/2014

Source: Railroad Commission of Texas Production Data Query System (PDQ)

# Texas Eagle Ford Shale Condensate Production 2008 through July 2014



# Daily Oil Production in the Top 4 U.S. Oil-Producing States, 2002-2012

Thousands  
of barrels  
2 000 -

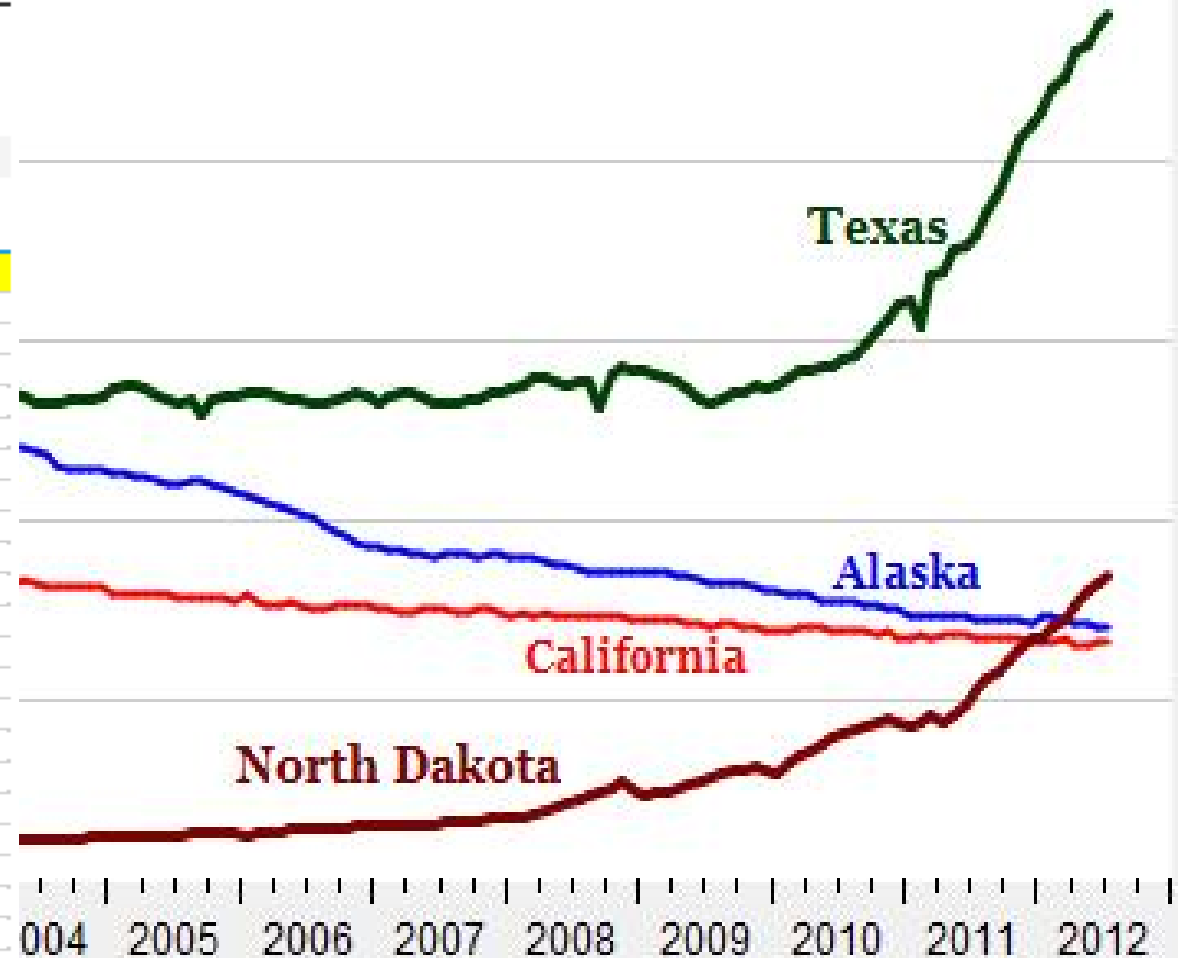
Source: EIA

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Rankings: Crude Oil Production, October 2013  
(thousand barrels)

[Download Table Data as CSV](#)

Rank	State	Crude Oil Production (thousand barrels)
1	Texas	85,320
2	North Dakota	29,191
3	California	16,950
4	Alaska	16,136
5	Oklahoma	10,008
6	New Mexico	8,599
7	Louisiana	5,924
8	Wyoming	5,735
9	Colorado	5,708
10	Kansas	4,108
11	Utah	3,038
12	Montana	2,379
13	Mississippi	2,039
14	Alabama	862
15	Illinois	819
16	Michigan	678
17	Ohio	615
18	Arkansas	572
19	Pennsylvania	512
20	West Virginia	395
21	Kentucky	313
22	Nebraska	271
23	Florida	209
24	Indiana	202
25	South Dakota	154

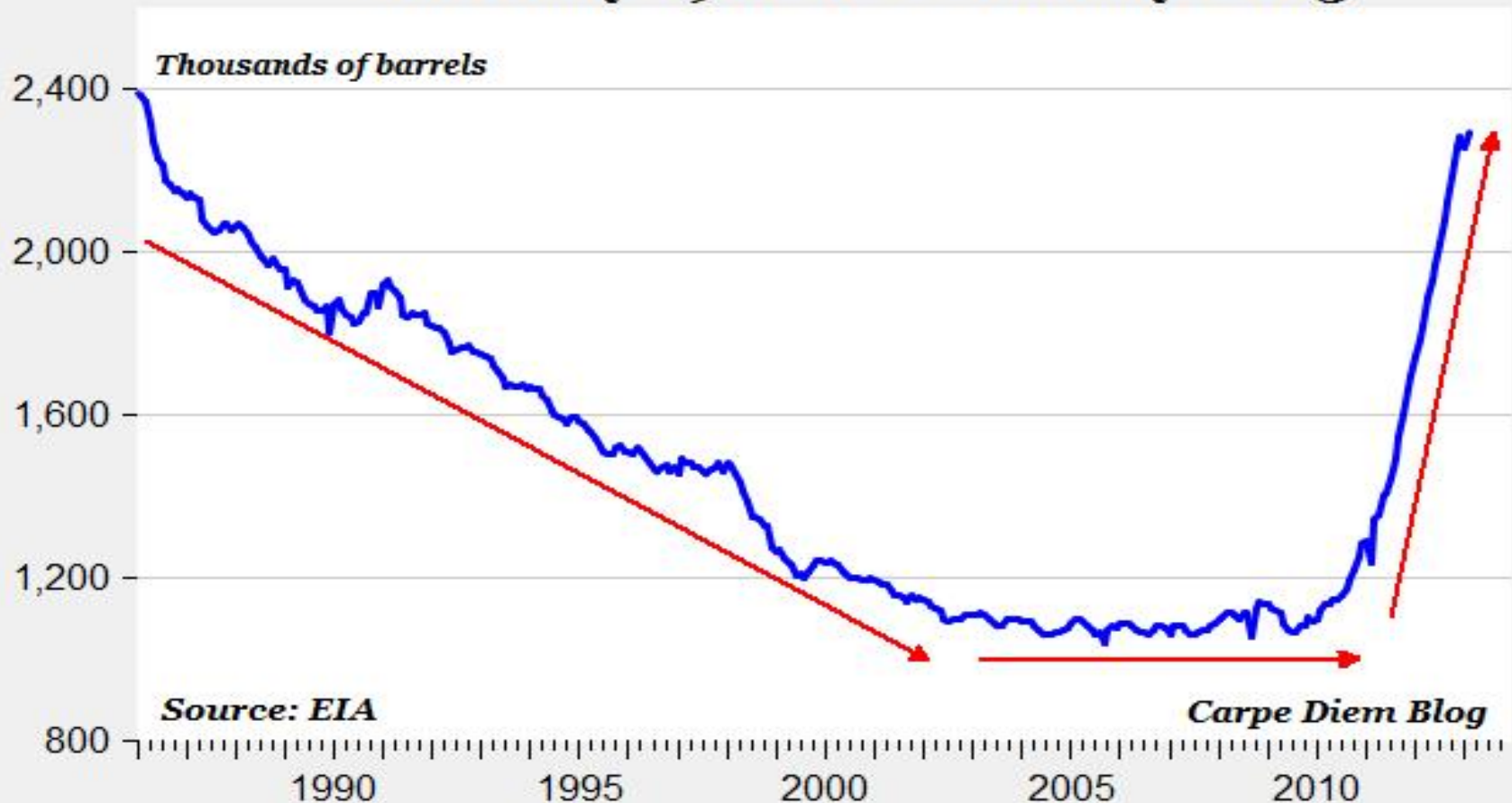




# Texas Oil Production Surpassed 1988 Levels in September 2012







## Texas: Daily Oil Production January 1986 to February 2013



# EOG Resources

## Big Fields Get Bigger

### Maximizing NPV of the Eagle Ford

	April 2010	Feb 2012	Feb 2013	Feb 2014
				
Wells/Section (Unit)	5	10	10 - 16	16
Spacing Acres/Well	130 Acres	65 Acres	40-65 Acres	≈40 Acres
Est. Reserves/Well, NAR	320 MBoe	450 MBoe	400 MBoe	450 MBoe
Est. Reserves/640 Acres	1.6 MMBoe	4.5 MMBoe	6.4 MMBoe	7.2 MMBoe
CWC/Well	\$5.25 MM	\$6 MM	\$6 MM	\$5.5 MM
Direct ATROR*/Well	80%	130%	100%	100%+
NPV10/640 Acres	\$23 MM	\$69 MM	\$98 MM	\$114 MM
Total Net Potential Resource	0.9 BnBoe	1.6 BnBoe	2.2 BnBoe	3.2 BnBoe

\* See reconciliation schedule.

# Reaching Deeper

Some of the innovations that have enabled oil output to increase almost continuously since the industry's dawn



**1909** ▲ | Roller-cone drill bits are introduced, shortening time required to drill a well.

**1929** | Directional drilling creates ability to point wells in a general direction.

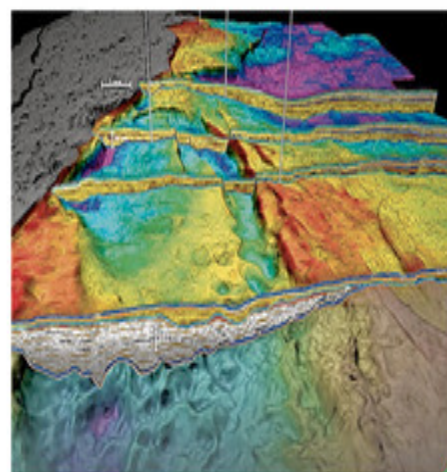
**1941** | A horizontal well, which begins vertically and then turns to run horizontally underground, is drilled in Azerbaijan.



**1946** | Researchers successfully "frack" a well in southwestern Kansas. Within a few years, hydraulic-fracturing technology will be commercially available.

**1949** ▲ | Offshore drilling begins in the shallows of the Gulf of Mexico.

**1959** | Halliburton invents high-temperature cement, allowing wells to reach deeper.



**1970** ▲ | Seismic imaging technology is used by Shell and Mobil to find "bright spots" deep under the Gulf of Mexico that indicate oil deposits.

**1982** | 3-D seismic imaging is introduced, vastly improving the industry's ability to locate oil deposits.



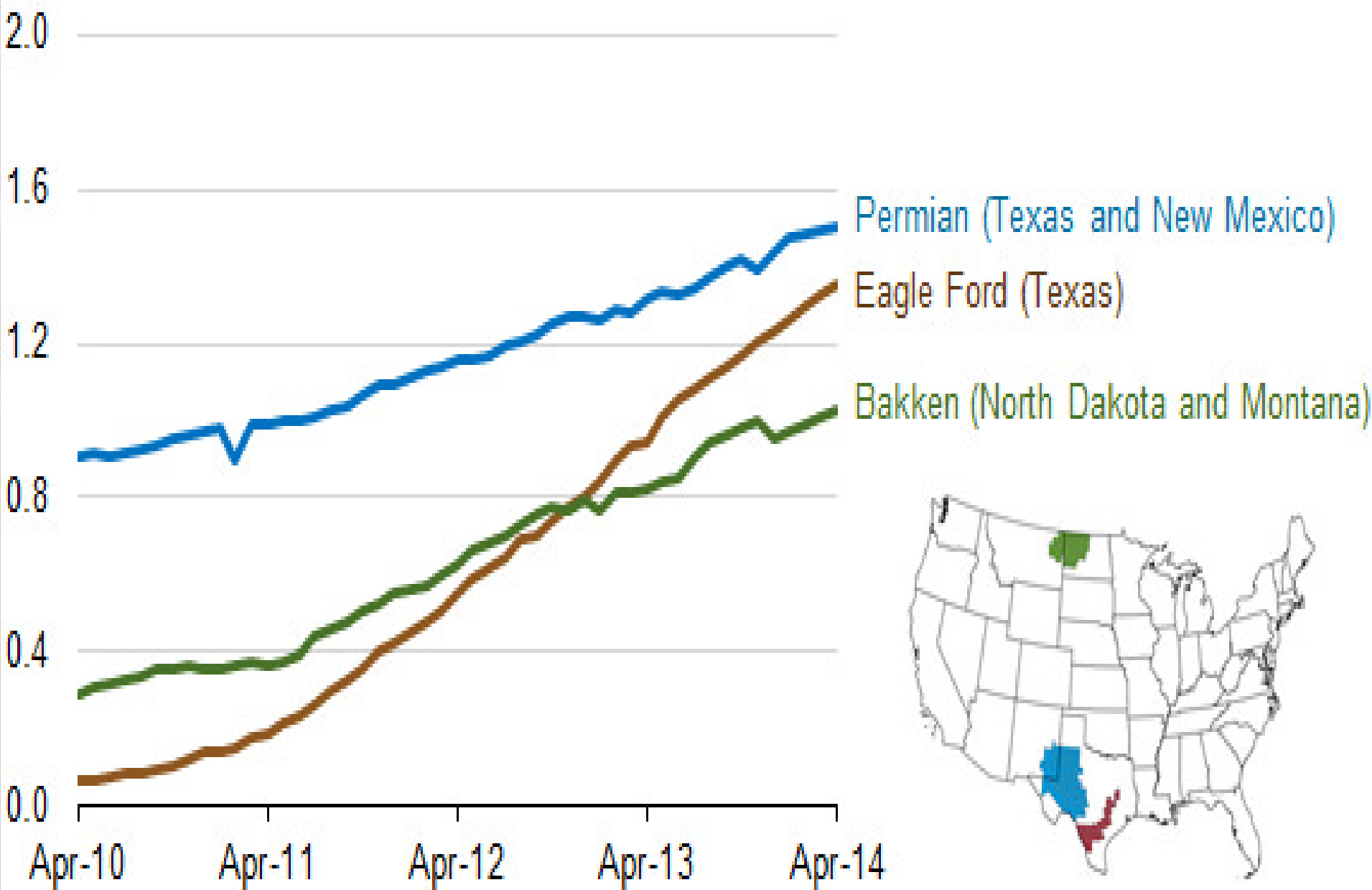
**1984** ▲ | The first "steerable" drilling system is introduced, allowing for far more precision than older directional drilling.

**1998** | BP drills a horizontal well that extends more than six miles in southern England. In 2011, Exxon will beat the record with a 7.7 mile "extended reach" well off Sakhalin Island, Russia.



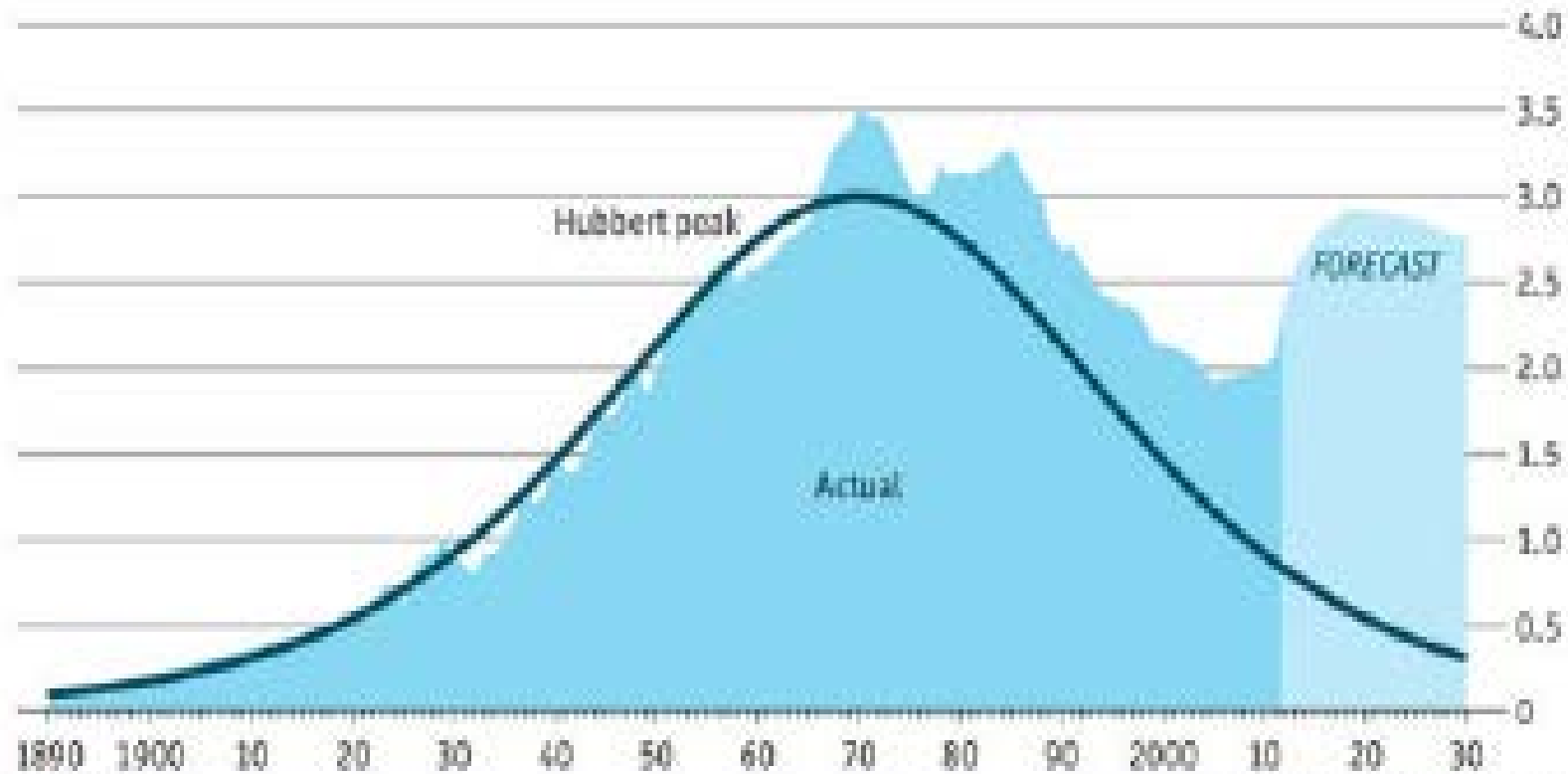
# Crude oil production at select formations (April 2010-April 2014)

million barrels per day



# American<sup>a</sup> crude oil production

Billion barrels per year



Source: BP

<sup>a</sup>All states including Alaska

# 1956

M. King Hubbert,  
a geologist for Shell Oil, says that

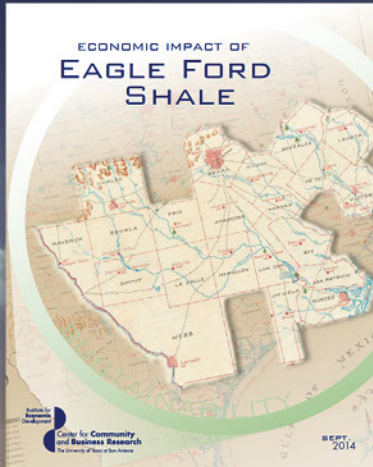
*U.S. oil production will  
likely peak between 1965  
and 1970 and decline  
steadily thereafter.*

• Output will indeed peak in 1970 and  
then trend downward—but it will jump  
by two-thirds from 2009 to mid-2014.









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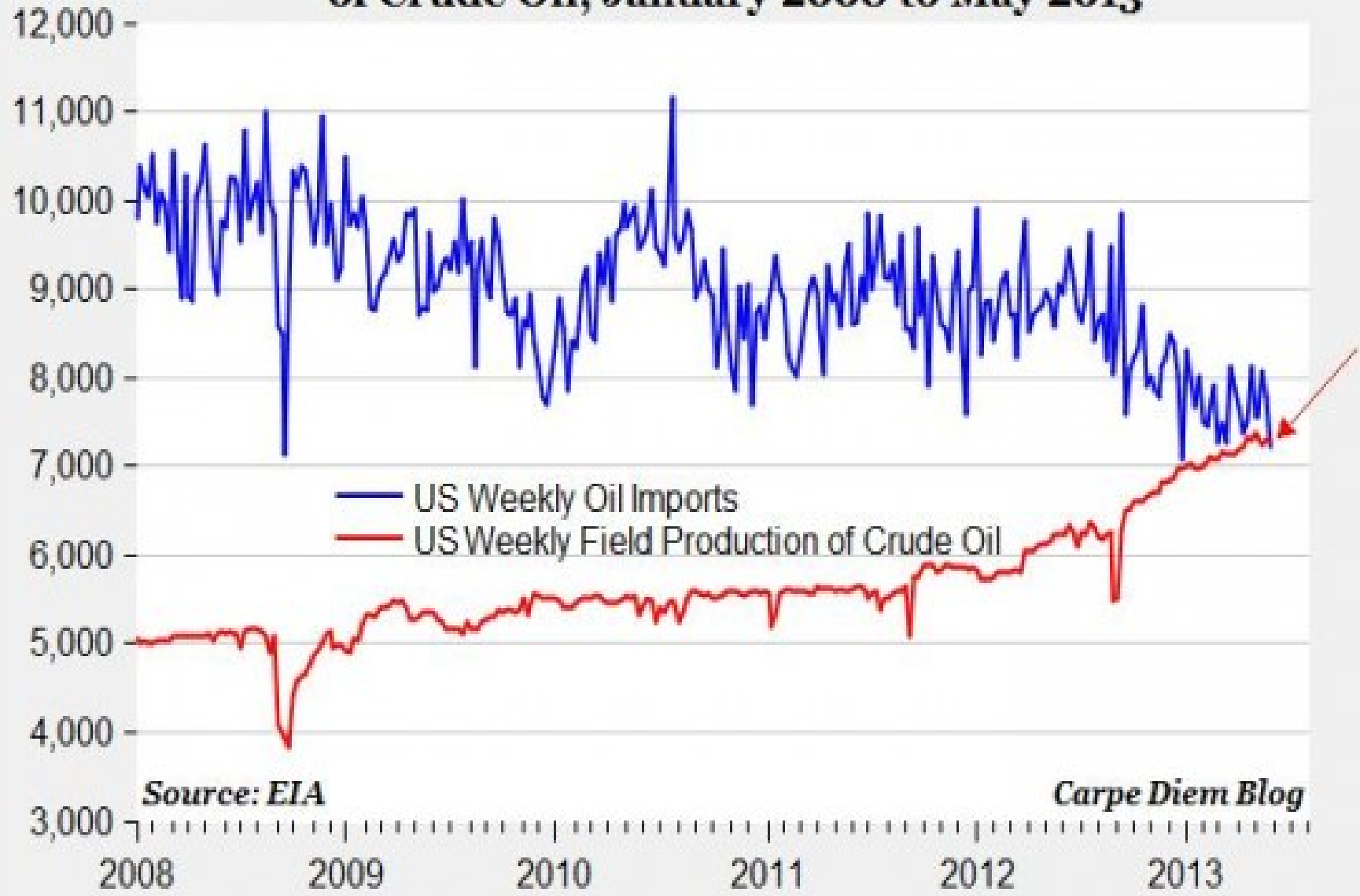
## Heading to the Coast

New pipelines will bring more of the Midwest  
and West Texas oil boom to Gulf Coast refineries.



1,000s of  
bbls/day

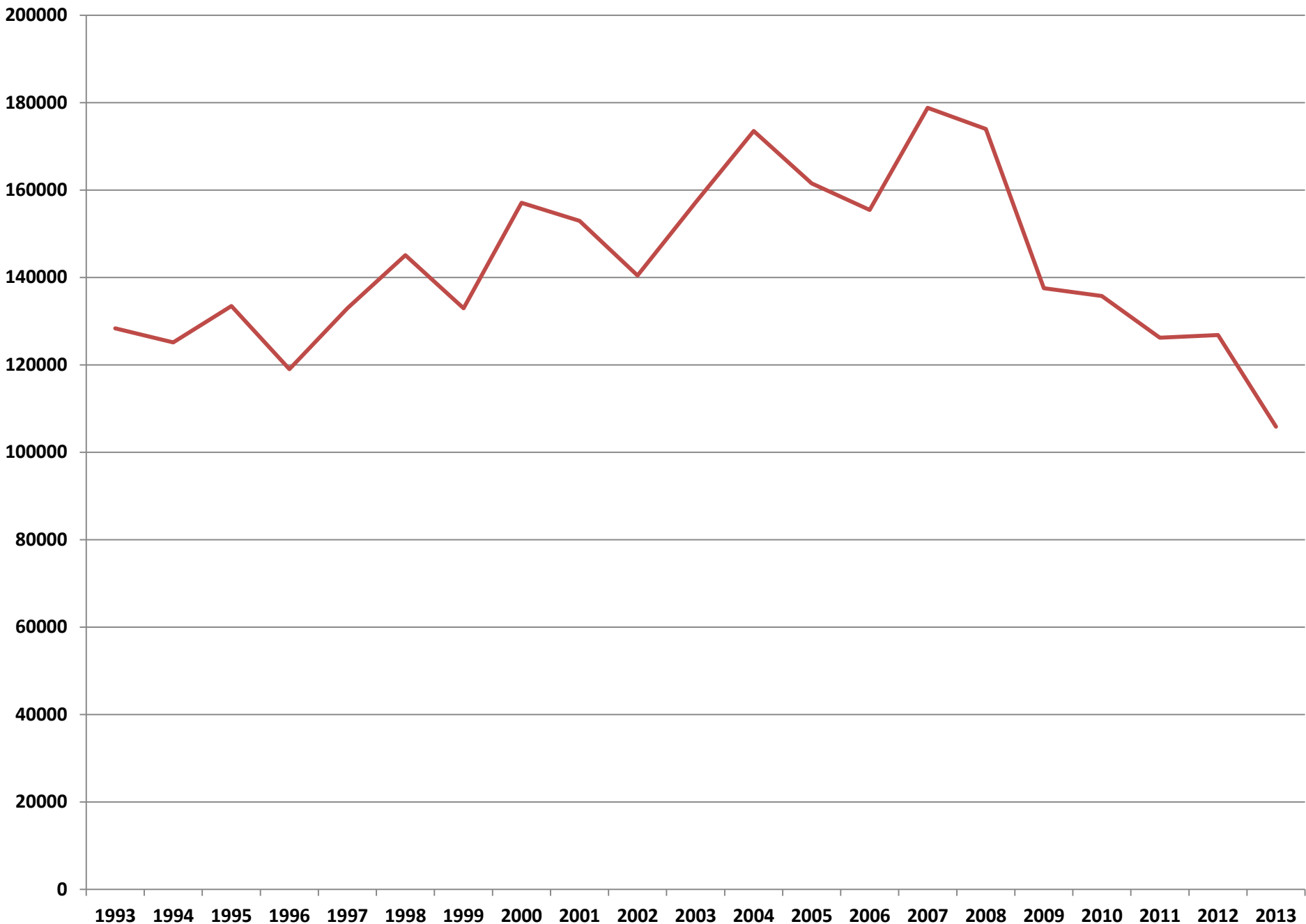
# Weekly Imports of Crude Oil vs. Weekly US Production of Crude Oil, January 2008 to May 2013



Source: EIA

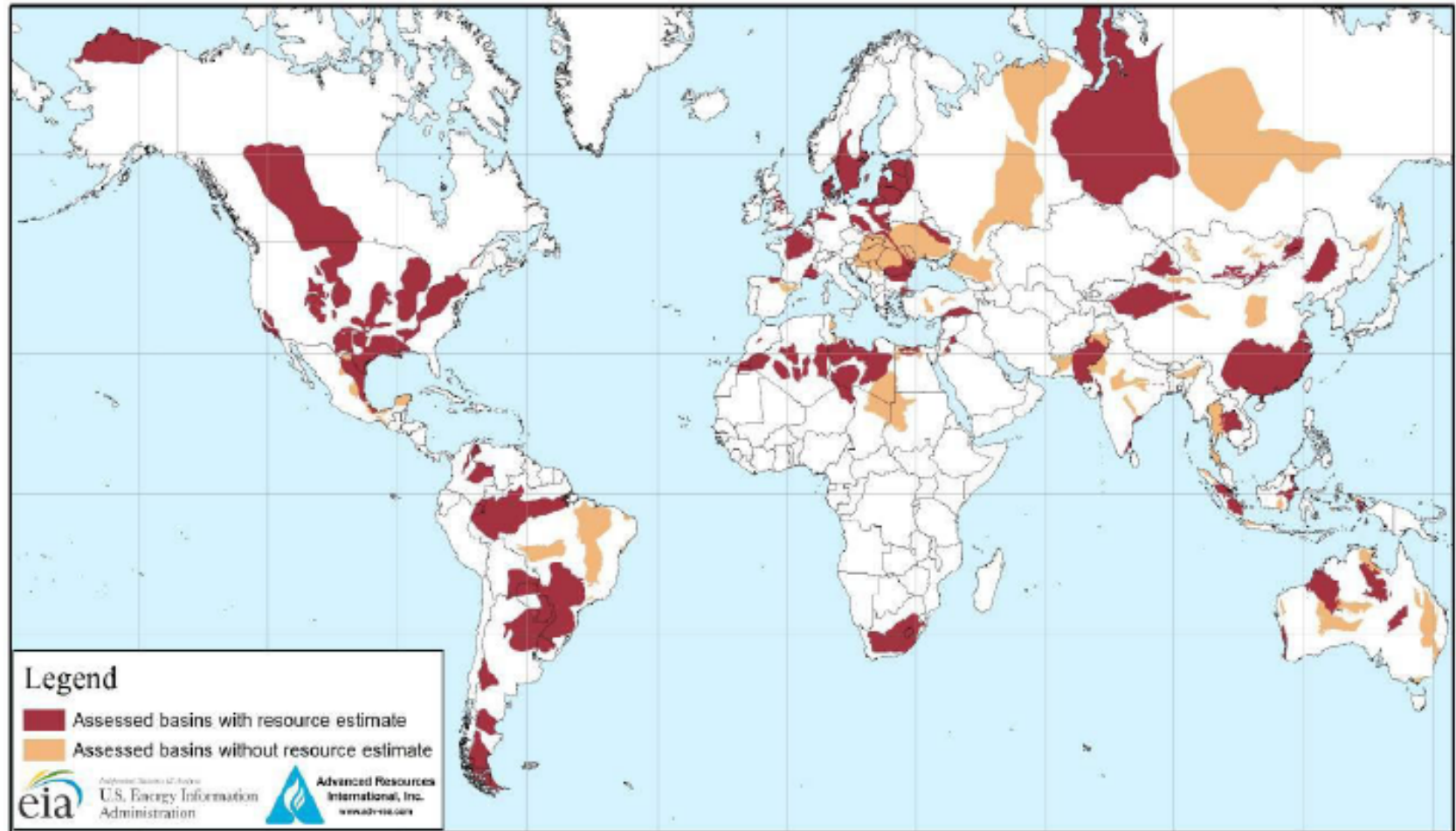
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# Crude Oil U.S. Imports from OPEC Countries (000 Barrels)



# Shale oil and gas have the potential to dramatically alter world energy markets

map of basins with assessed shale oil and gas formations, as of May 2013

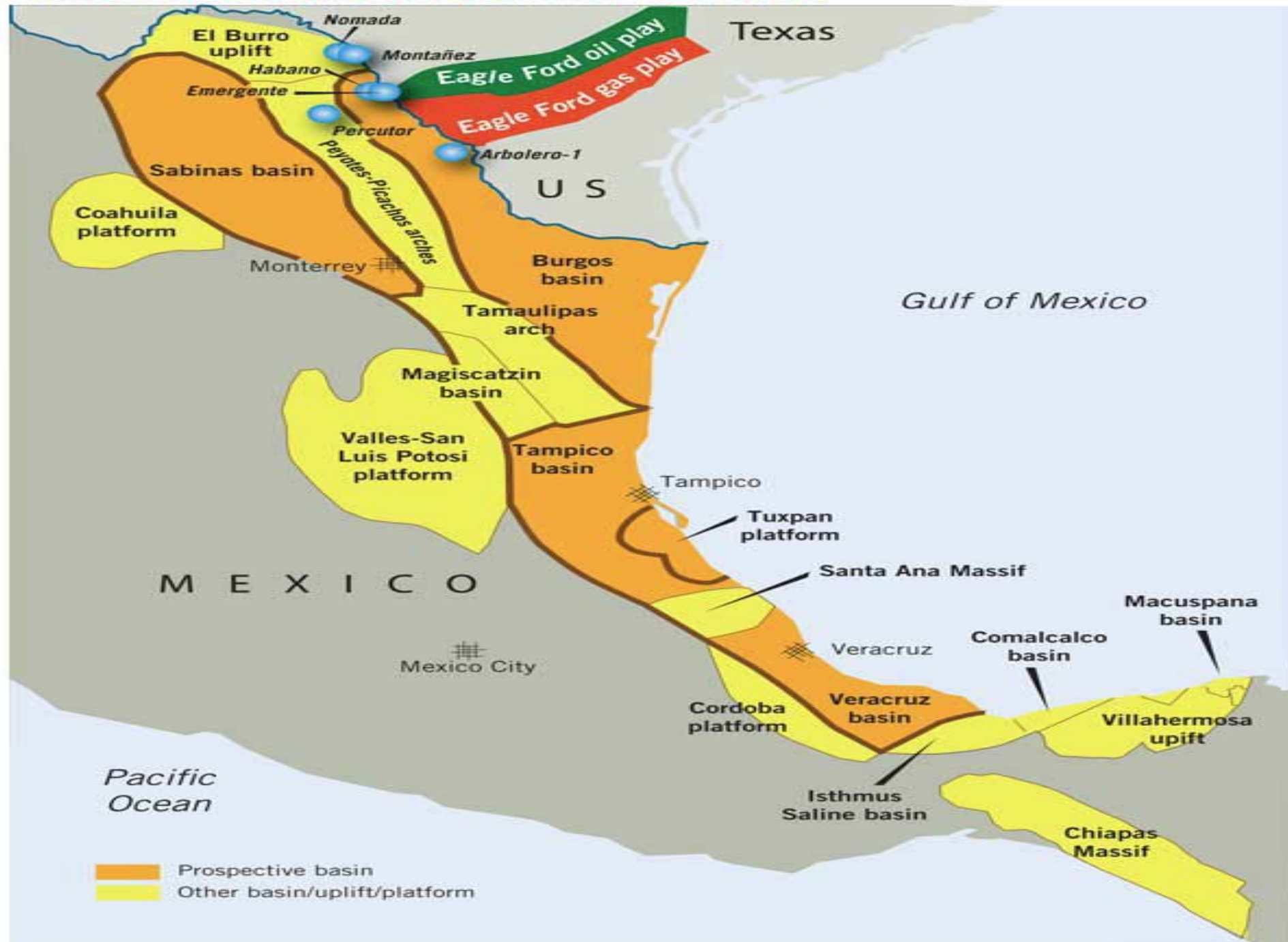


Source: United States: EIA and USGS; Other basins: ARI





# PROSPECTIVE SHALE BASINS OF EASTERN MEXICO



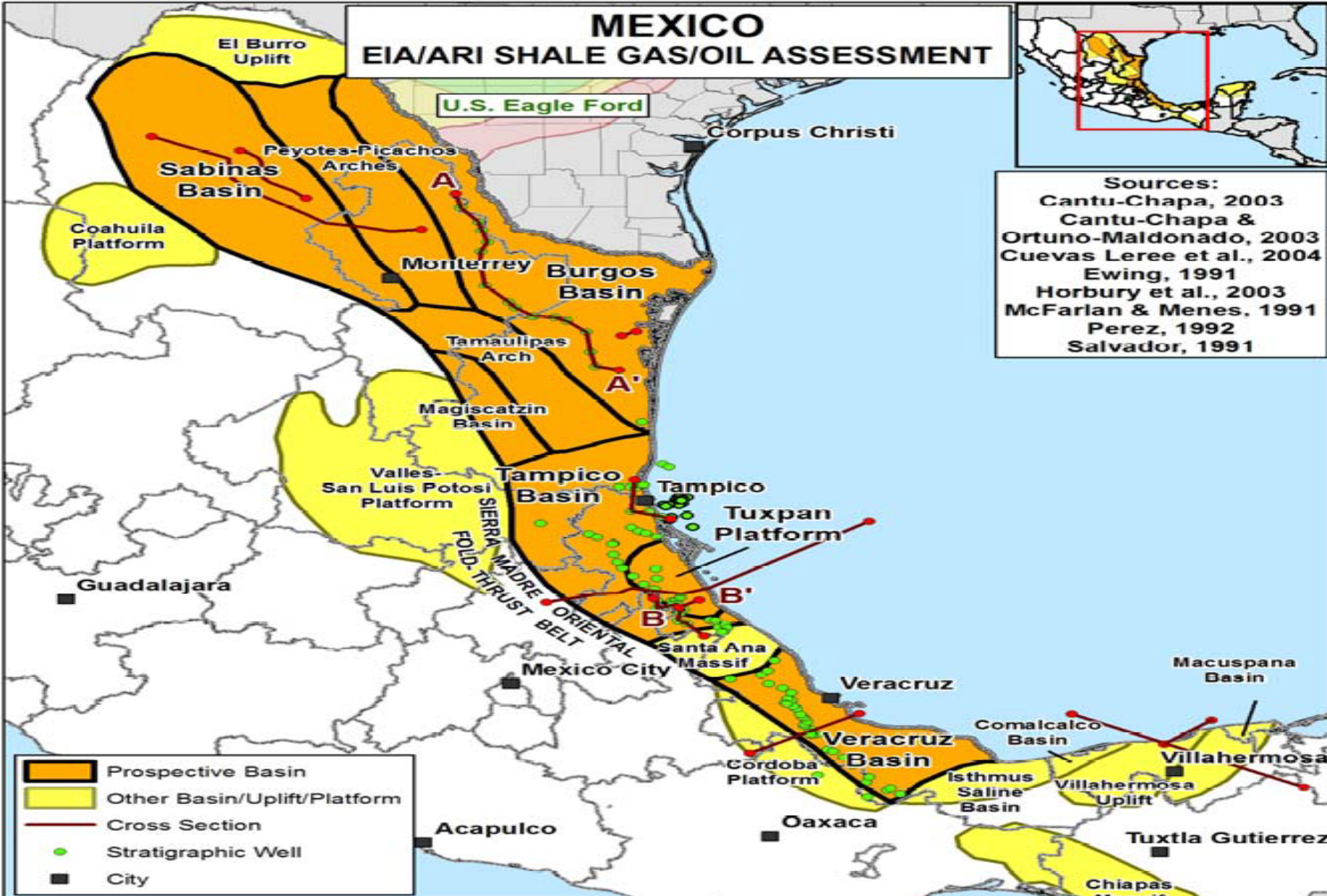


# MEXICO

## EIA/ARI SHALE GAS/OIL ASSESSMENT

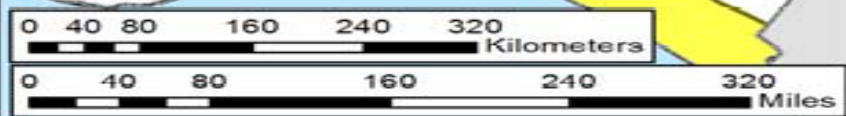


**Sources:**  
 Cantu-Chapa, 2003  
 Cantu-Chapa &  
 Ortuno-Maldonado, 2003  
 Cuevas Leree et al., 2004  
 Ewing, 1991  
 Horbury et al., 2003  
 McFarlan & Menes, 1991  
 Perez, 1992  
 Salvador, 1991

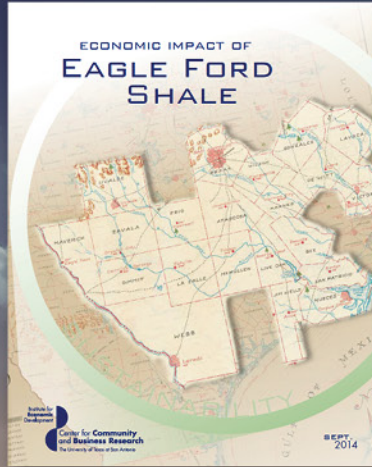


- Prospective Basin
- Other Basin/Uplift/Platform
- Cross Section
- Stratigraphic Well
- City

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 Scott Stevens sstevens@adv-res.com  
 Keith Moodhe kmoodhe@adv-res.com



# Implications of Mexican Energy Reform



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- **New exploration, drilling and operational economic impact**
- **Related midstream development (pipeline and storage) impact**
- **Results of rulemaking process**
- **Infrastructure issues**
- **Security issues**
- **Workforce needs**
- **Doing business with PEMEX**

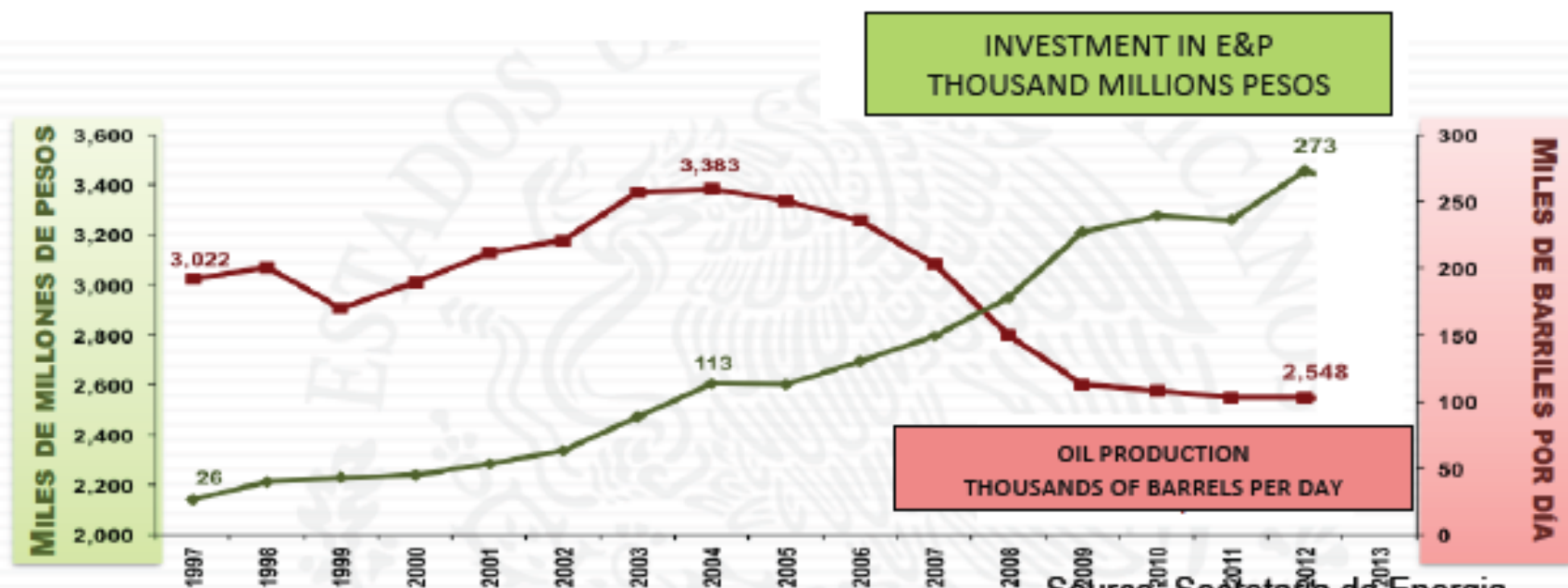




# MEXICO'S ECONOMY AND HYDROCARBONS

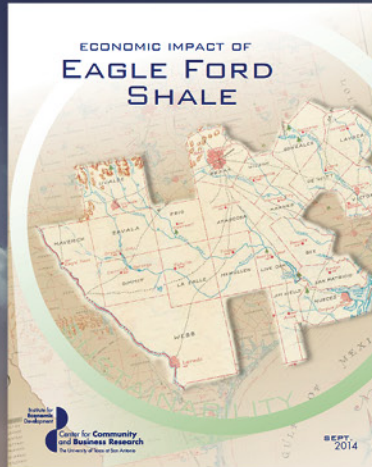
Hydrocarbons represented 34% of the Federal budget.

- More investment
- Declining production
- Growing demand



Source: Secretaria de Energia

# How Is Energy Reform Likely to Proceed in Mexico?



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- PEMEX will focus on **conventional and deep water** opportunities
- Initial private company E&P efforts will be focused on **shale oil opportunities**
- **Wider availability of geological information** in Northern Mexico will be important to private E&P efforts
- **Natural gas pipeline infrastructure** in Mexico will be built out before gas production begins
- **Mexico-U.S. (Texas) partnership** opportunities will abound
- Opportunities for support services (**temporary housing, food service, trucking, welding, etc.**) will be significant

# E&P– UPSTREAM NEW MODEL

REGULATED BY MINISTRY OF ENERGY AND CNH

EXPLORATION AND PRODUCTION  
CONTRACTS

E&P



ASSIGNMENTS



MIGRATION  
To  
E&P  
CONTRACTS

LICENCES

PRODUCTION  
SHARING  
CONTRACT

PROFIT  
SHARING  
CONTRACT

SERVICES

In kind  
Hydrocarbons

In kind  
Hydrocarbons

Cash

Cash

How do  
contractors  
get paid?

Signing Bonus

Contractual fee for exploratory phase (km)

Royalties

Compensation  
based hydrocarbon  
value

Compensation based on  
operating income

How the  
government  
get paid?



ISR

Taxes

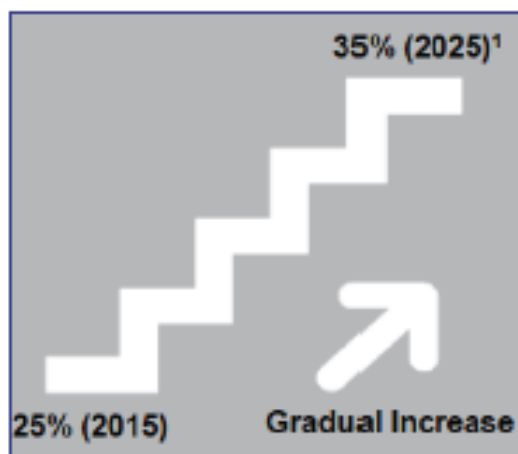
Fee for Exploration and Production

\$1,500 E / \$6,000 P (km<sup>2</sup>)



## THREE IMPORTANT TOPICS

### DOMESTIC CONTENT RULES



Mexican participation in the supply and productive chain To be determined in every Contract

### BOOKING OF THE RESERVES

The booking of reserves is an important **financial** reporting practice that allows oil and gas companies to reflect the volume of reserves they have the right to produce and market.

The reform establishes that private parties and PEMEX may “report for accounting and financial purposes, assignments and corresponding contract and expected benefits” as long as the assignments or contracts establish that, until produced, title to all hydrocarbons in the ground resides exclusively with the State.

### SURFACE USE AND RIGHT OF WAY

The hydrocarbon industry is of public interest. No Eminent domain process authorized. Instead, activities shall be **negotiated**:

Consideration must include, as applicable:

- **Compensation payments and damages**
- **Rent** for occupation, easement, or use of the land at **market value**;
- If there is a commercial production of hydrocarbons, a **percentage of the total revenue**:
  - 0.5% - 2% oil.
  - 0.5% - 3% gas.





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ATTORNEYS ABOGADOS



# AN IMPORTANT LEGAL DISTINCTION: MINERAL RIGHTS

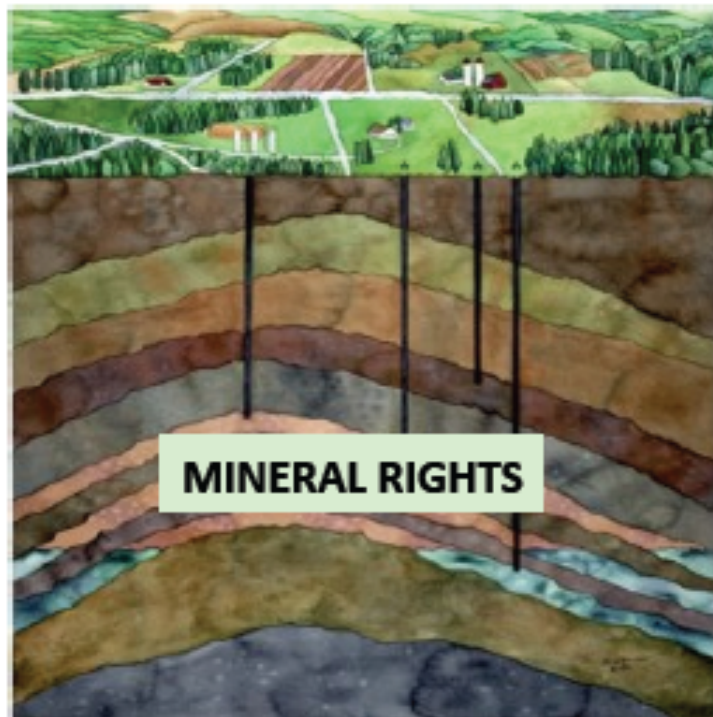


**FEDERAL LAW**

IN MEXICO  
MINERAL  
RIGHTS  
BELONG TO  
THE NATION



**SURFACE RIGHTS**



**MINERAL RIGHTS**



**STATE LAW**

Transfer, mining and  
drilling

IN THE US  
AND TEXAS  
SURFACE AND  
MINERAL  
RIGHTS  
BELONG TO  
THE  
LANDOWNER



# *Economic Impact Study About the Opening of the Energy Sector in Mexico in the Northern States of Mexico, Including Legal Analysis of the Reform and a Guide on How to do Business in the Energy Sector in Mexico*

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COMITE BINACIONAL DE ENERGIA  
BI-NATIONAL ENERGY COMMITTEE

# GEOGRAPHICAL SCOPE OF THE STUDY

## GEOLOGICAL PROVINCES

OF

Sabinas

Tampico-Misantla

Burgos

Burro Picachos

Veracruz

STATES OF

COAHUILA

NUEVO LEON

SAN LUIS POTOSI

TAMAULIPAS

VERACRUZ



ECONOMIC IMPACT  
STUDY

ONLINE PLATFORM  
CONNECT B2B WITHIN  
ENERGY SECTOR IN  
MEXICO AND TEXAS

LEGAL ANALYSIS

BUSINESS ROADMAP  
ON HOW TO DO  
BUSINESS IN THE  
ENERGY SECTOR



IDEAS & SUGGESTIONS  
ARE WELCOMED

THANKS!  
POWER UP THE COUNTY



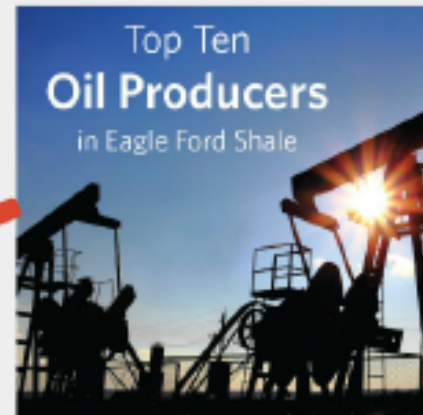
# AEM UTSA Energy Initiative

# AEM ENERGY PLATFORM (AEP)

An **Online Platform** to facilitate business interaction within the energy sector in Mexico and the USA, linking **Government institutions, Academia** and **Companies** that participate in the extraction, transport and refining processes in both countries.



# why we need a Platform?



# PLATFORM OVERVIEW (How will be build)

why we need a Platform?



The development and maintenance of this **Platform** is sponsored by the **AEM**. The **MBDA Global Center** from the **Institute for Economic Development in UTSA** will identify, and provide the companies involved in the energy sector in both countries.





# AEP INITIAL PRIORITY (Oct -Dec 2014)



AEM will develop the infrastructure of the platform including:

1. HOME
2. ABOUT US
3. FORUM
4. DIRECTORY USA
5. DIRECTORY MEXICO
6. BINATIONAL ENERGY NEWS
7. ENERGY REFORM LEGISLATION
8. EVENTS CALENDAR
9. BLOG
10. CONTACT

# AEP INITIAL PRIORITY (Oct -Dec 2014)



the **MBDA Global Center** from will create a **research team** to identify, classify, and capture all relevant information of the companies involved in the energy sector in both countries and will transfer the files to **AEM** to be uploaded in the **Platform**.

# AEP PRIORITIES FOR 2015

Long-Term Priorities (2015 and beyond) include the strategy to expand the AEP to all other regions in US with oil and gas activities and in Mexico (State level) and other countries. Promote the participation in AEP with Media, Chambers of Commerce and industrial Clusters, to enrich its content and promote visits to ensure its sustainability.



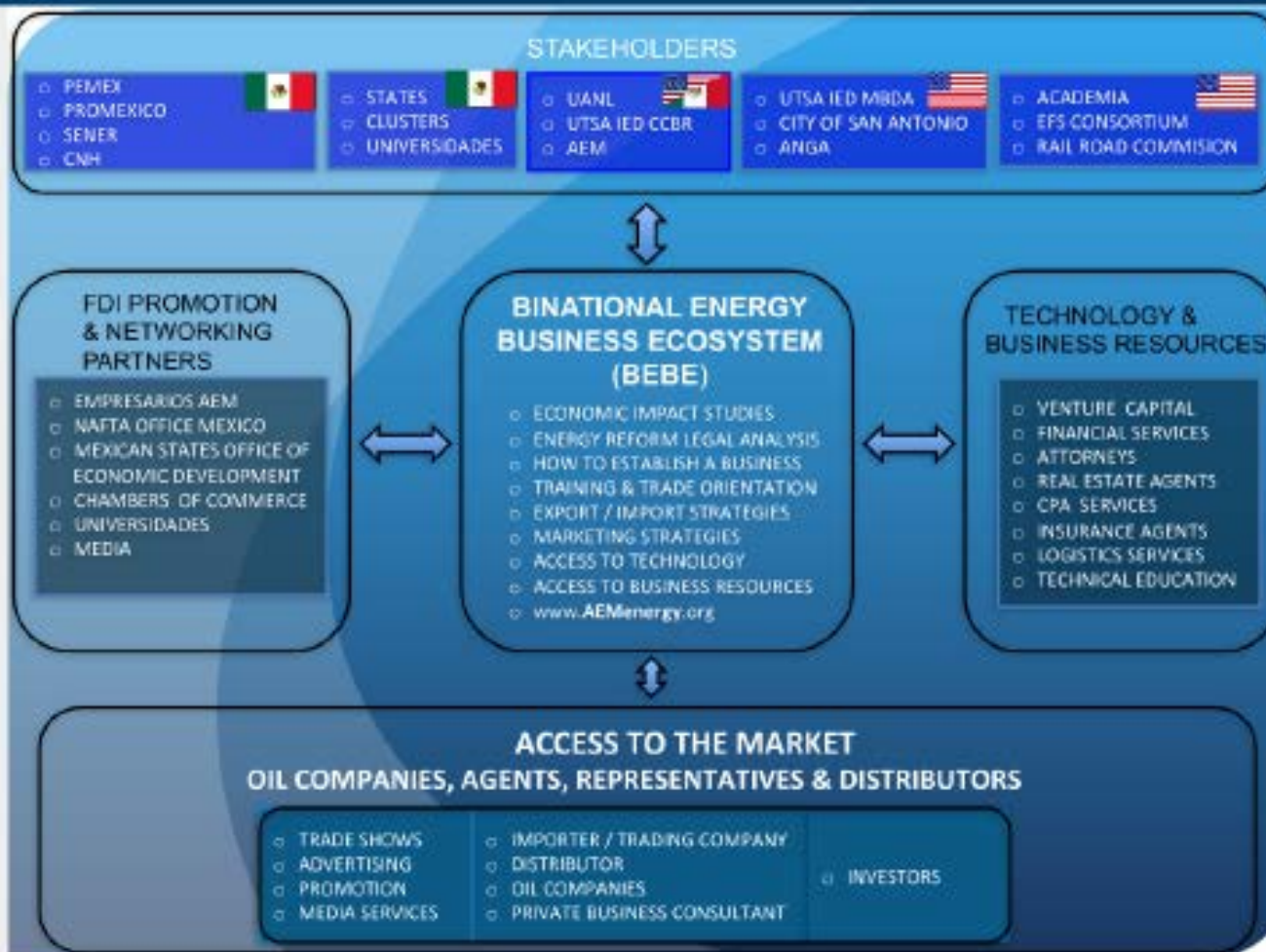
# BINATIONAL ENERGY BUSINESS ECOSYSTEM (BEBE)

This **Platform** together with the other areas of the study will create a virtual **Binational Energy Business Ecosystem (BEBE)** that will allow American and Mexican entrepreneurs and SME's to take **informed decisions** in their international expansion.





# BINATIONAL ENERGY BUSINESS ECOSYSTEM (BEBE)

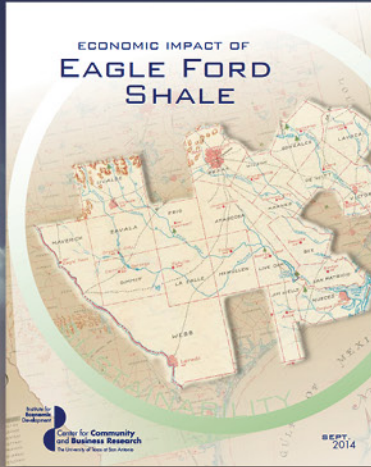


**IDEAS & SUGGESTIONS  
ARE WELCOMED**

**THANKS!**

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# Total Economic Output Impact in 2013 21-County Study Region



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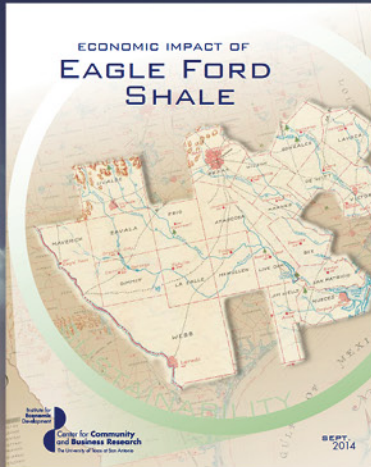
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- Over **\$87 billion** in economic output (up from \$61B in 2012 and \$25B in 2011)
- Over **154,000** full-time jobs supported (up from 116,000 in 2012 and 47,097 in 2011)
- Over **\$5.6 billion** in salaries and benefits paid to workers (up from \$4.7B in 2012 and \$3.1B in 2011)
- Over **\$42 billion** in gross regional product (up from \$28B in 2012 and \$12.63B in 2011)
- Over **\$2.2 billion** in state revenues (up from \$1.2B in 2012 and \$358 million in 2011)
- Over **\$2.2 billion** in local government revenues (up from \$1B in 2012 and \$257 million in 2011)



# Moderate Scenario Estimated Combined Impacts for 2023 (21-County Area)



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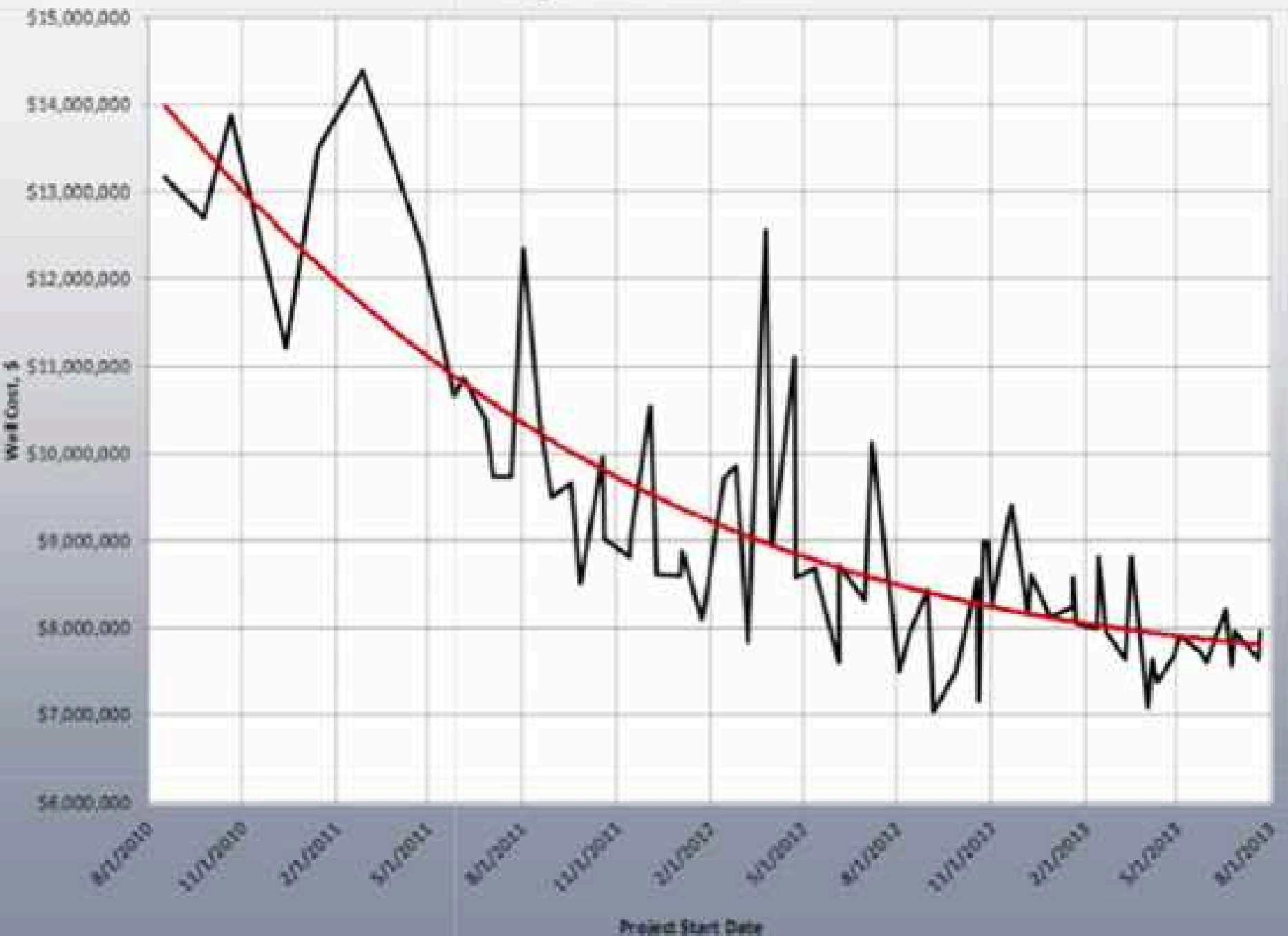
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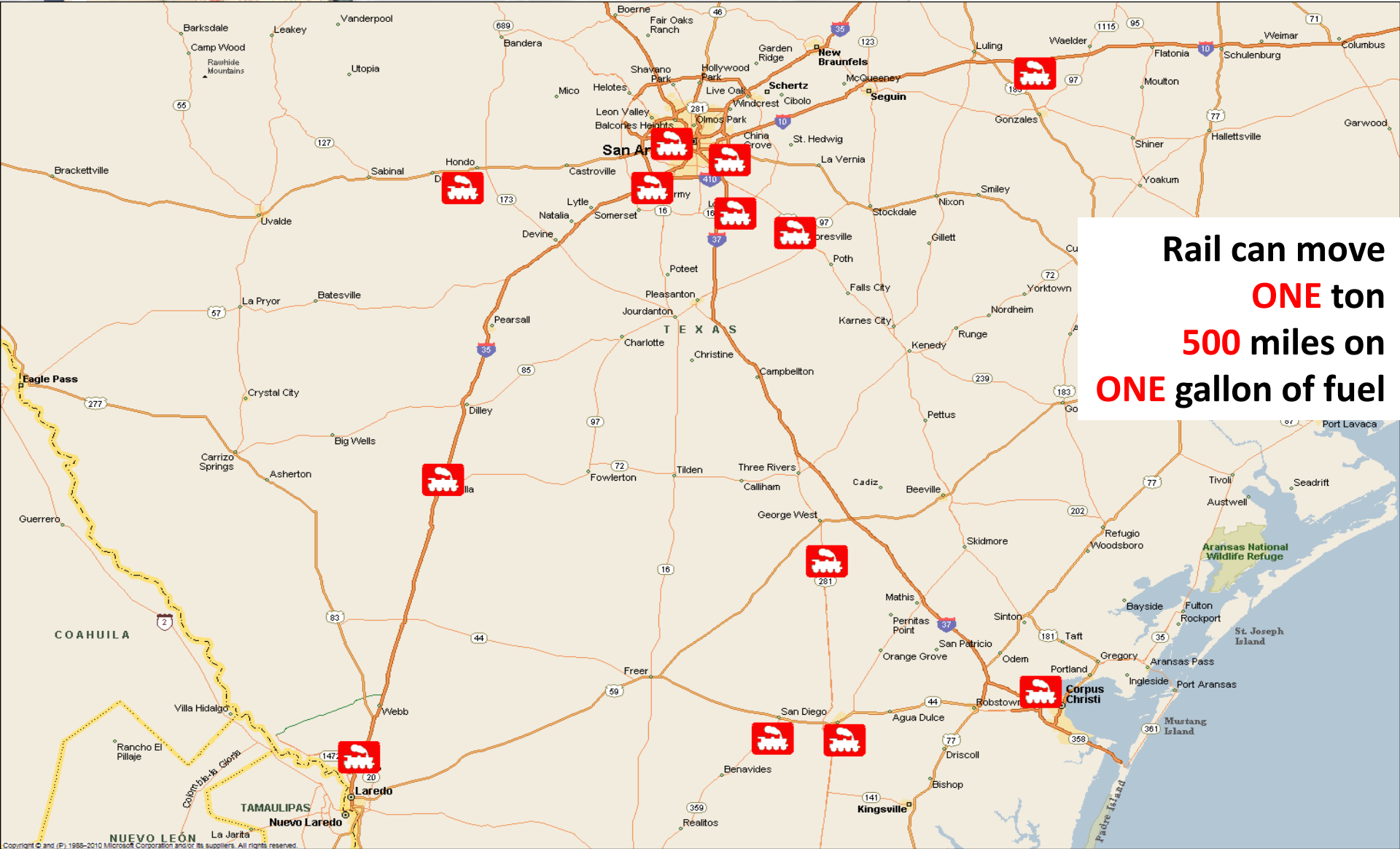
- More than **\$137 billion** in total economic output
- **196,660** full-time jobs supported
- **\$12 billion** in salaries and benefits paid
- **\$72 billion** in gross regional product
- **\$4 billion** in state revenues
- **\$4 billion** in local government revenues



# Eagle Ford Well Costs



# New and Expanded Rail Projects in the Eagle Ford



Rail can move **ONE** ton **500** miles on **ONE** gallon of fuel

# Gardendale Railroad 2009- La Salle County Status : Abandoned





# Gardendale Railroad-2013 La Salle County





# Gardendale Rail Spur near Cotulla

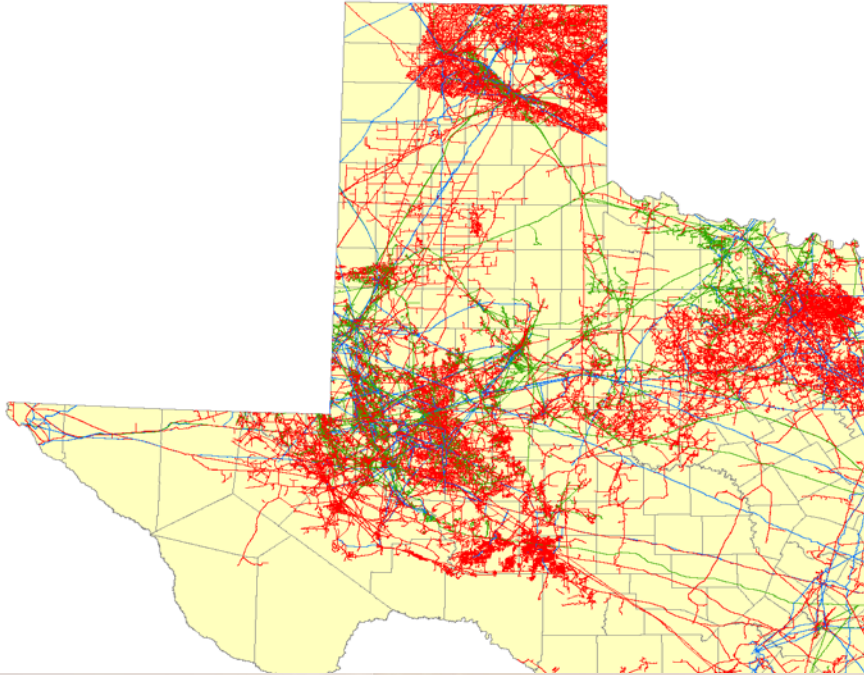






# Pipelines in Texas

ECONOMIC IMPACT OF  
PIPELINES



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**There's no chance that the iPhone is going to get any significant market share. No chance**



**Microsoft CEO Steve Ballmer, 2007.**



# NOT THERE YET

Notable past predictions of peak oil that didn't turn out

**1885** The state geologist of Pennsylvania warns that the “amazing exhibition of oil” is only a “temporary and vanishing phenomenon.” And John Archbold, John D. Rockefeller’s partner in Standard Oil, sells some company shares at a discount, fearing that oil will run out.



*“I will drink every gallon [of oil] produced west of the Mississippi.”*

John Archbold

# 1919



*“Within the next two to five years, the oil fields of this country will reach their maximum production, and from that time on we will face an ever-increasing decline.”*

Van H. Manning, director of the U.S. Bureau of Mines

› By the late 1920s, the market will be awash in oil, and the discovery of the giant East Texas oil field in 1931 will create a glut.

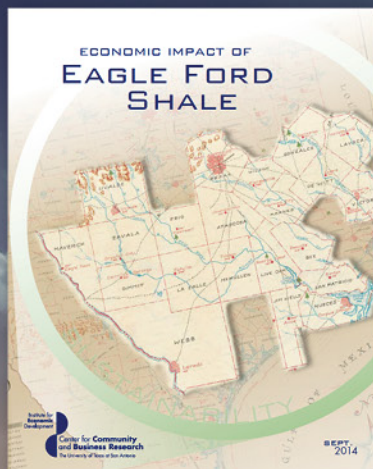
# 2005 Energy tycoon T. Boone Pickens tells a conference of alternative-fuel advocates:



*"Global oil [production] is 84 million barrels [per day]. I don't believe you can get it any more than 84 million barrels. I don't care what*

*Abdullah, Putin or anybody else says about oil reserves or production. I think they are on decline in the biggest oil fields in the world today."*

> In 2013, global oil production will top 90 million barrels a day.



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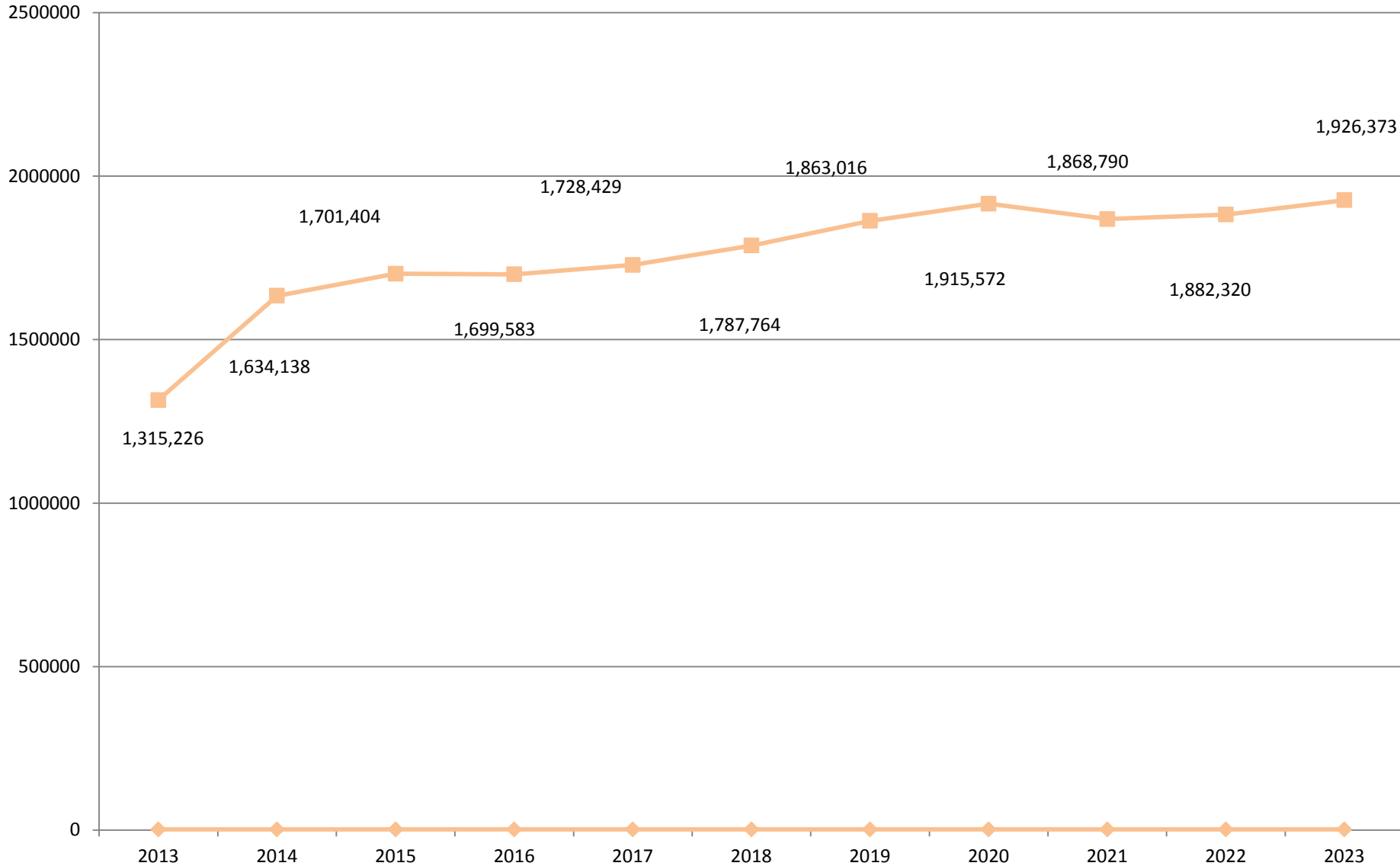
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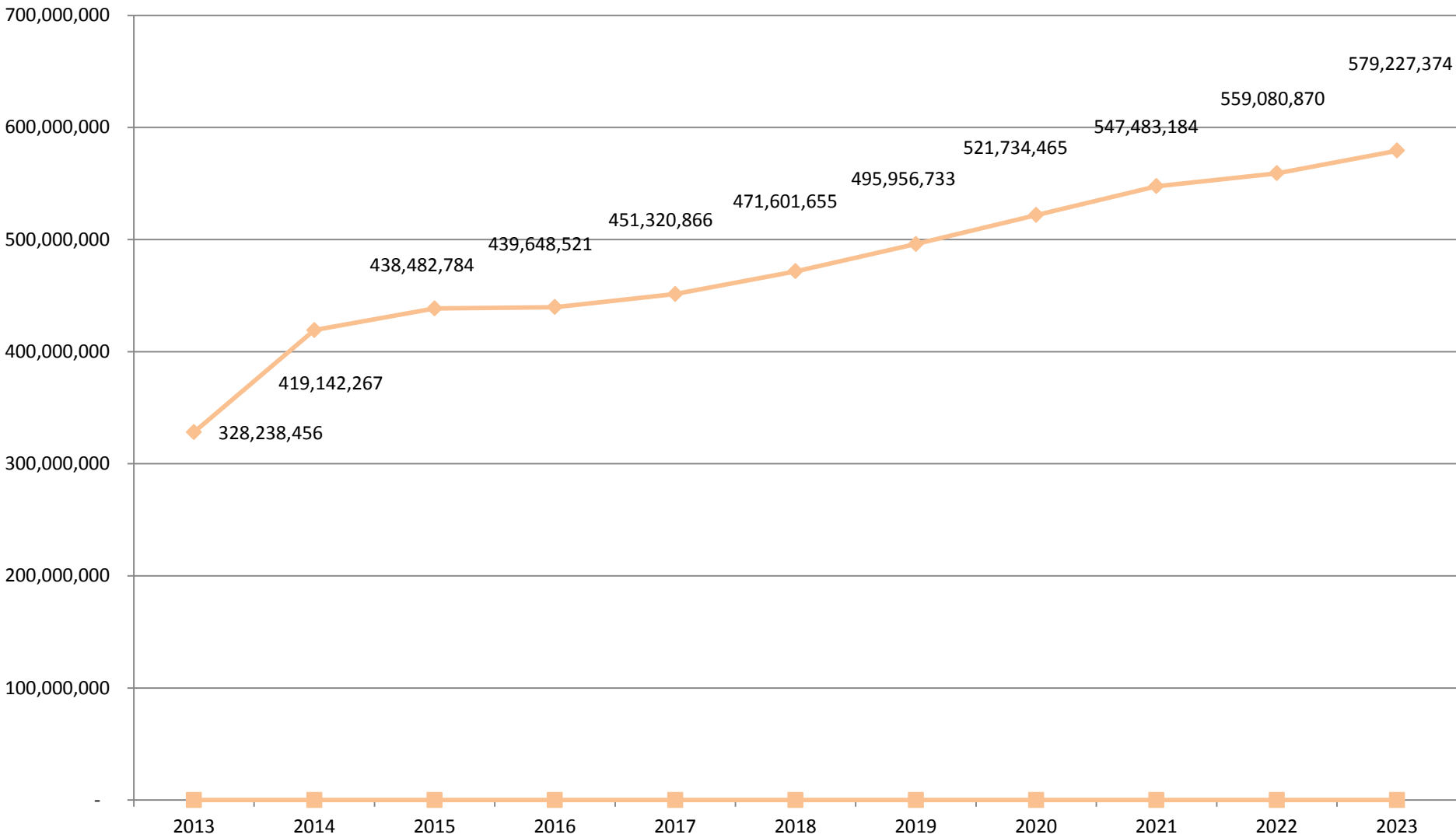
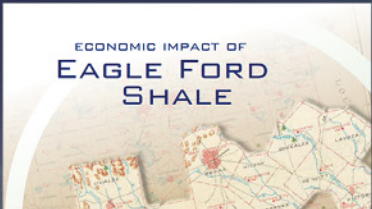
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# Updated Natural Gas Annual Production Forecast 2014

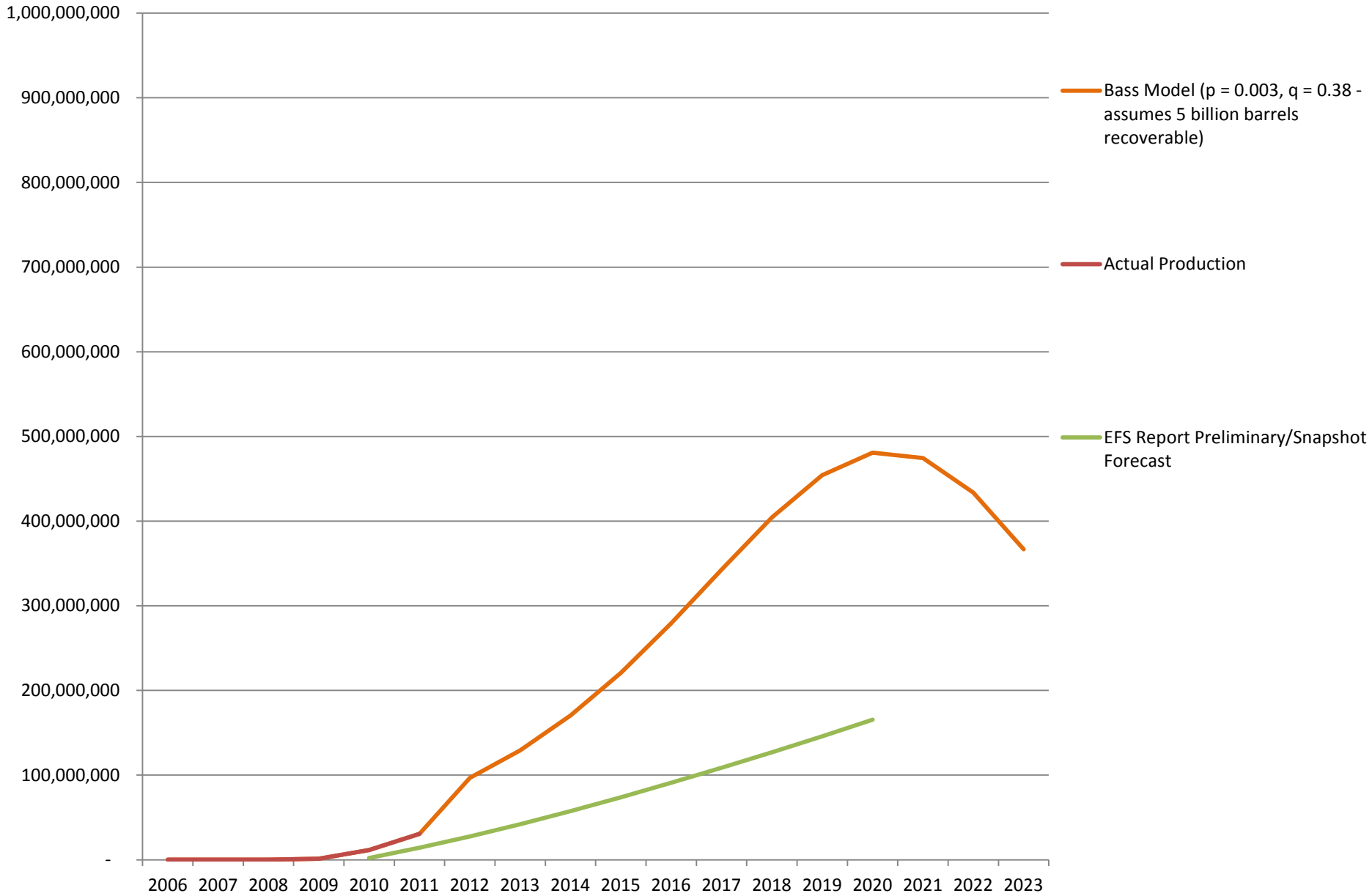




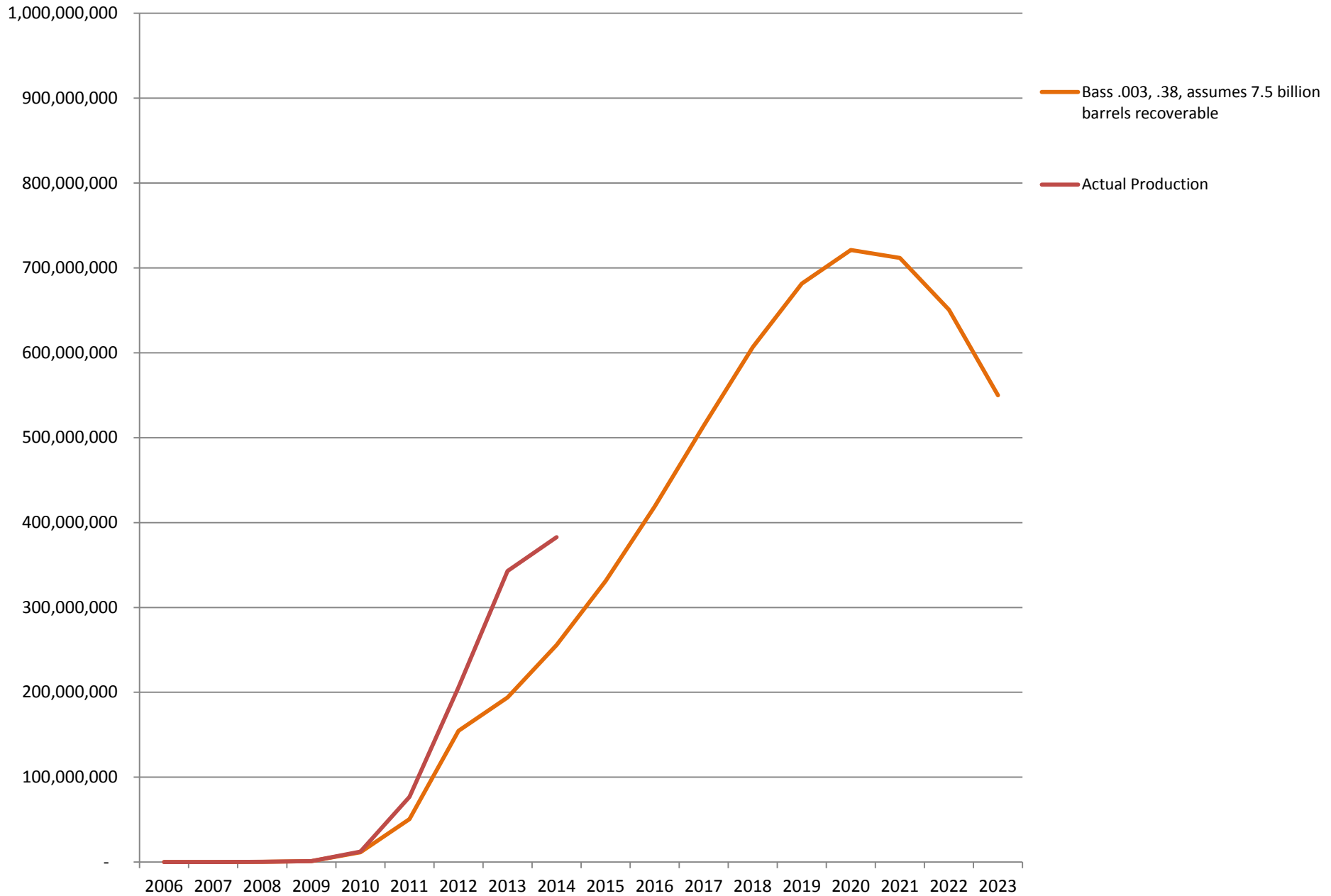
# Updated Eagle Ford Shale Oil/Condensate Annual Production Forecast (bbls) Scenarios



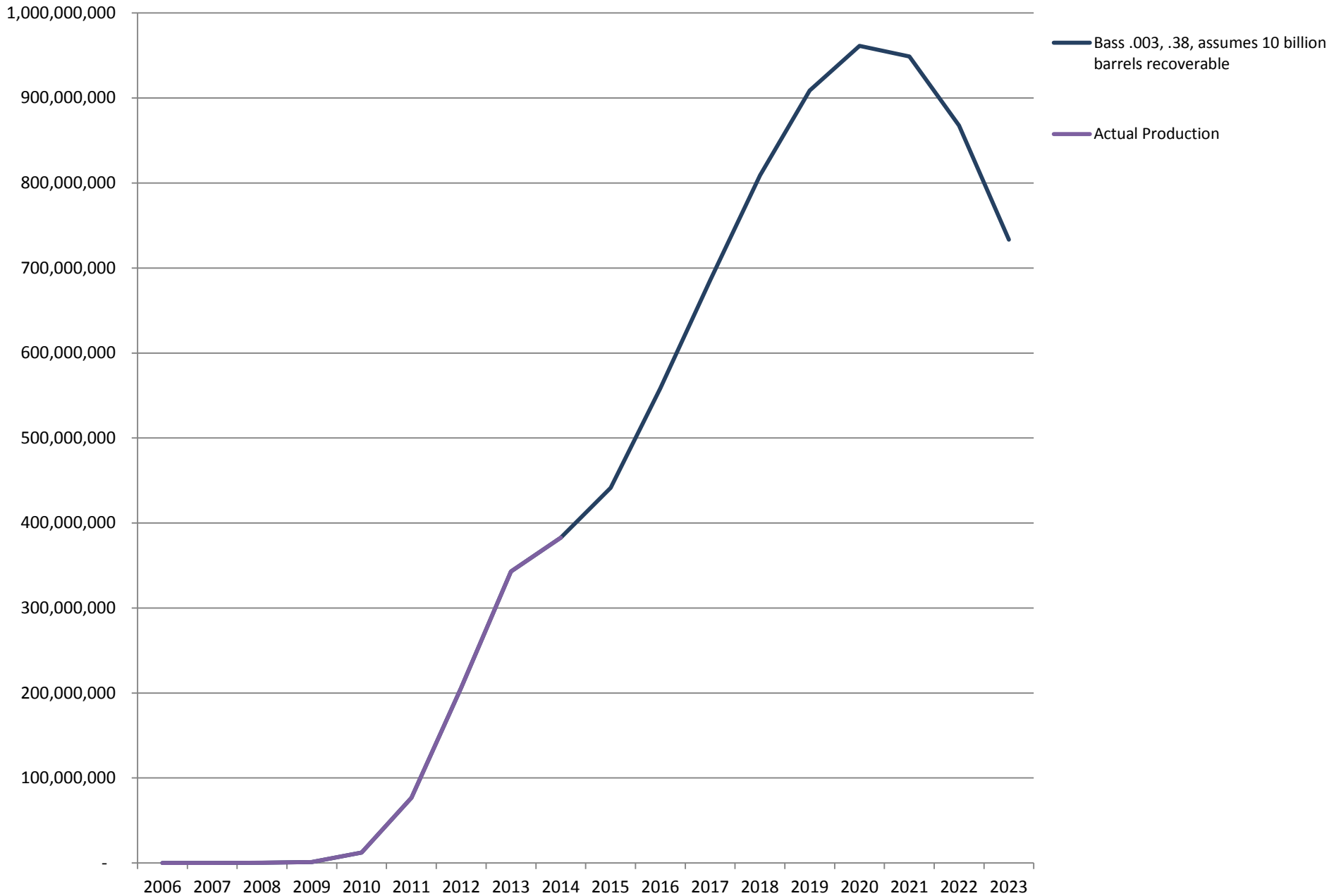
# Eagle Ford Oil and Gas Production (2012)



# Eagle Ford Oil and Gas Production (2013)

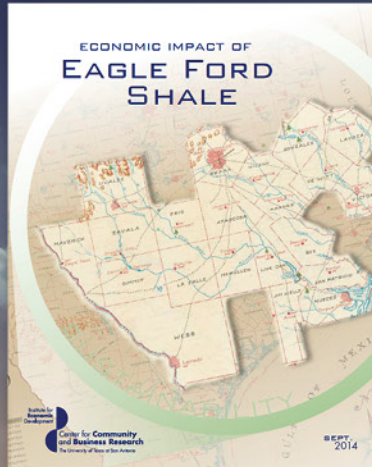


# Eagle Ford Oil and Gas Production (2014)





# Medium-Long Term Strategies for Success



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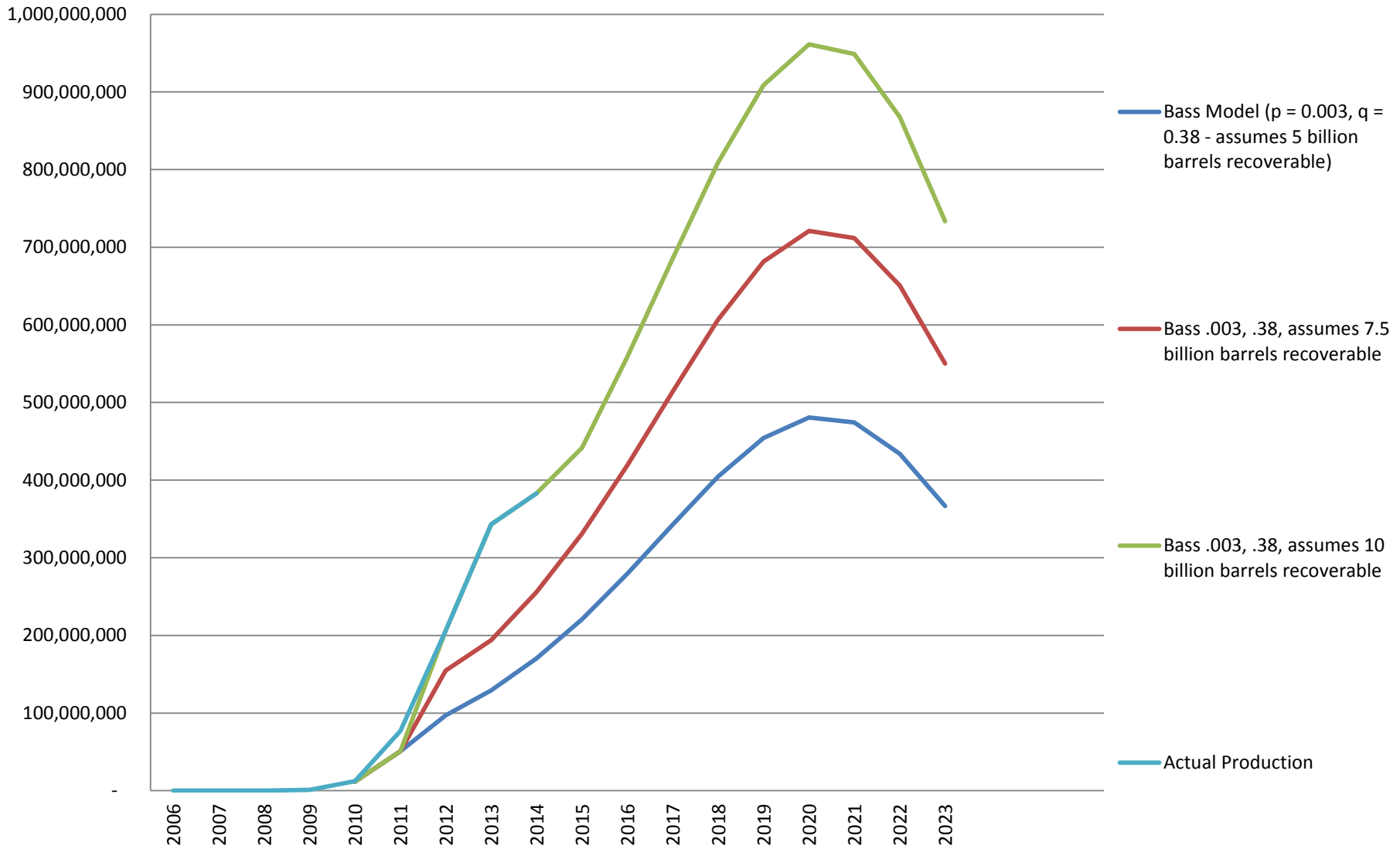
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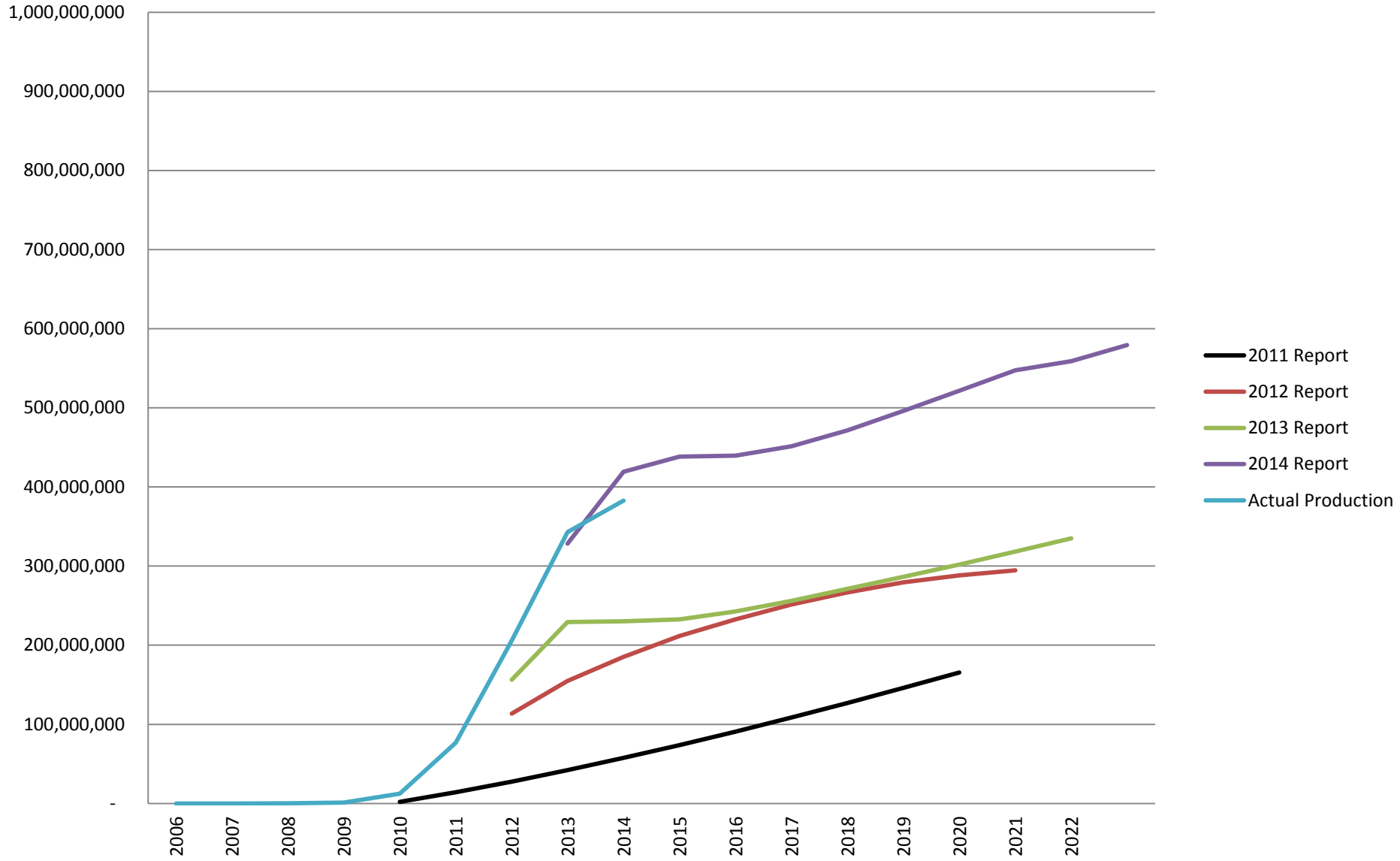
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- Look for **Opportunities to Diversify** the Local Economy (**Destination Locations**)
- **Rediscover Your Community's History** and Architecture as a Tool for Economic Development (**Why was the City Founded in the First Place?**)
- Seize the Opportunity to Implement **Form-Based Zoning That Emphasizes Mixed-Use**, Flexibility, Livability and Sustainability
- **Forge Linkages, Alliances** and Engage Other EFS Communities, Higher Education Institutions
- Identify **Best Practices** from Other Shale Plays
- **Work with Elected Representatives** at the Municipal, County, State and National Levels on Infrastructure Planning

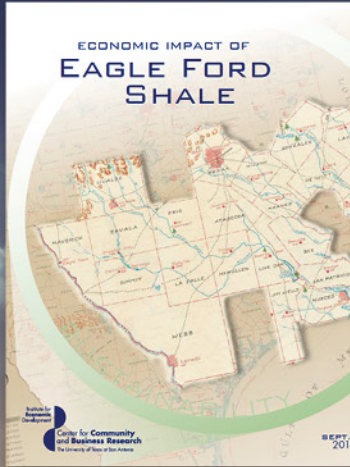
### Bass Model - 3 Scenarios



# Time-Series Iterations



# Selected Central Texas Counties (1890)



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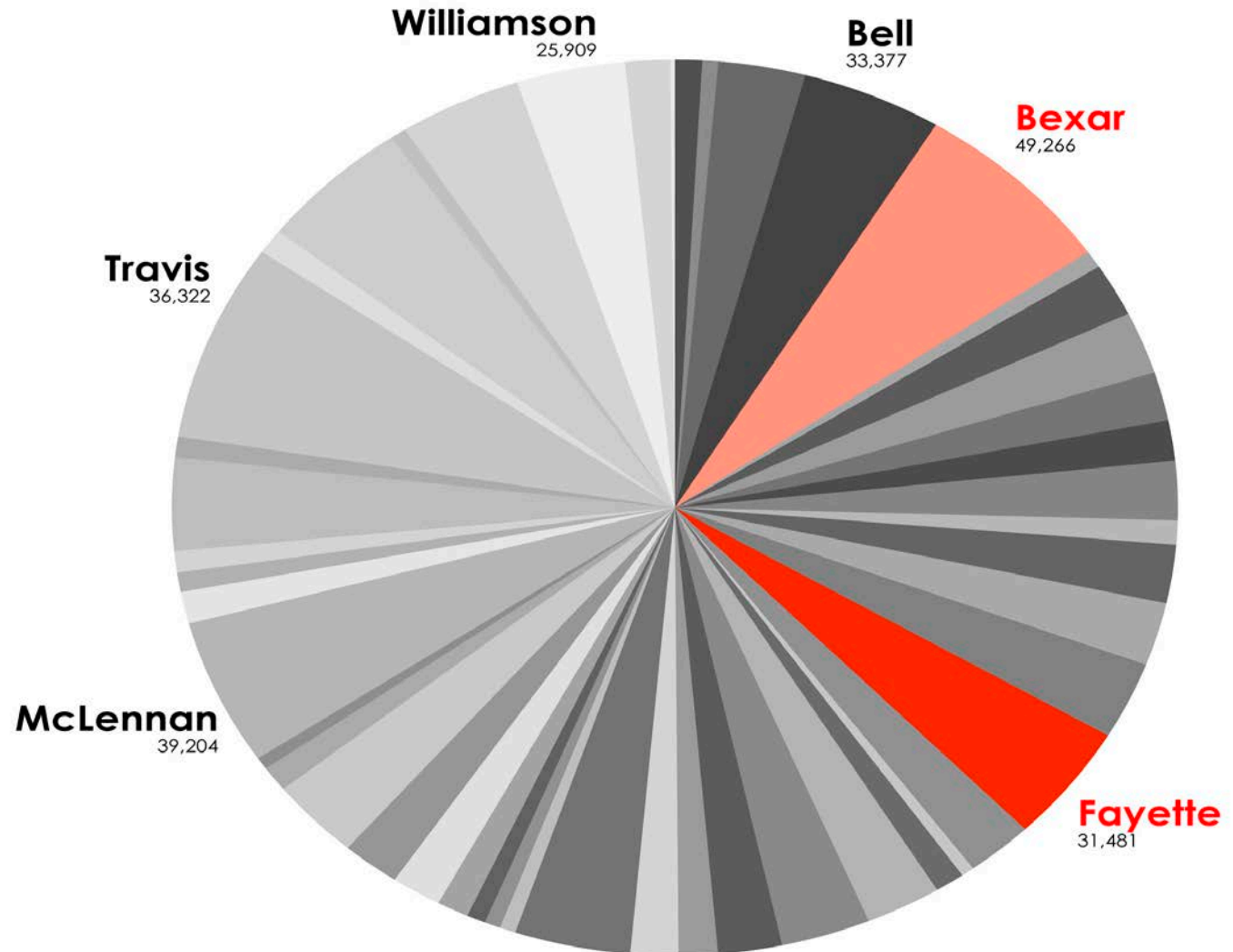
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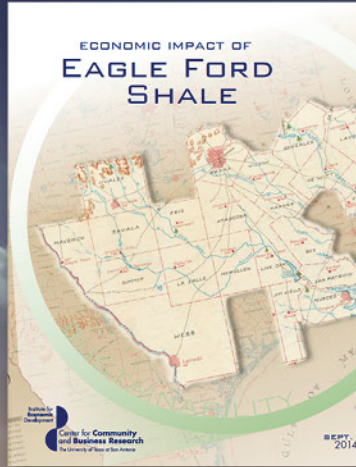
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# Selected Central Texas Counties (2010)



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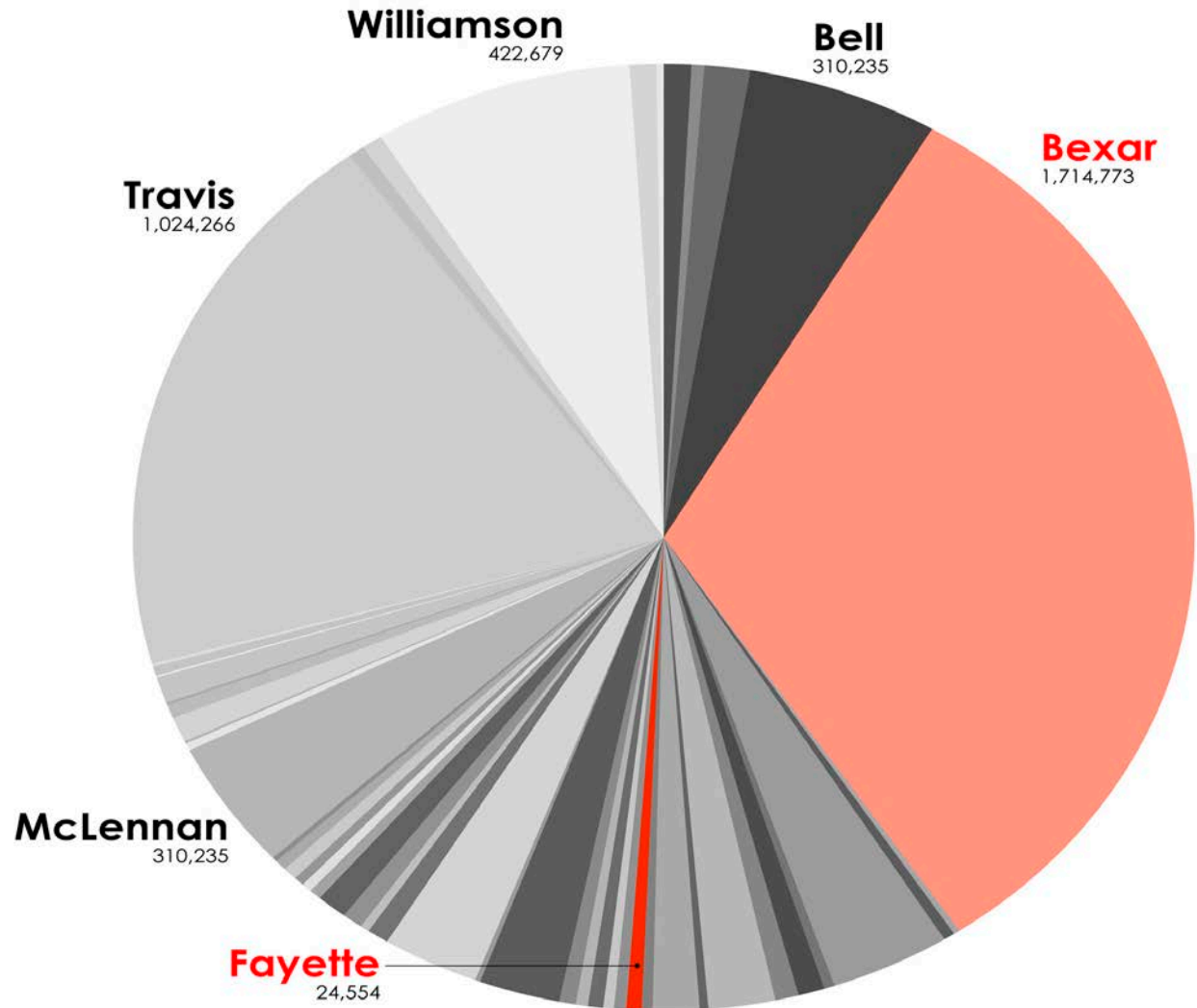
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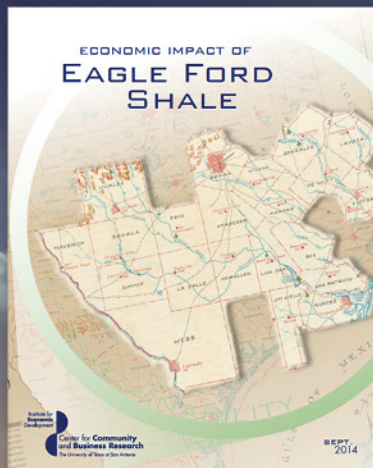
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# Critical Immediate Needs: Improved Local Governance and Capacity



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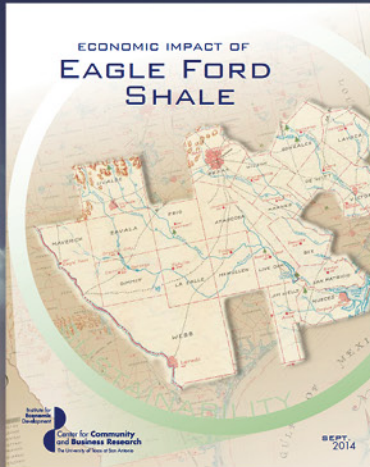
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- **Medium and Long-Term Planning, Particularly Land-Use and Capital Outlays**
- **Revenue and Investment Strategies: Dedicating Funds for Public Use Early (see Public Amenities , Quality of Life)**
  - 2% Sales Tax Collection Allowed by State Law
  - \$0.15 per \$100 Property Tax for County Road /Bridge Account (est. 1883)
  - \$0.30 per \$100 Property Tax for FM Flood Control (est. 1931)
  - Systematic Allocation of Severance Tax Revenue to Impacted Counties
  - Use of Tax Increment Reinvestment Zones Enables Cities/Counties to Increase Property Values Not To Be Used in Ad Valorem Calculation
  - Debt Service Does Not Count Against Ad Valorem
- **Community Involvement and Engaged Citizens**
- **Strong Institutional Management and Fiscal Discipline**
- **Development of a Skilled Workforce**

# Looking Beyond Eagle Ford:

## Examples of Sustainable Infrastructure

(Key to Attracting New Residents, Visitors and Industry)



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- **Better Roadways**
- **Improved Medical Facilities**
- **Broadband Networks**
- **More Housing Options**
- **Adequate Water and Power Supply, Improved Waste Management**
- **Better Quality K-12 and Vocational Education**
- **Improved Aesthetics, Elimination of Blight, Land Recycling**  
(Bulldozing Derelict Houses, Cleaning Up Junkyards; Renovation and/or Repurposing of Historical Buildings)
- **Branding: Identity, Gateways**
- **Livability: Public Amenities that Improve the Desirability of the Community and Quality of Life** (Lakes, Parks, Hike/Bike Trails, Walkable Neighborhoods)

**Why would someone want to live in or visit your community?**



**CITY OF GONZALES**



**COME AND TAKE IT**



**GONZALEZ**



*The* **ALCALDE HOTEL & GRILL**









PLEASANTON







COTULLA



Chuck's Bar and Dancehall - Cotulla, TX



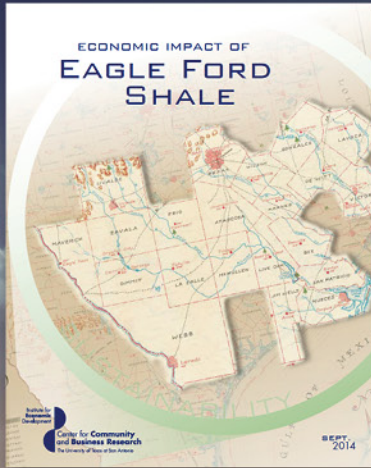


Conservation Fund

Photo credit - Tom Ulrich Pro-Tour 2008



# Quality of Life Components



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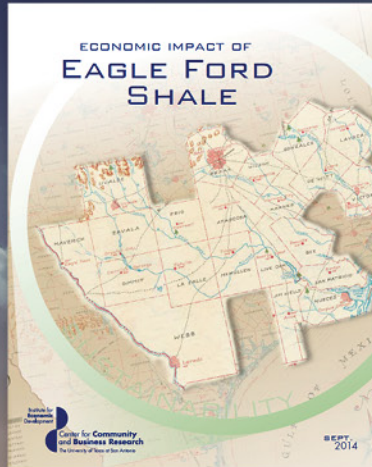
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- Social relationships and culture
- Public safety and crime rates
- Independence and personal autonomy
- Healthcare services
- Water and air quality
- Solid waste and wastewater treatment
- Electricity
- Telecommunication infrastructure
- Employment opportunities
- Housing options
- Schools and education
- Banking services
- Ease of travel
- Animal and destructive insect control
- Public transport
- Variety of restaurants
- Cultural events
- Sports and leisure activities
- Retail variety
- Religious options
- Climate
- Recreation
- Aesthetics
- Physical activity

# Public Amenity Menu

(Ongoing Maintenance Will Be Required)



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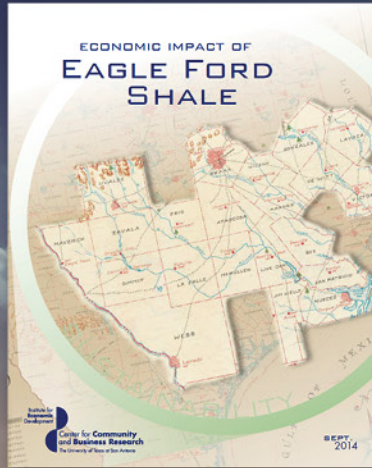
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- **Information Centers**
- **Museums**
- **Activity Centers**
- **Recreational Facilities**
- **Town Halls**
- **Open Spaces / Greenscapes**
- **Church Yards**
- **Public Playgrounds (including adult)**
- **Sport Field and Facilities**
- **Libraries**
- **Public Rights-of-Way / Footpaths**
- **Nature Reserves / State Parks**
- **Public Parks**
- **Country Parks**
- **Fountains / Reflecting Pools**
- **Cafes / Sitting Areas**
- **Town Squares**
- **Fishing Areas**
- **Mowing and Landscaping**
- **Flowers and Trees**
- **Litter Removal**
- **Bike Paths**
- **Lakes / Waterfronts**
- **Wide Sidewalks**
- **Outdoor Gathering Places**
- **Scenic Views**
- **Public Open Spaces**
- **Escalators**
- **Public Bathrooms**
- **Colleges and Universities**
- **Hospitals / Clinics**
- **Public Velodromes / Skate Parks**
- **Bridle Ways / Stables**
- **Community Centers**
- **Amphitheatres**
- **Dance Halls**



# Sample of Eagle Ford Projects Under Consideration



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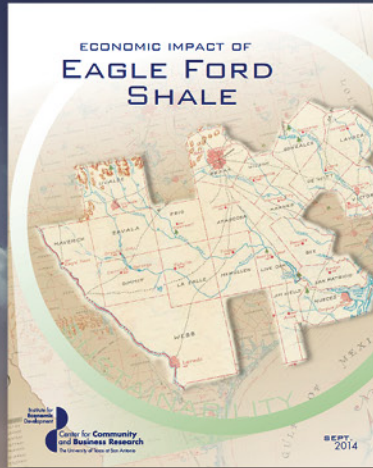
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- Street Assessment Study
- Retail Analysis Study
- Main Street Program
- Website Promotion
- Airport Study
- Development Packets
- Downtown Beautification and Tourism
- IT Support
- Park and Open Spaces by Creek
- Develop a Regional Landfill
- Address Vacant Buildings, Downtown
- Infrastructure Improvements
- Land Development and Strategic Plans
- Strategic Plan, Succession Plan
- Turkey Creek Reservoir
- Purchase Street Sweeper
- Intellectual Capacity, Roles



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# The Future Ain't What It Used To Be

- Yogi Berra



# A TEXAN'S MAP OF THE UNITED STATES



Up Over Yonder Somewheres

Heaven

the OASIS

Snowbird Fly Zone

Damn Yankees

East Texas

Gulf of Texas

Good Fishin' (sorta deep though)



**Only Texas could turn defeat into a legend ... and a song,  
and a tourist attraction, and a major motion picture.**

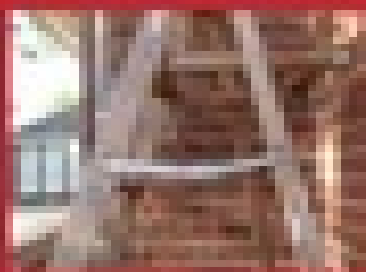




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TEXAS IS THE  
FINEST PORTION  
OF THE GLOBE  
THAT HAS EVER  
BLESSED MY VISION.

SAM HOUSTON 1833



# TEXAS

**"THERE ARE ONLY TWO  
STATES IN AMERICA: TEXAS  
AND NOT TEXAS."**





# Thank you!

## Eagle Ford Expansions: The Latest Developments on the Play

November 2014

Principal Investigator: Thomas Tunstall, Ph.D.

Lead Investigator: Javier Oyakawa, M.A., M.Sc.

Researchers:

Gina Conti, Maricela Diaz-Wells, Jason Hernandez, Yongsun Lee, Vincent Loeffelholz, Neeraj Ravi, John Rodriguez, Feihua Teng, Carelli Torres, Binbin Wang, John Zhang

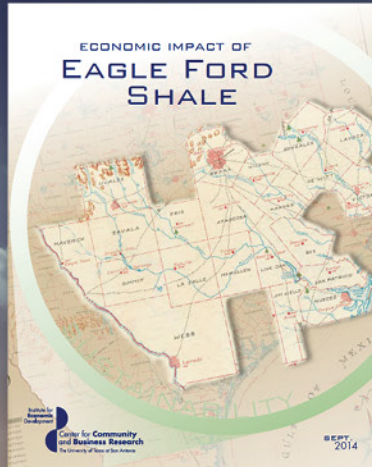
GIS Specialist: Hisham Eid

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