



# California's Transportation Fuels Outlook

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## Presentation Topics

- Background
- California gasoline price volatility
- Regional transportation fuel market
- 2007 price increases
- Linkage to financial markets
- Market factors contributing to the price spike
- Proactive actions to limit additional potential price increases
- Gasoline price outlook
- Ethanol availability
- Summary

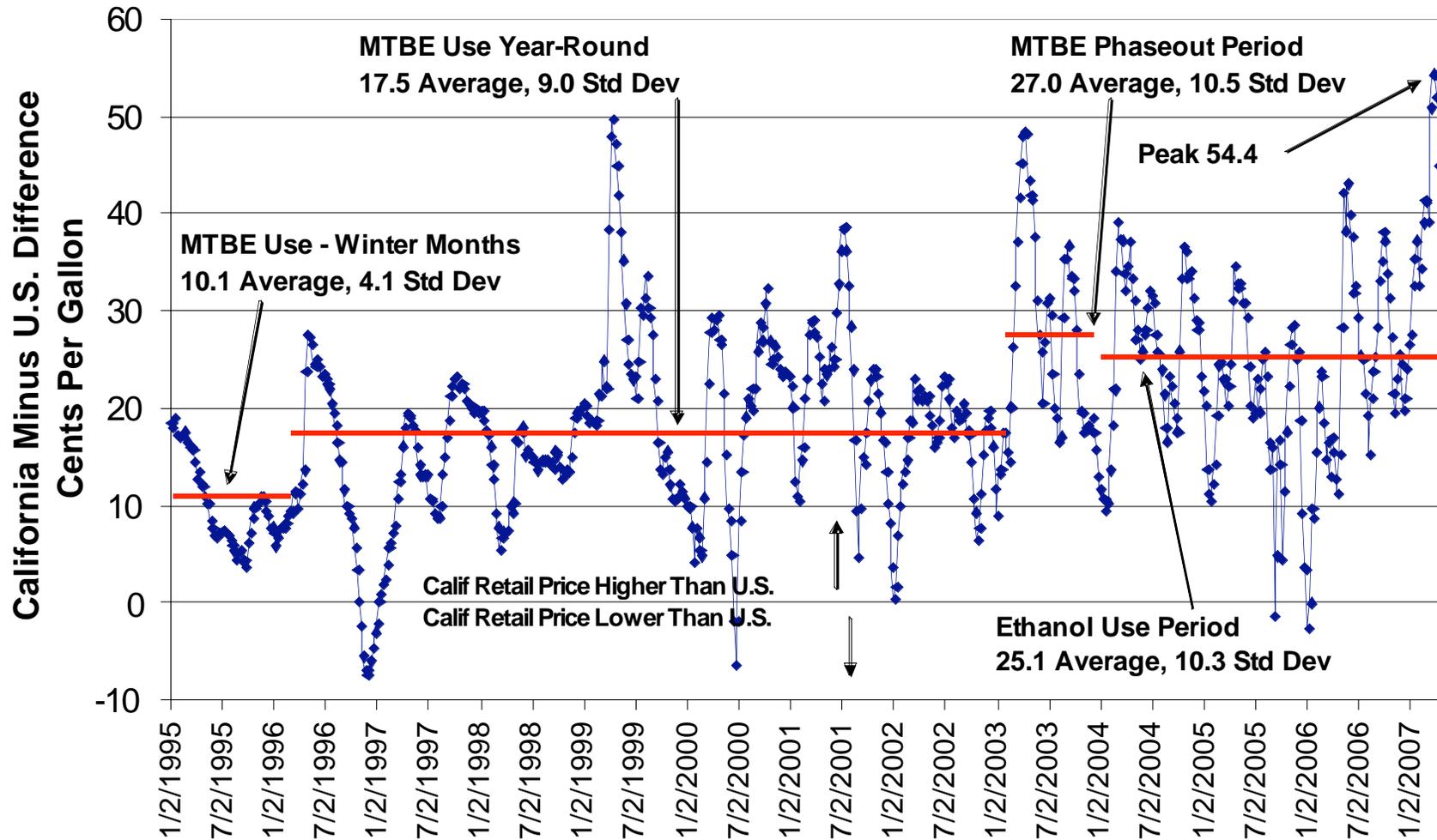


## Background

- California's transportation fuel market is isolated by time and distance from the next alternative source of resupply
- Additional sources of incremental supply are weeks away
  - Identify available barrels
  - Locate a ship
  - Transit time
- As a consequence, unplanned refinery outages and unexpected extension of maintenance can result in wholesale price spikes that are normally greater in magnitude and longer in duration than other regions of the United States



# California Gasoline Volatility January 1995 to April 9, 2007



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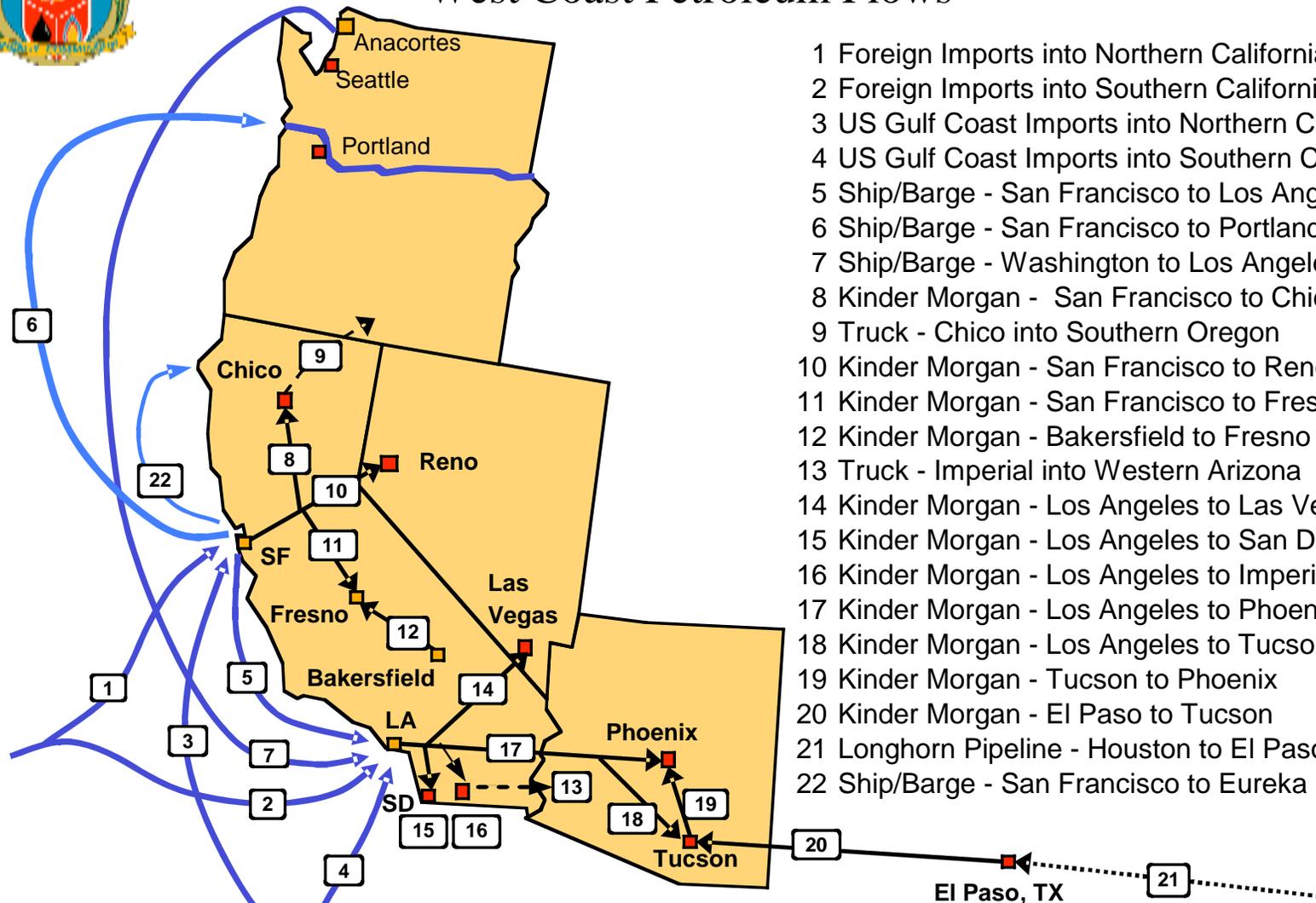


## California Gasoline Price Volatility

- Differential between California and U.S. retail gasoline prices has averaged 19.6 cents per gallon (cpg) since January 1995
- Differential has been growing over time
  - 10.1 cpg winter oxy season 1995-1996
  - 17.5 cpg year round use of MTBE 1996-2002
  - 27.0 cpg partial transition to ethanol 2003
  - 25.1 cpg year round use of ethanol 2004 to present
- Volatility has been increasing



## West Coast Petroleum Flows



- 1 Foreign Imports into Northern California
- 2 Foreign Imports into Southern California
- 3 US Gulf Coast Imports into Northern California
- 4 US Gulf Coast Imports into Southern California
- 5 Ship/Barge - San Francisco to Los Angeles
- 6 Ship/Barge - San Francisco to Portland
- 7 Ship/Barge - Washington to Los Angeles
- 8 Kinder Morgan - San Francisco to Chico
- 9 Truck - Chico into Southern Oregon
- 10 Kinder Morgan - San Francisco to Reno
- 11 Kinder Morgan - San Francisco to Fresno
- 12 Kinder Morgan - Bakersfield to Fresno
- 13 Truck - Imperial into Western Arizona
- 14 Kinder Morgan - Los Angeles to Las Vegas
- 15 Kinder Morgan - Los Angeles to San Diego
- 16 Kinder Morgan - Los Angeles to Imperial
- 17 Kinder Morgan - Los Angeles to Phoenix
- 18 Kinder Morgan - Los Angeles to Tucson
- 19 Kinder Morgan - Tucson to Phoenix
- 20 Kinder Morgan - El Paso to Tucson
- 21 Longhorn Pipeline - Houston to El Paso
- 22 Ship/Barge - San Francisco to Eureka

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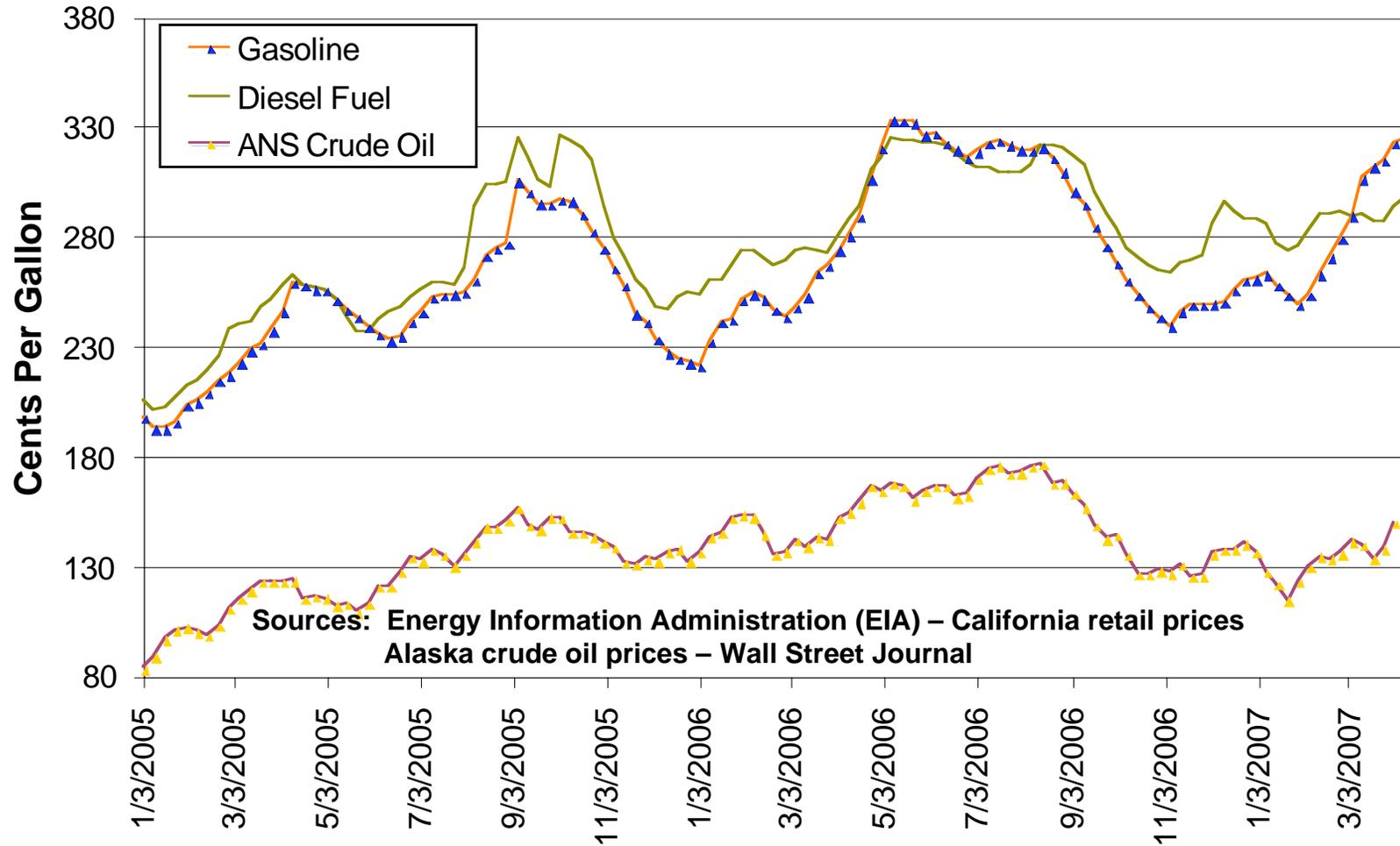


## Regional Transportation Fuel Market

- California is primary source of supply to neighboring states
  - Nearly 100 % to Nevada
  - About 60 % to Arizona
- Washington is also a source of supply for California
- Unplanned refinery outages or pipeline distribution problems can have a regional price impact due to the interconnected relationship of this regional market



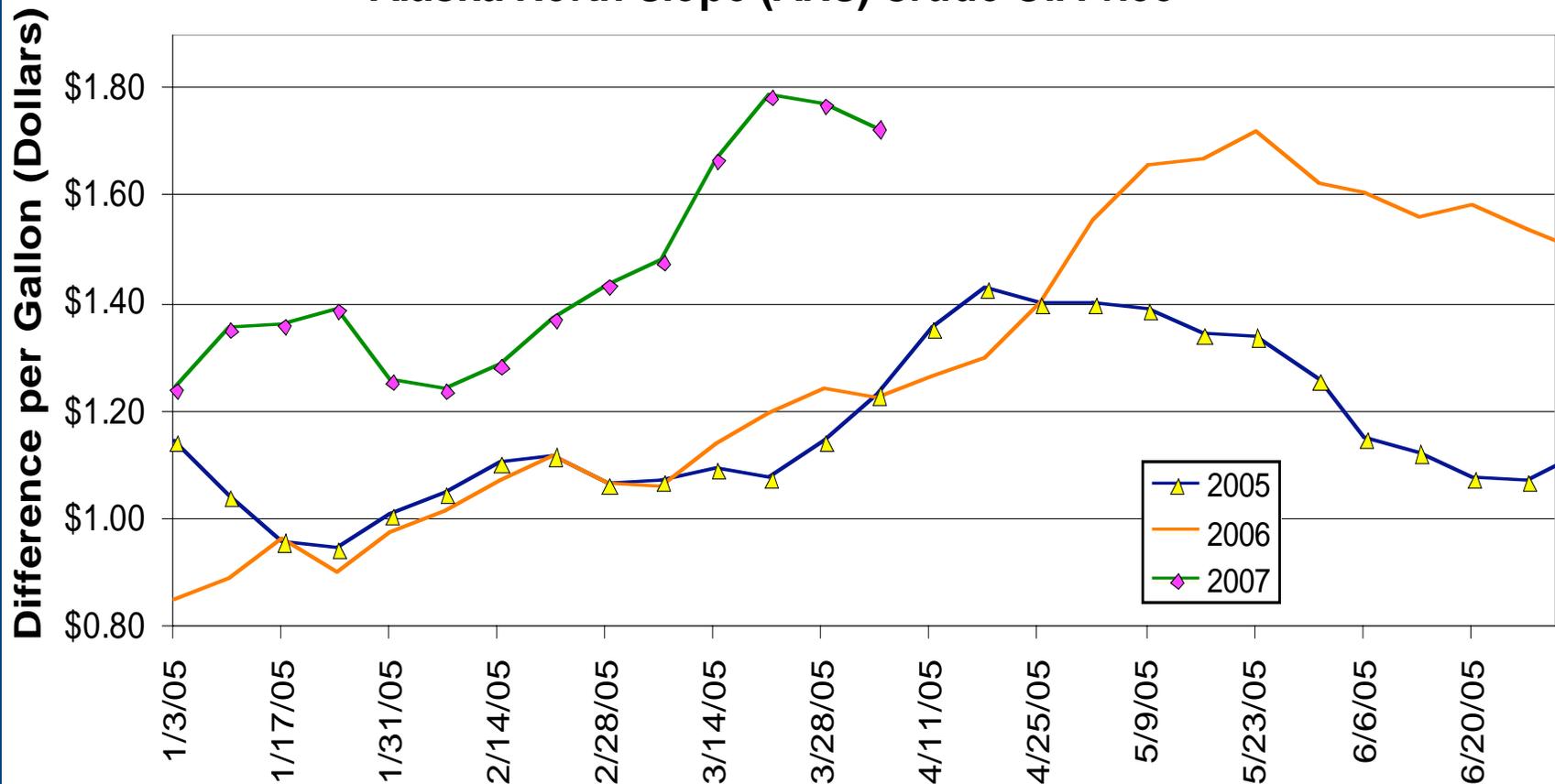
## California Retail Prices - Gasoline and Diesel Fuel versus Alaska North Slope (ANS) Crude Oil January 2005 through April 9, 2007



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## 2005, 2006, and 2007 Average Weekly Retail Gasoline Price Minus Weekly Alaska North Slope (ANS) Crude Oil Price



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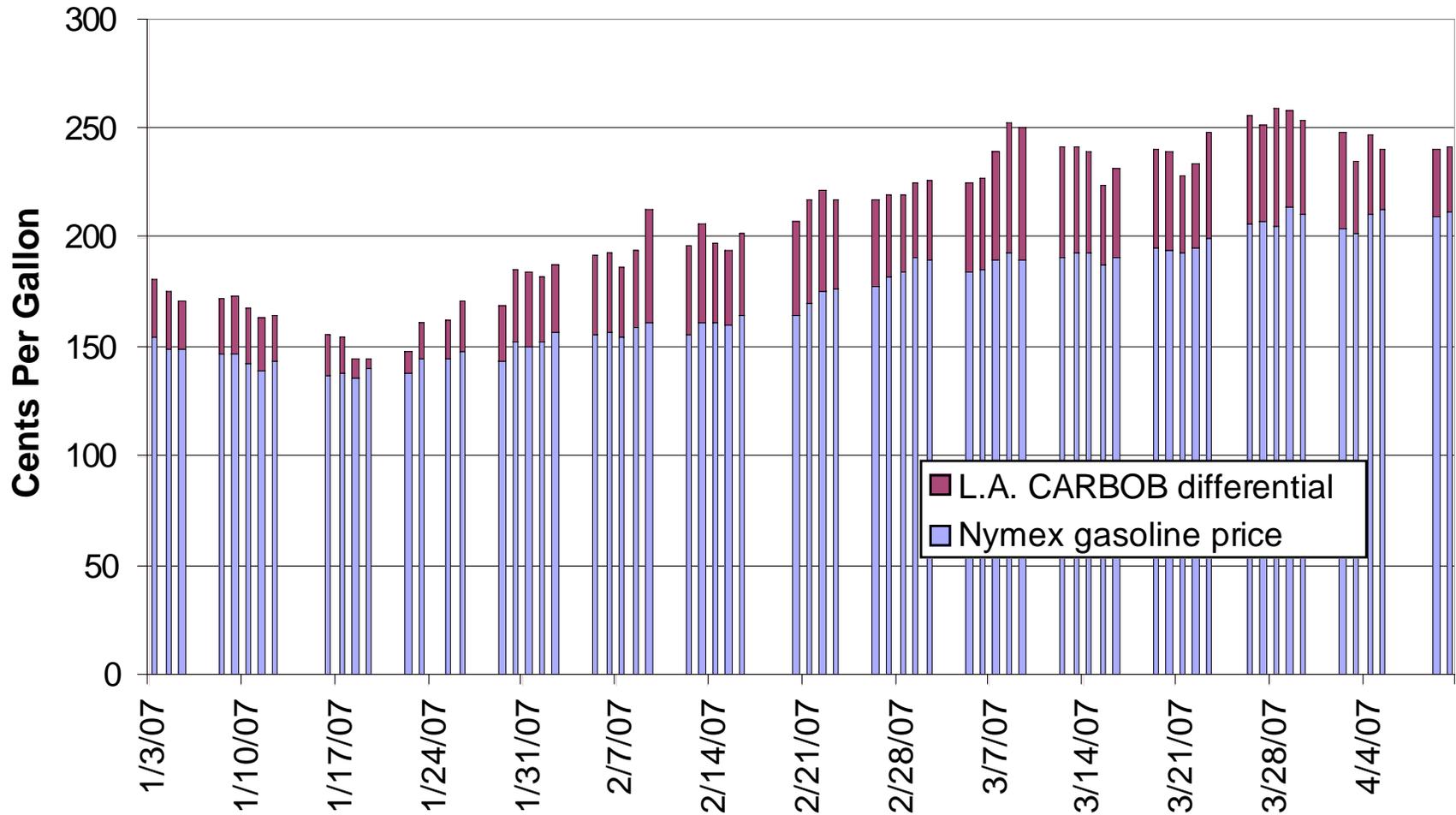


## 2007 Price Increases

- California retail gasoline prices increased 51 cents per gallon (cpg) between January 3 and March 21, 2007
- Crude oil prices actually *decreased* by 3 cpg over this same time period
- Retail prices, less crude oil, have increased 54 cpg over the same time period, a 44 % increase
- Wholesale prices have experienced similar increases driven by rising NYMEX values and higher premiums for pipeline barrels



## Nymex Price and CARBOB Differential January 3 - April 10, 2007



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## Linkage to Financial Markets

- Wholesale prices for purchases of large quantities, referred to as spot pipeline transactions, increased by 78 cents per gallon (cpg) between January 3 and March 28, 2007
- Represents a 43 % increase
- Refiners and other market participants will turn to pipeline transactions to obtain additional supplies of gasoline following unplanned outages or unanticipated extensions of routine maintenance
- These spot pipeline purchases are quoted as a differential to a benchmark, the month ahead gasoline contract on the New York Mercantile Exchange (NYMEX)



## Linkage to Financial Markets

- One of the consequences of this pricing mechanism is that factors external to the California petroleum market - such as geopolitical instability or a severe hurricane in the U.S. Gulf Coast – can increase the value of NYMEX gasoline contracts
- This in turn can increase Calif. wholesale gasoline prices
- Local supply imbalances can also tighten gasoline supplies in the region and are reflected in the form of higher differentials that are paid by market participants for spot pipeline transactions
- These differentials went from a low of 4.5 cpg on January 19 to a high of 60 cpg on March 8, 2007 – an indication of scarcer gasoline supplies

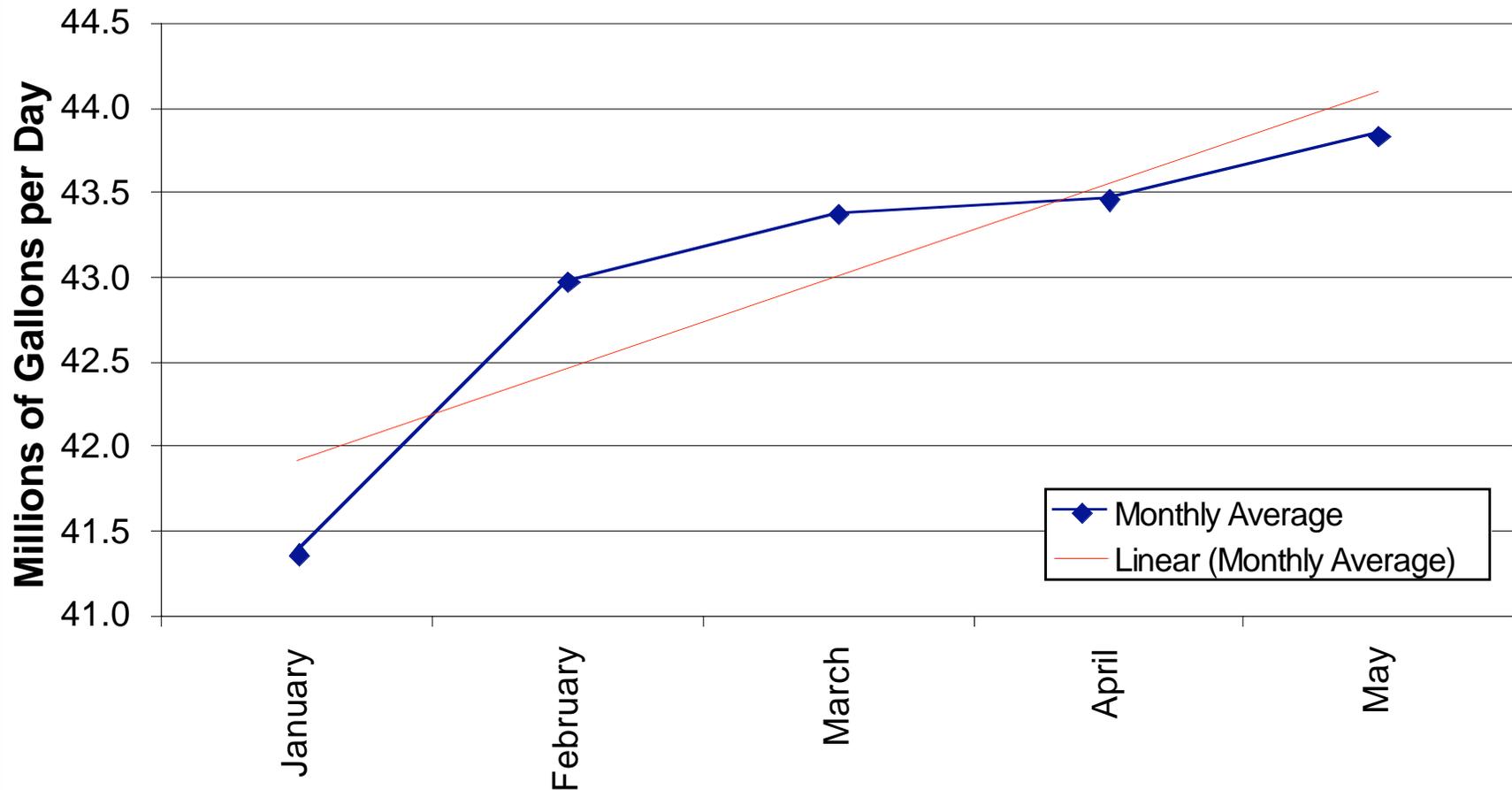


## Market Factors that Contributed to the First Quarter 2007 Price Spike

- Seasonal demand growth
- Unplanned refinery outages and planned maintenance
- Refinery production of gasoline
- Inventory levels for gasoline and blendstocks
- Pipeline exports to Arizona
- Distribution infrastructure constraints



## California Gasoline Monthly Demand Seasonal Increases 2003-2006 Average



Source : Analysis of California State Board of Equalization taxable gasoline sales figures.

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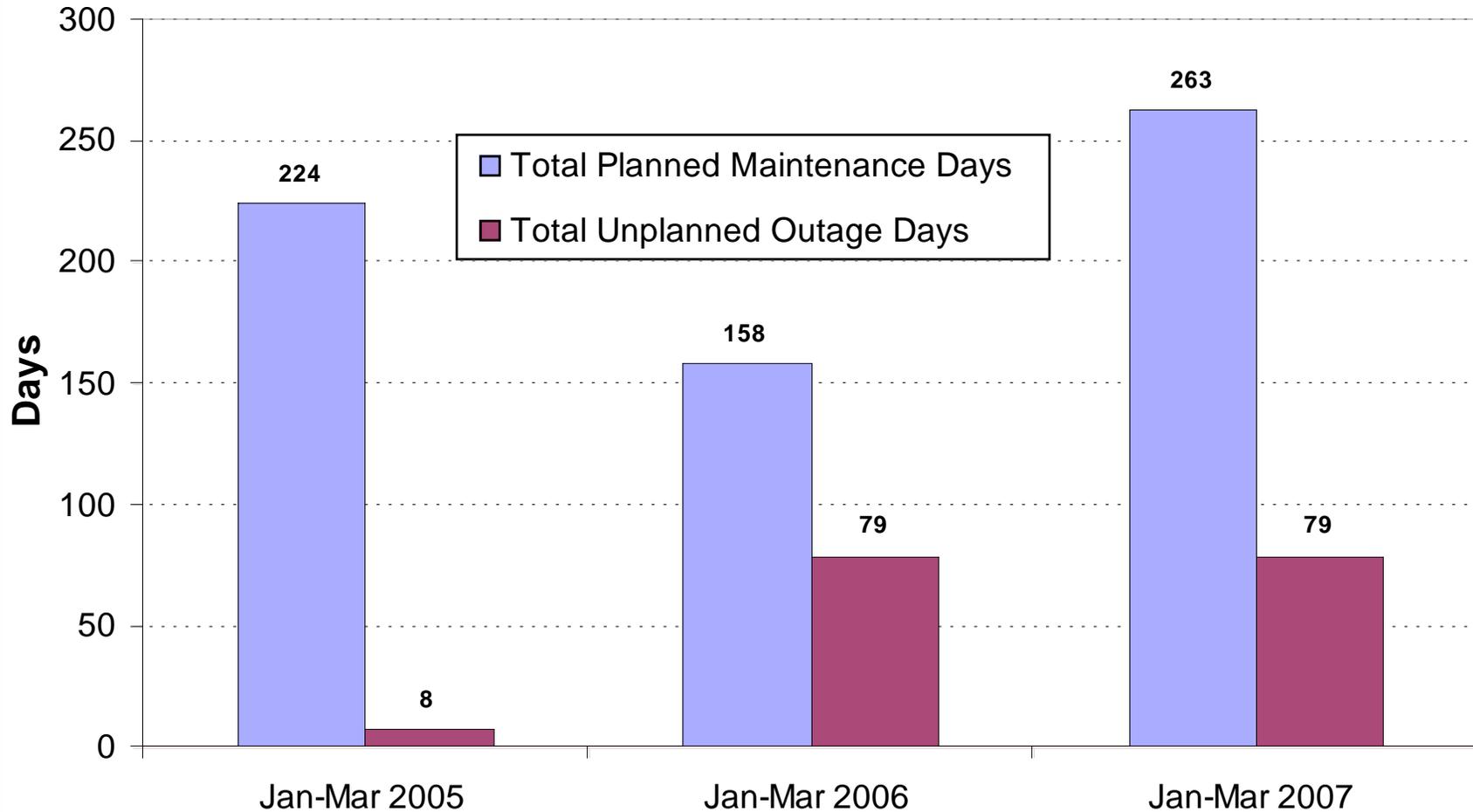


## Seasonal Demand Increases

- California gasoline demand normally increases from winter to the outset of spring
  - Demand jumped an average of 4.8 percent from January to March over the last 4 years
- Over the same time period, gasoline production capability at California refineries declines due to the transition from winter to summer gasoline formulations
  - Lower volatility limit begins in mid-February for Southern California and mid-March for the rest of the state
  - Certain blending components such as butane are temporarily excluded from the gasoline pool



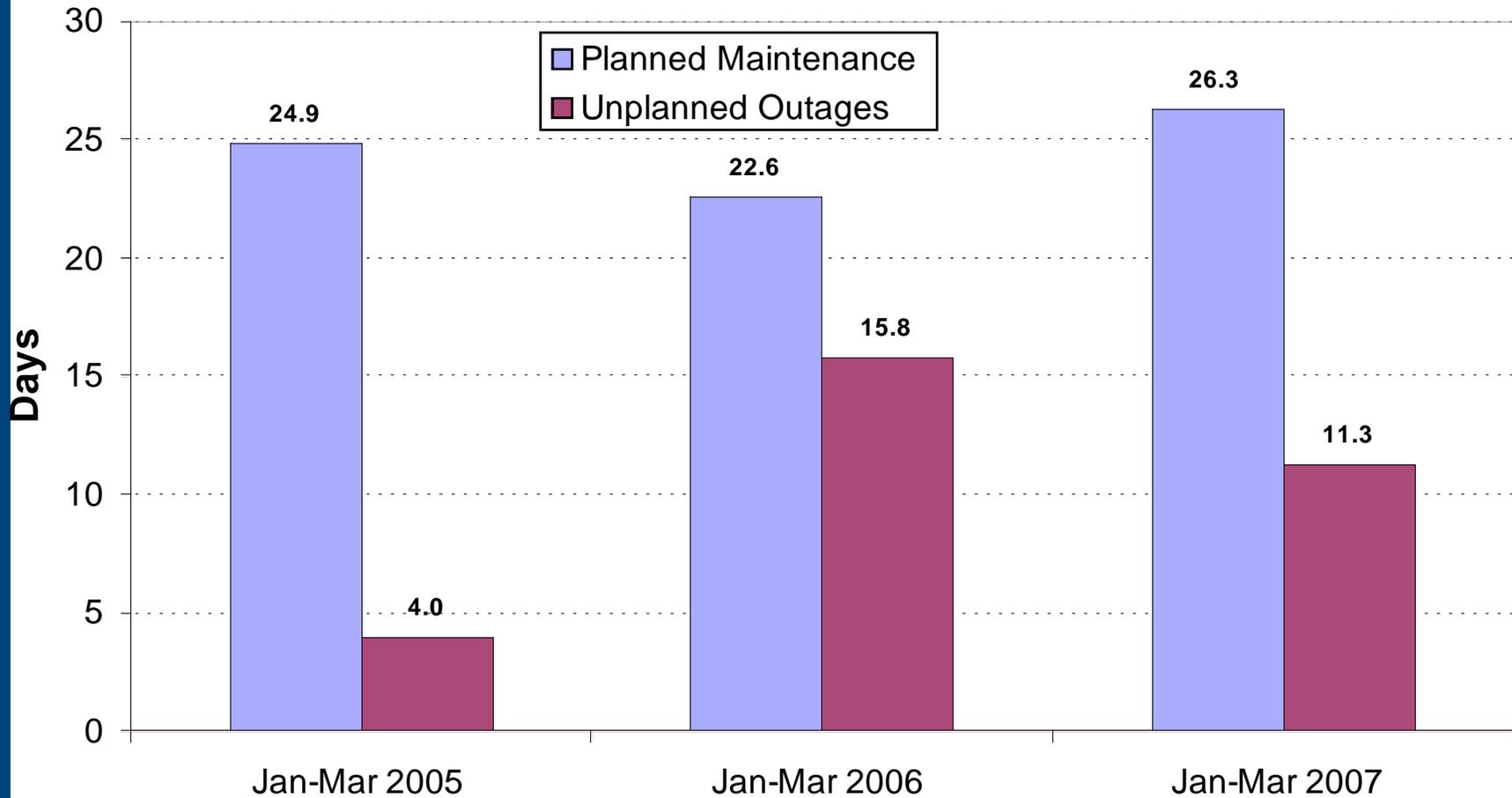
## California Refinery Events - Number of Days (January-March of 2005, 2006, and 2007)



Source: CEC Petroleum Industry Information Reporting Act (PIIRA) database.



## Average Number of Days per Refinery Event (January-March of 2005, 2006, and 2007)



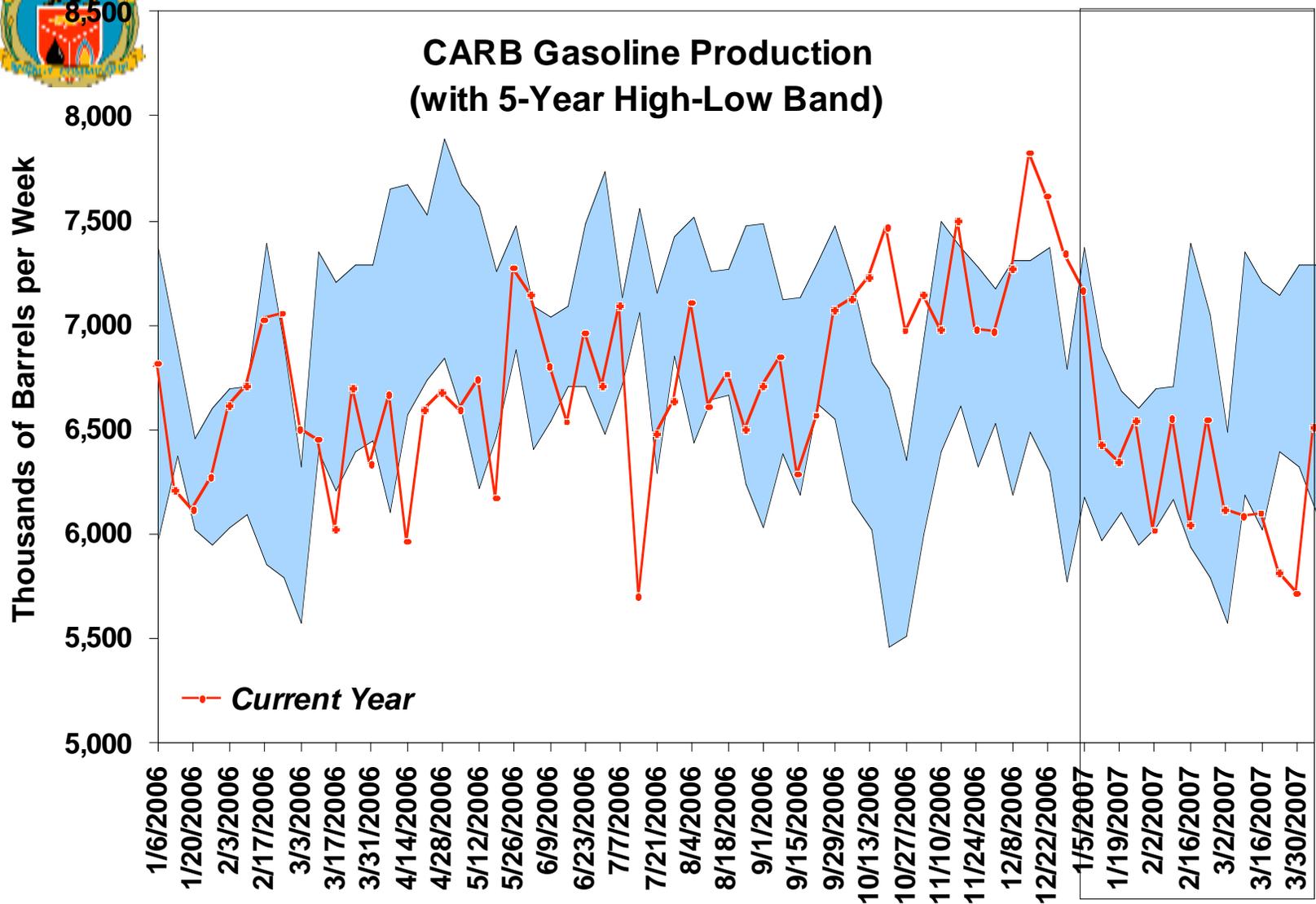
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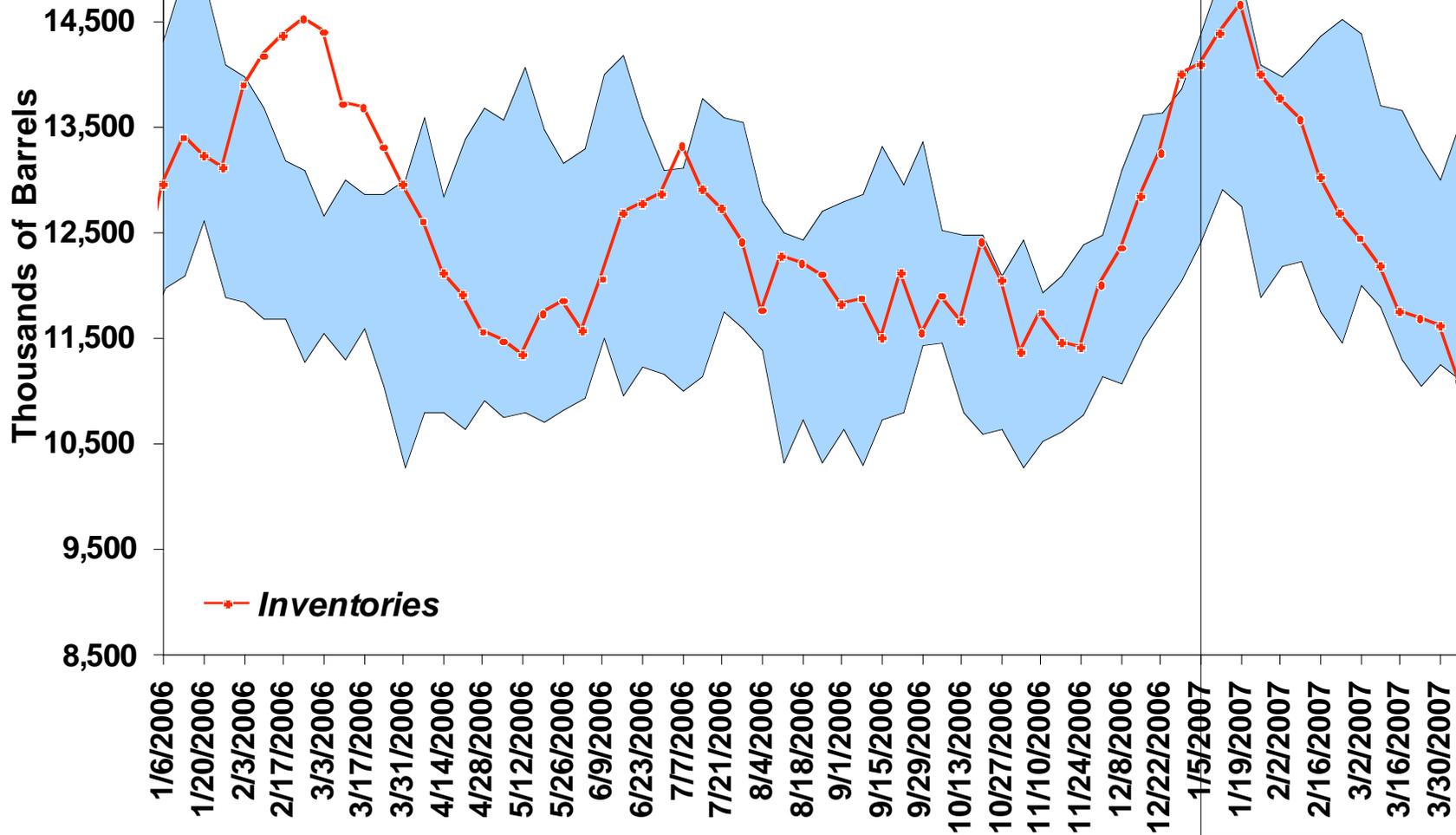
## Refinery Outages & Maintenance

- Planned maintenance at California refineries during the first quarter of 2007 was 66 percent greater (number of maintenance days) than the same period in 2006
- Although refiners usually build inventories of gasoline in advance of such work, supplies are normally adequate to meet contractual obligations, rather than normal levels of refinery output
- Unbranded supplies become constrained and wholesale prices normally rise for the entire petroleum market
- Unplanned outages were similar to 2006, but shorter in average duration per refinery event





### California Gasoline Inventories (with 5-Year High-Low Band)



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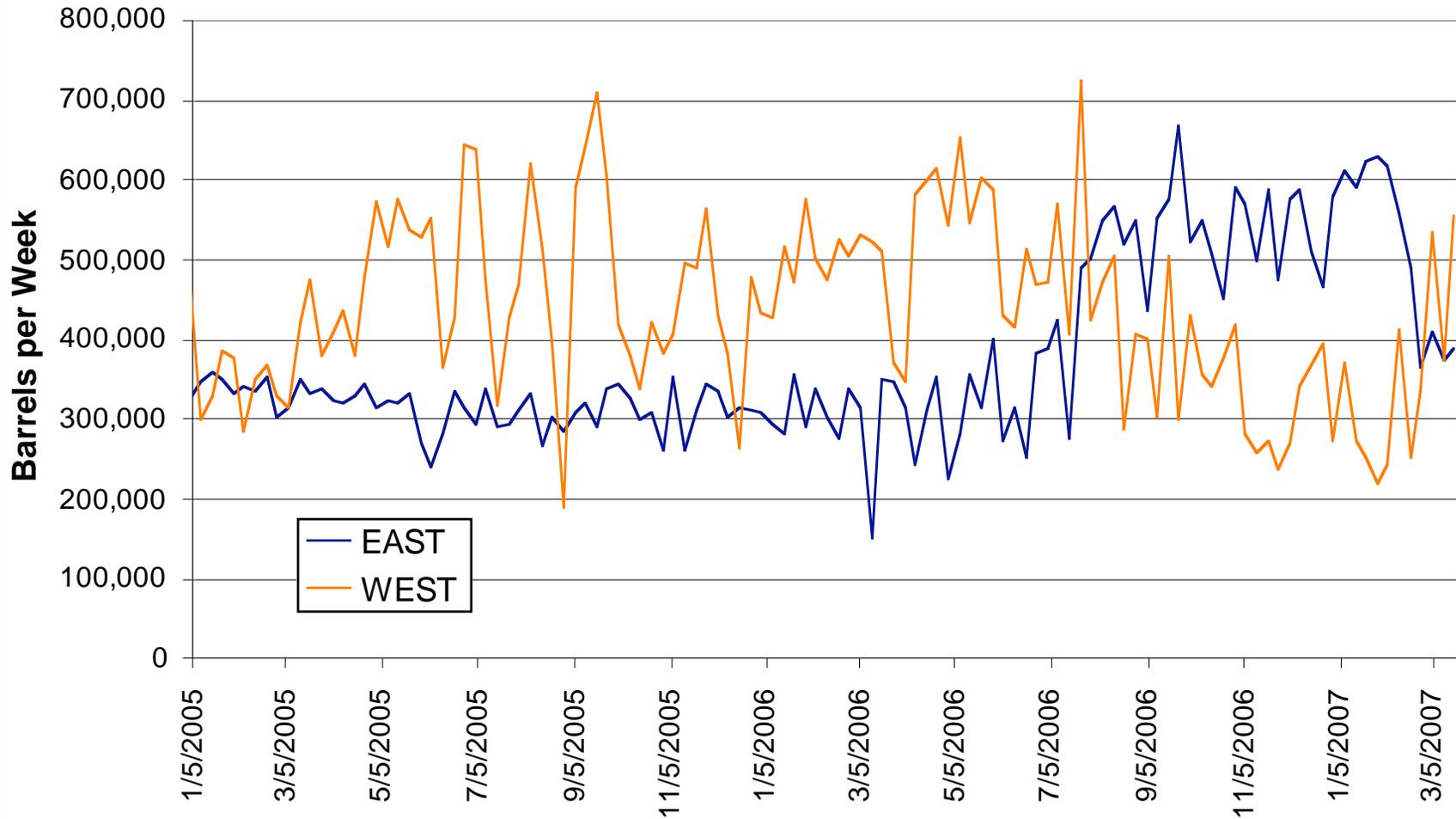


## Refinery Production & Inventory

- California refinery production of gasoline declined by 20 percent from the week ending January 5 through the week ending March 30, 2007 – reaching a severely low level of 816 thousand barrels per day (TBD) by the end of March
- This 200 TBD decline in output came at a time when gasoline demand normally increases by nearly 50 TBD
- As a consequence, inventory levels were drawn down by 3.6 million barrels or 25%
- Declining production and scarcer gasoline inventories normally result in upward pressure on wholesale prices



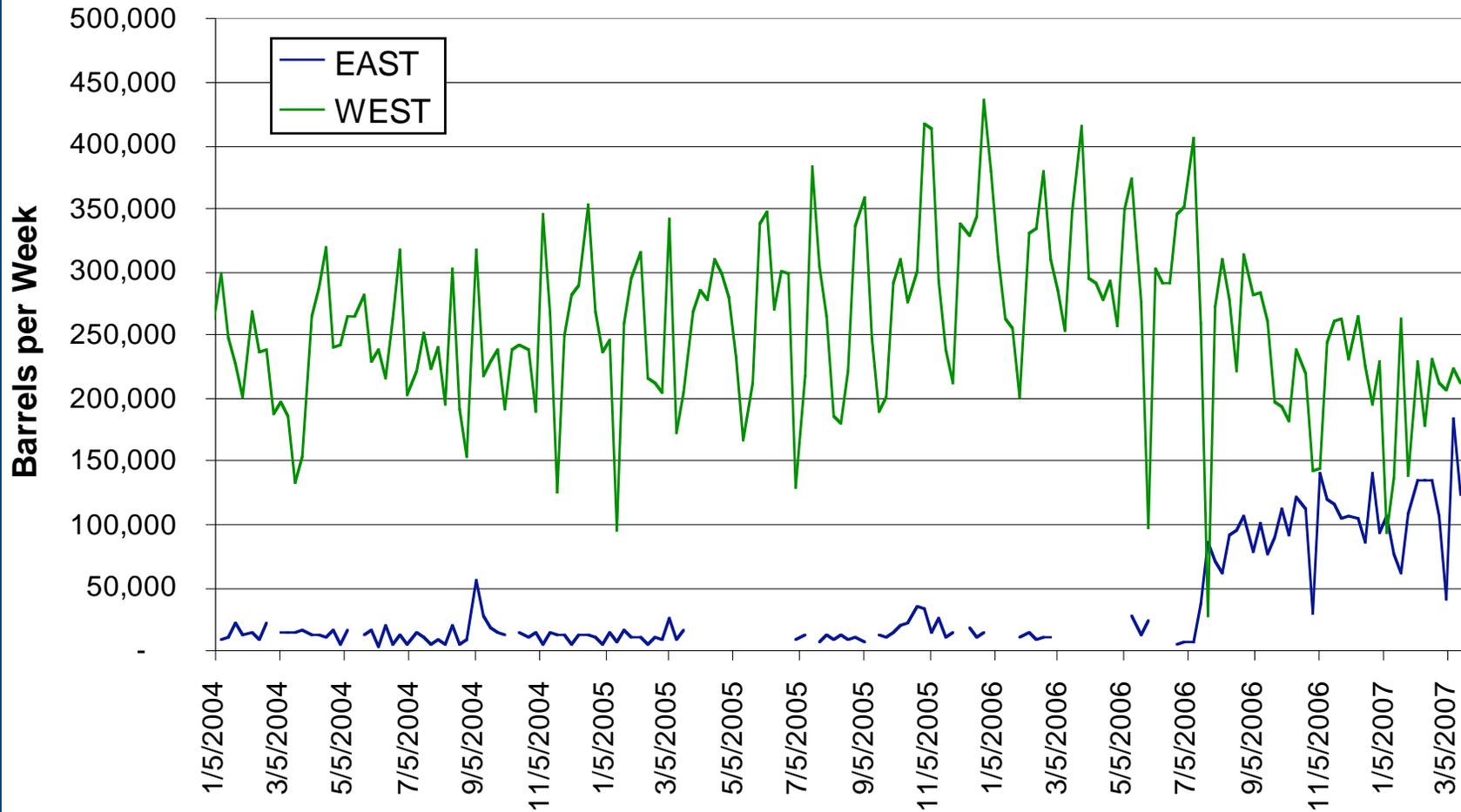
## Gasoline Movements by Pipeline to Phoenix January 2005 - March 2007



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## Diesel Movements by Pipeline to Phoenix January 2005 - March 2007



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## Pipeline Exports Increase

- Propane fire at Valero refinery in McKee, Texas decreases shipments of gasoline and diesel fuel to Arizona
- California exports increase to compensate
  - 22 TBD gasoline
  - Only 5 TBD for diesel
- Blendstocks used to make AZ gasoline are also main ingredients for California reformulated gasoline



**Matt Slocum / AP**

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## Potential Distribution Constraints

- Another potential factor contributing to the recent price spike is pipeline constraints that limit the ability of gasoline and blendstocks in third-party storage from reaching distribution terminals
- Northern California intra-state pipeline segments at capacity have previously been identified as bottlenecks that could temporarily constrain transportation fuel supplies
- An assessment is planned to determine if such constraints may have developed and exacerbated the rapid increase in wholesale prices



## Factors that Contributed to Price Spike

- Refinery operations & impact on Production
  - Gasoline production was lower due to
    - Unplanned refinery outages
    - Heavier-than-normal maintenance
- Gasoline inventories rapidly declined
  - Lowest levels over the last 5 years
- Pipeline exports to neighboring states
  - Increased in response to West Texas refinery fire
- Possible pipeline distribution capacity limitations
  - Assessment to be conducted



## Proactive Steps to Avoid Additional Price Increases

- The California Energy Commission routinely monitors refinery production, distribution operations, and petroleum product price trends to determine whether or not transportation fuel supplies could become temporarily constrained
- This activity includes assessments of upcoming projects or events that may exacerbate an already tight market
- One recent example involved the Energy Commission learning that a discretionary refinery project had preliminarily been rescheduled to mid-April



## Proactive Steps to Avoid Additional Price Increases

- A recent spate of refinery problems, inside and outside of California, in conjunction with a heavier-than-normal first quarter of maintenance raised the possibility of significant impact of gasoline supplies
- In response, the Energy Commission requested that Valero reschedule the date to commence modifications to one of their process units, if such a change were feasible
- After careful consideration, Valero decided to defer the start date to later in the year
- Energy Commission believes that this action eliminated “a large, unnecessary financial hardship to consumers and businesses within our state.”



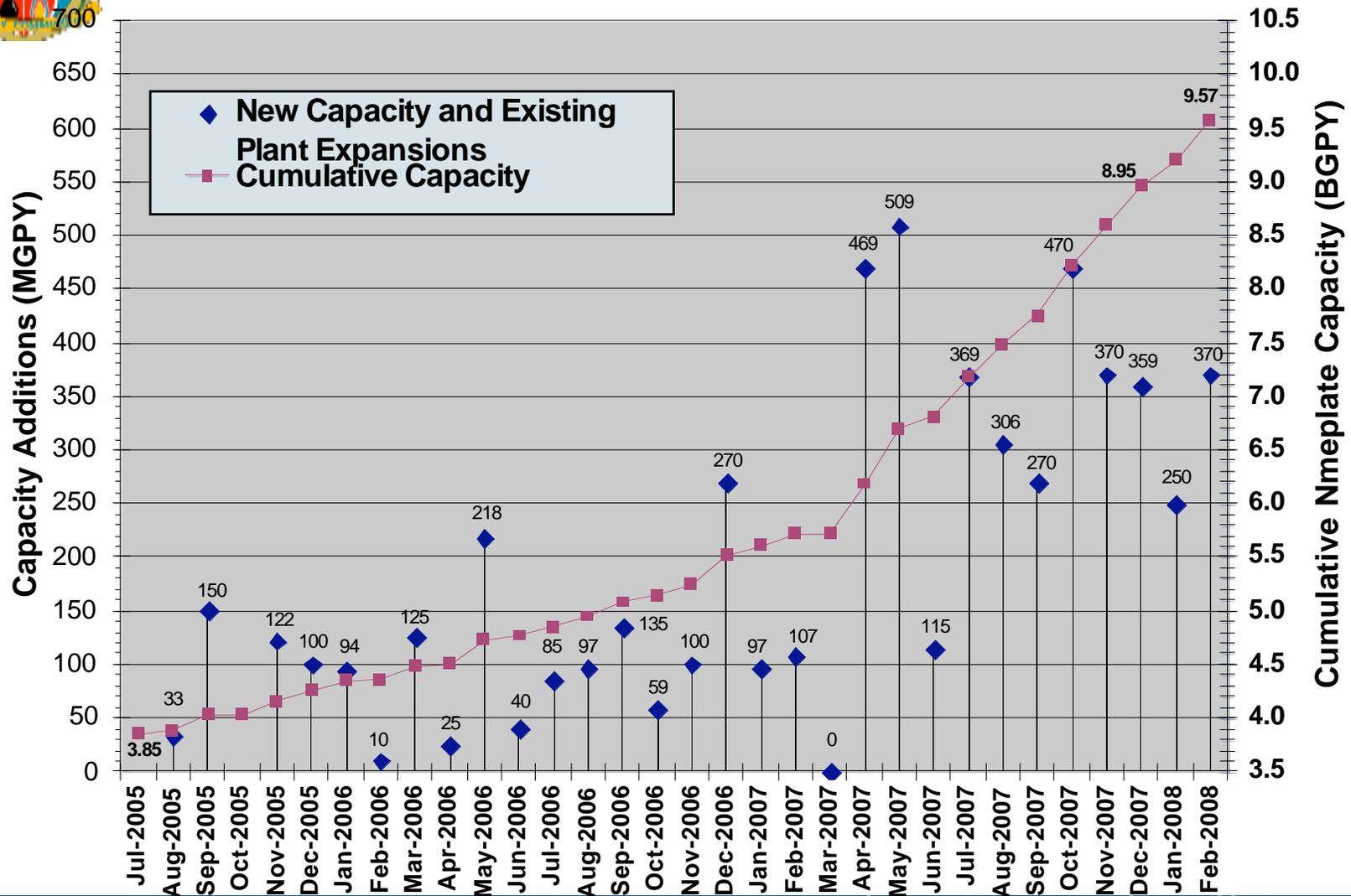
## Price Outlook



- Is \$4 gasoline on the horizon for California consumers?
- Unlikely - as refiners complete repairs and resume normal operations following extended maintenance cycles additional supplies of gasoline should place downward pressure on wholesale prices
- Absent large crude oil price increases, at least two significant refinery outages would be necessary to send retail gasoline prices over the \$4 mark



## U.S. Ethanol Plant Nameplate Capacity Growth July 2005 - Feb 2008



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## Ethanol Supply Outlook

- Supplies of ethanol to meet the needs of California, federal reformulated gasoline areas, and discretionary blend markets should be more than adequate to meet anticipated demand during the 2007 driving season
- Ethanol nameplate production capacity is estimated at nearly 6 billion gallons per year and could reach the 2012 RFS goal of 7.5 billion gallons some time this summer – assuming no additional construction delays or deferrals
- Ethanol values are anticipated to be significantly lower compared to the summer of 2006 due to the rapid increase in domestic production capacity



## Closing Remarks

- California's price spike during the first quarter of 2007 yielded a record differential of 54 cents per gallon for retail gasoline prices when compared to the U.S. average
- A heavier-than-normal refinery maintenance schedule, a number of unplanned outages, and a refinery fire in West Texas were all factors that contributed to a temporary tightness of gasoline supplies
- Proactive action by the Energy Commission and a commendable decision by a refiner to reschedule completion of a discretionary project averted further price increases for consumers & businesses



# Contact Information



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