

# **Risk Mitigation**

## **Phase 2. Managing Wholesale Revenue Volatility**

Board of Commissioners Meeting 3-15-2010

For information only – no action needed

- A reasonably **stable and predictable** revenue stream leads to more efficient management of utility operations.
- Having a tighter range of wholesale revenue outcomes aides in all aspects of financial planning.
- A more stable revenue stream would also translate into more retail rate stability.

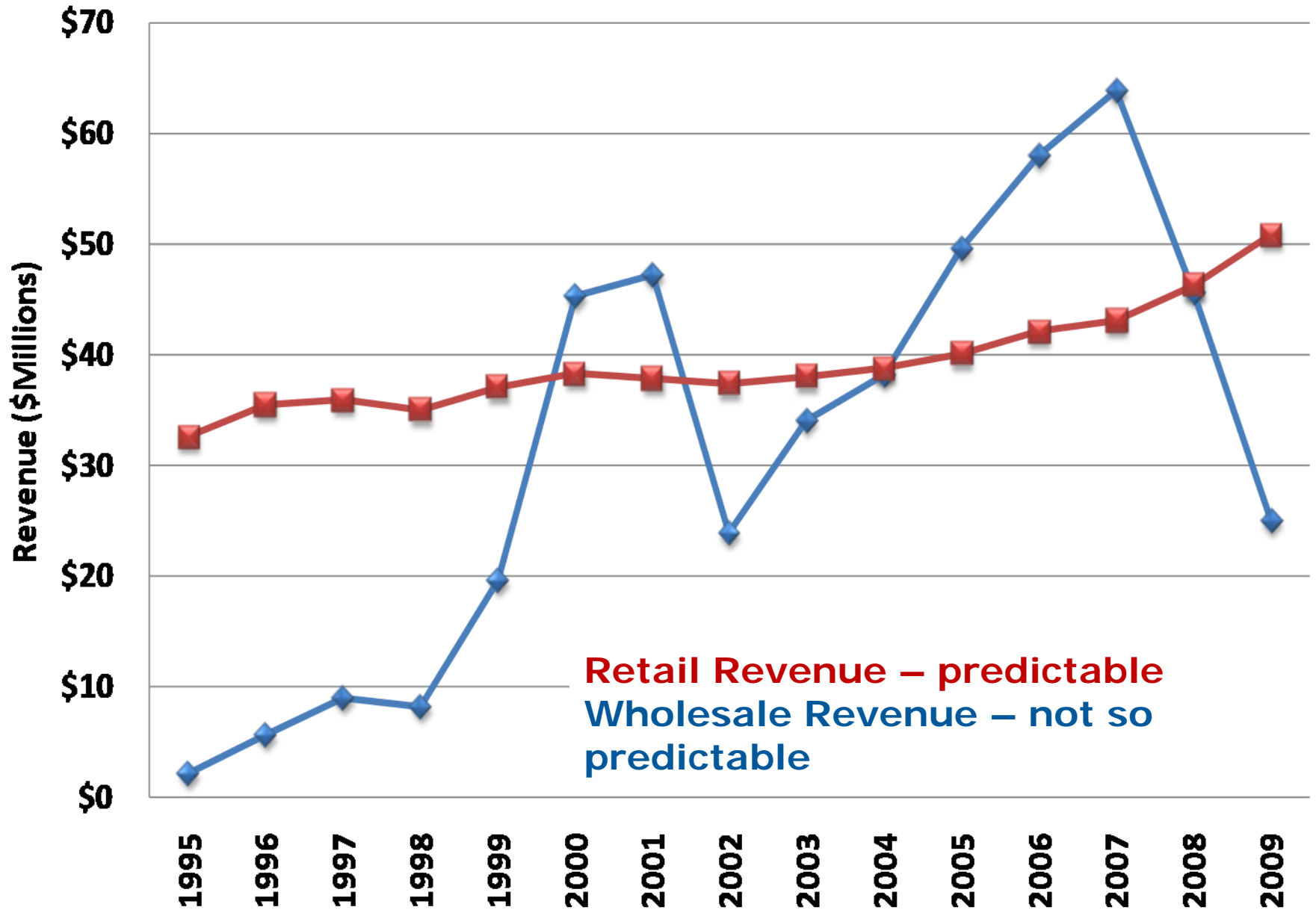
## **Why Stabilize Revenue?**

- Summary from 12/7/09 presentation:
  - Phase #1 – recap:
    - Short to Mid-term price hedging program
    - Modest reduction in volatility due to market price changes
  - Still to come:
    - Surplus energy positions
      - **Longer-term hedging proposals**
      - **Alternatives for mitigating volumetric risks**
    - Interest rate risk
    - Other material risks

- Today we are here to introduce Phase #2 hedging concepts:
  - Introduce a market-based “slice of the system” into our toolbox to help mitigate volumetric risk (as well as market price risk)
    - A “slice of the system” is not a new concept – we’ve had cost-based slices for nearly 50 years (e.g., existing power purchase contracts)
    - The only thing “new” is the pricing – market-based instead of cost-based
  - Extend horizon of hedging program from 35 months to 60 months

## Risk Mitigation – Phase 2

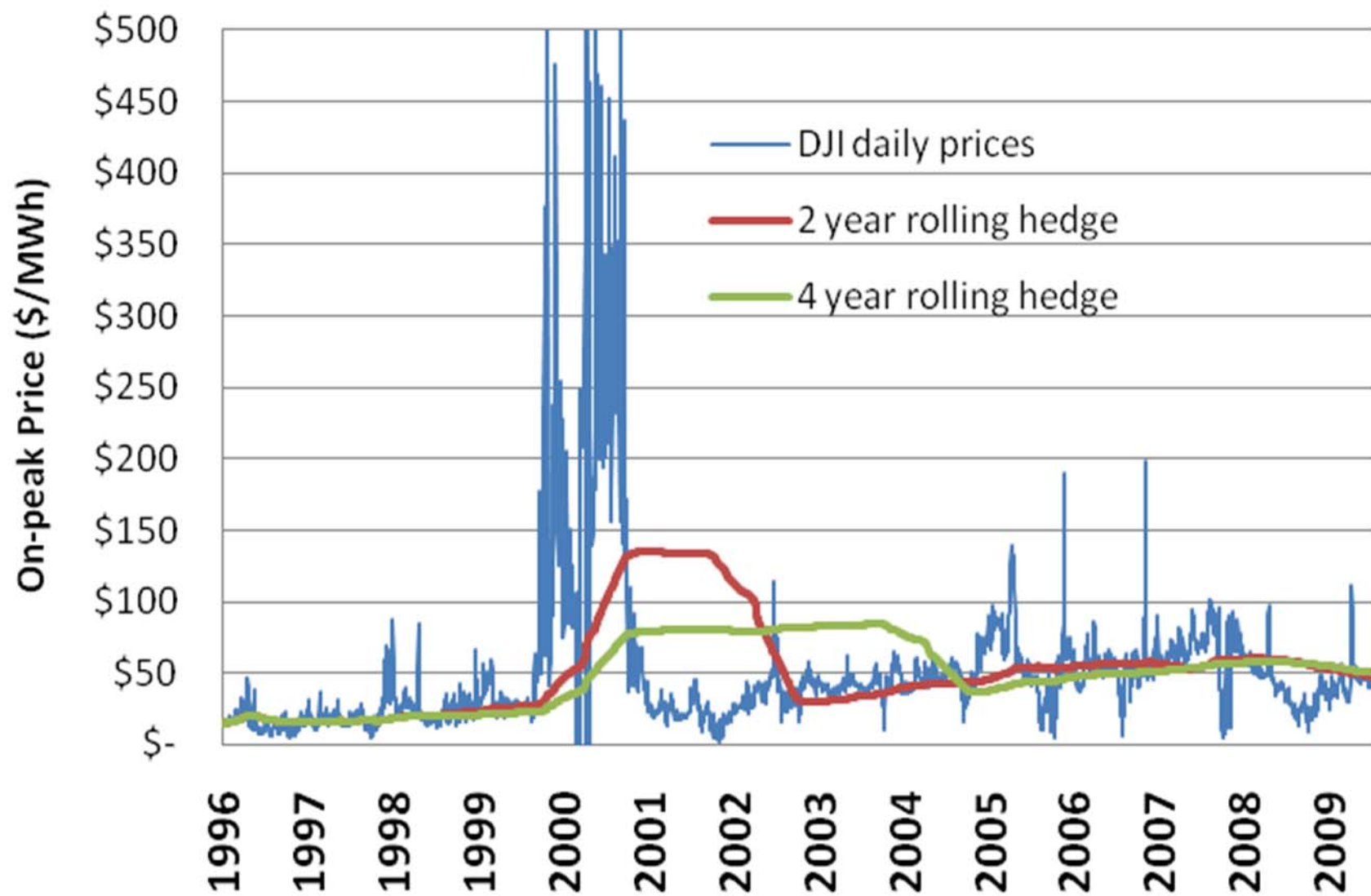
# District Wholesale Revenue and Retail Revenue



- Net Wholesale Revenue volatility – three primary risk factors:
  - Price risk
    - Variable market prices directly impact revenue derived from surplus sales
  - Stream flow risk - Volume risk
    - Variable stream flow – lower stream flows mean less surplus energy to sell into wholesale market
  - Load risk - Volume risk
    - Variable load – higher retail loads mean less surplus energy to sell into wholesale market

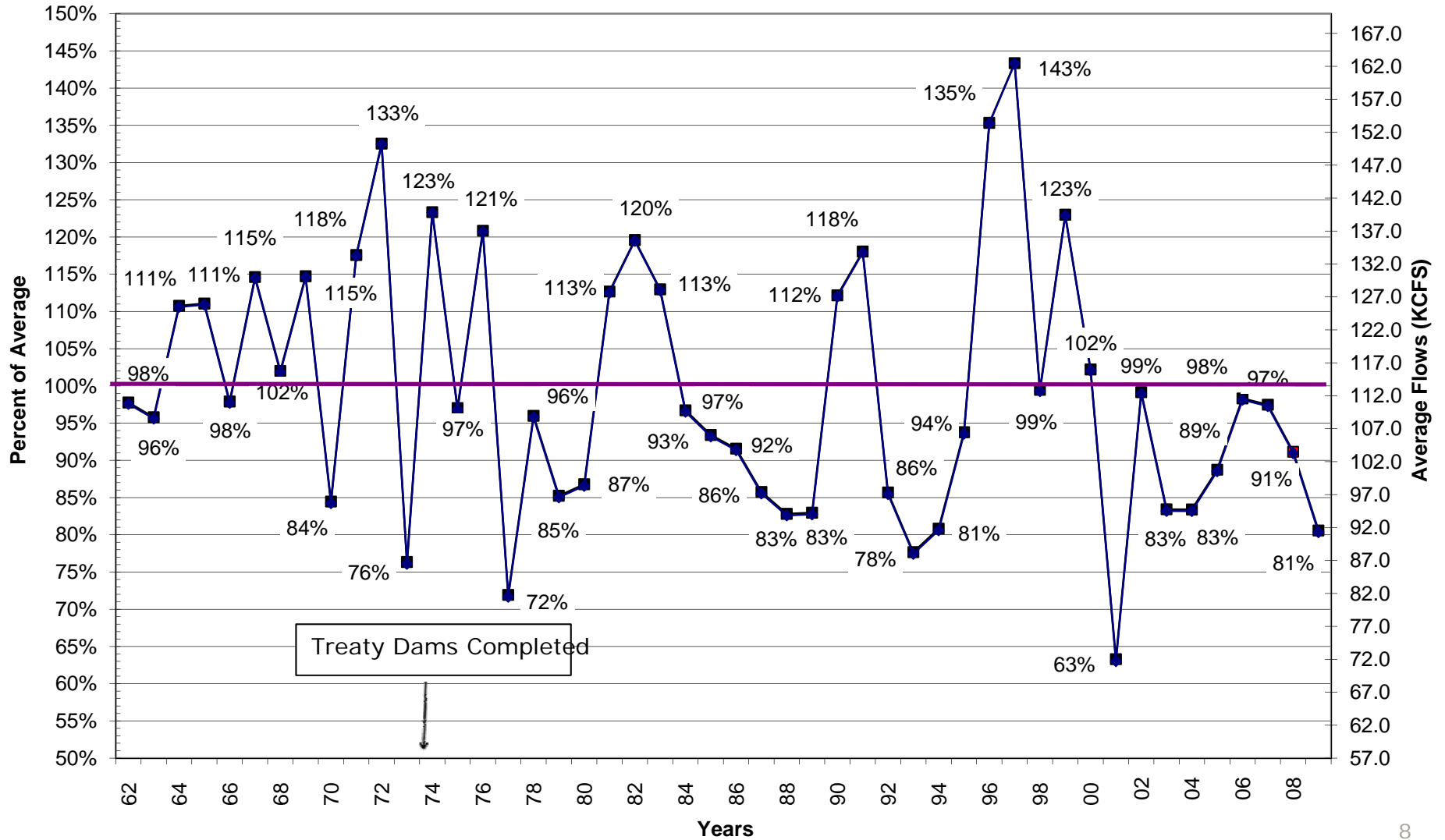
## Primary Risk Factors

# Hedged Prices Compared to Unhedged Prices

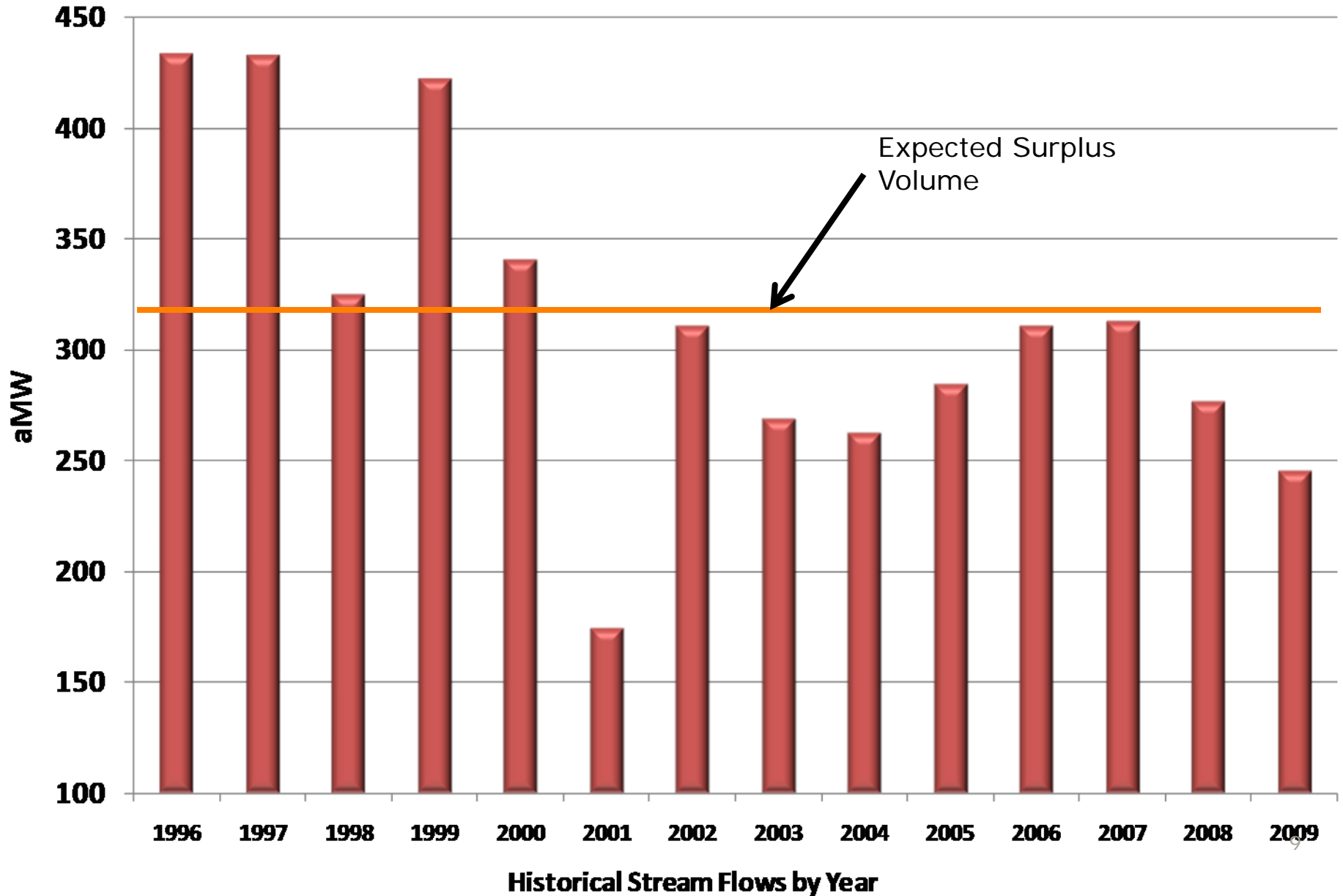


# Rocky Reach Average Yearly Flows 1962 Through 2009

## 78 Year (1929-2006) Reregulated Average of 113.3 KCFS

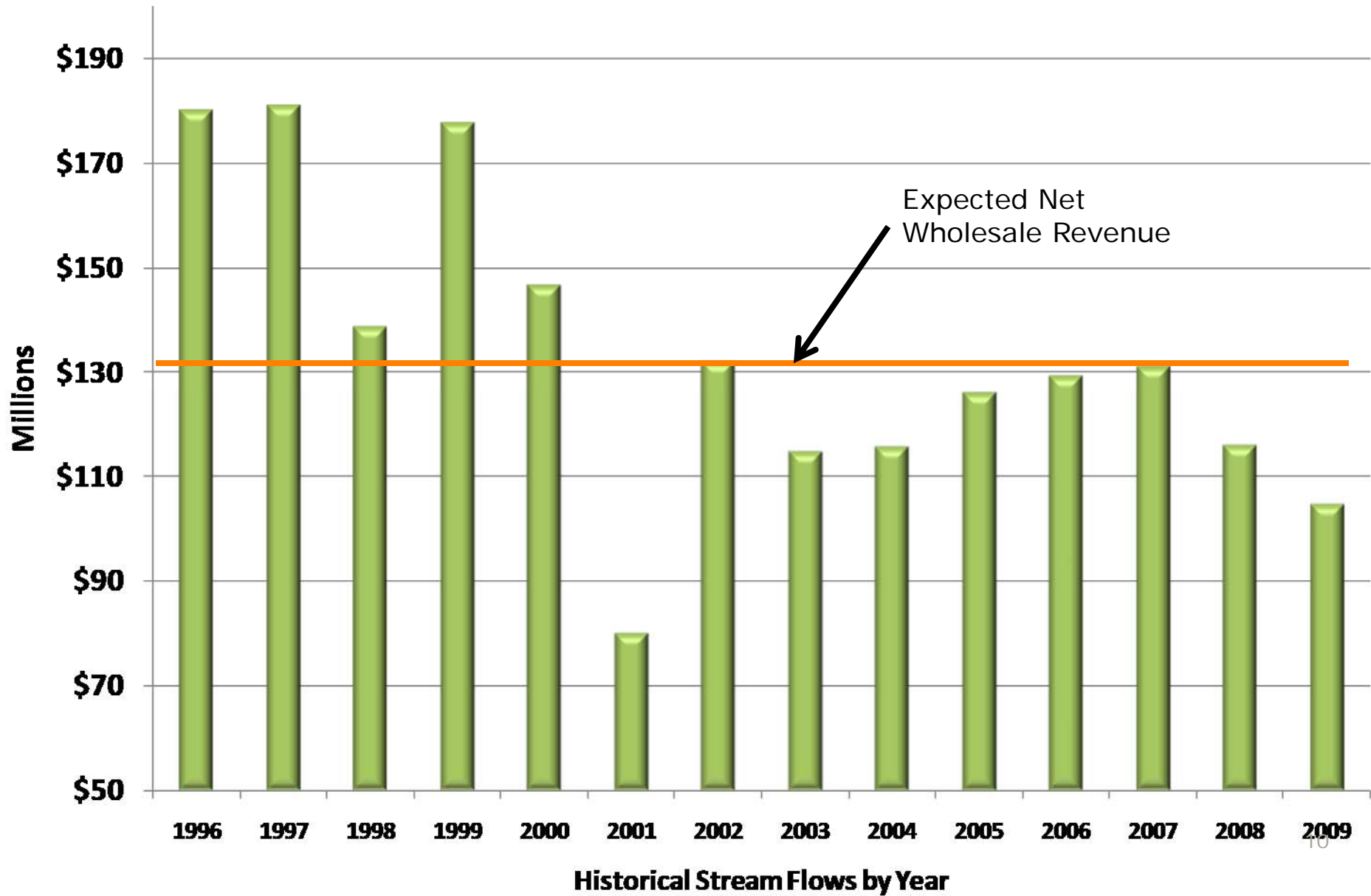


# Projected 2012 Surplus Volume *Under Historical Stream Flows*



# Projected 2012 Net Wholesale Revenue

## *Under Historical Stream Flows*



**Call and Put options**

**Dynamic Capacity Sale**

**Exchanges**

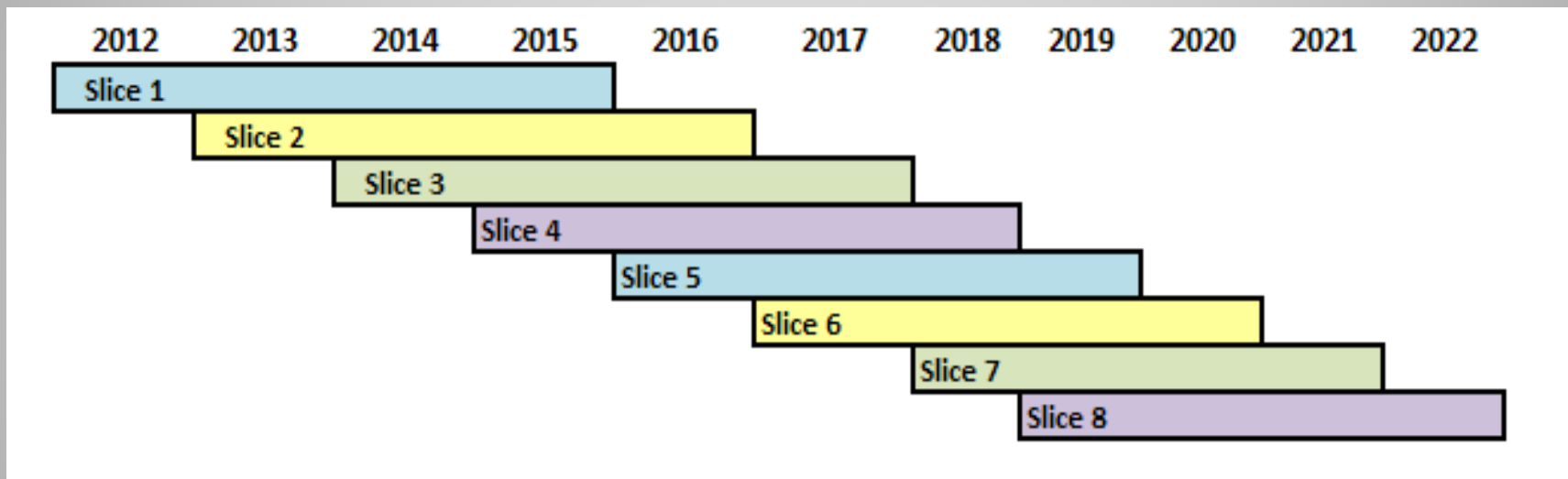
**Slice product sale**

**Block energy sale**

**Stream flow insurance**

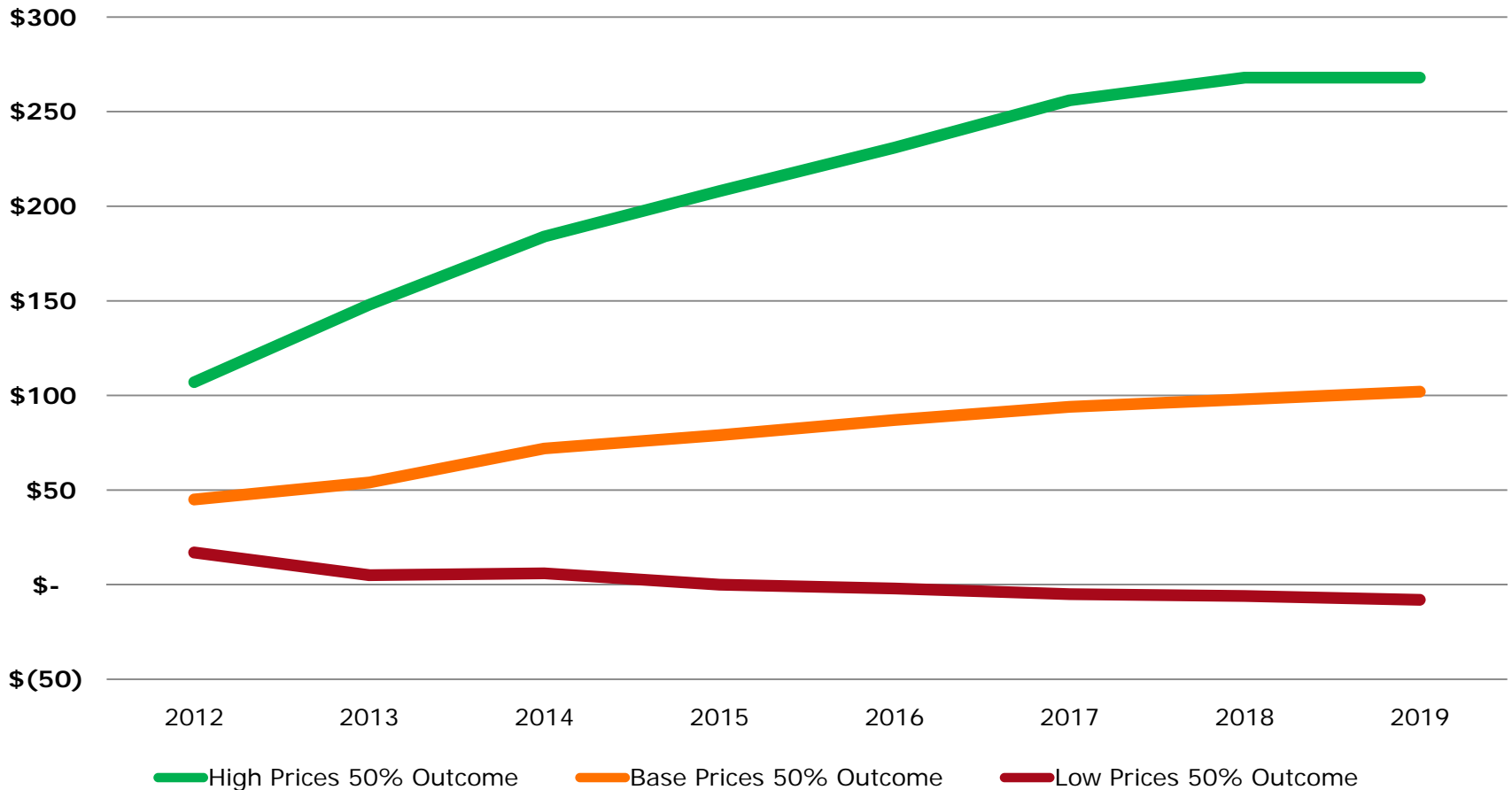
**Hedging tools that have been evaluated**

- Sell surplus energy not needed for projected future load growth in staggered forward sales
- Lock in more **stable and predictable** revenue stream from sales of surplus energy



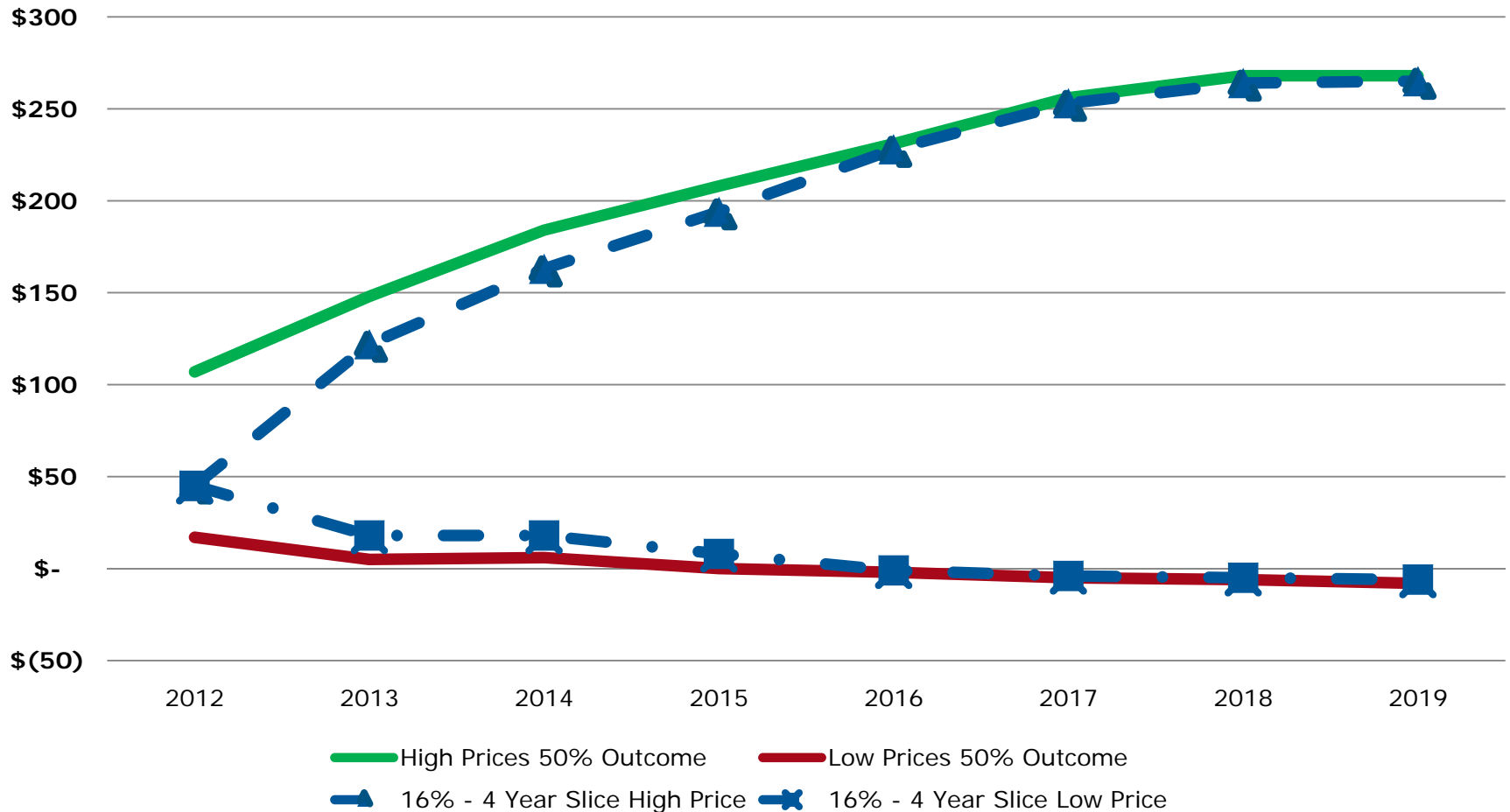
**Hypothetical Long Term Hedging Concept**

## Forecasted Utility Services Change in Net Assets (in millions)



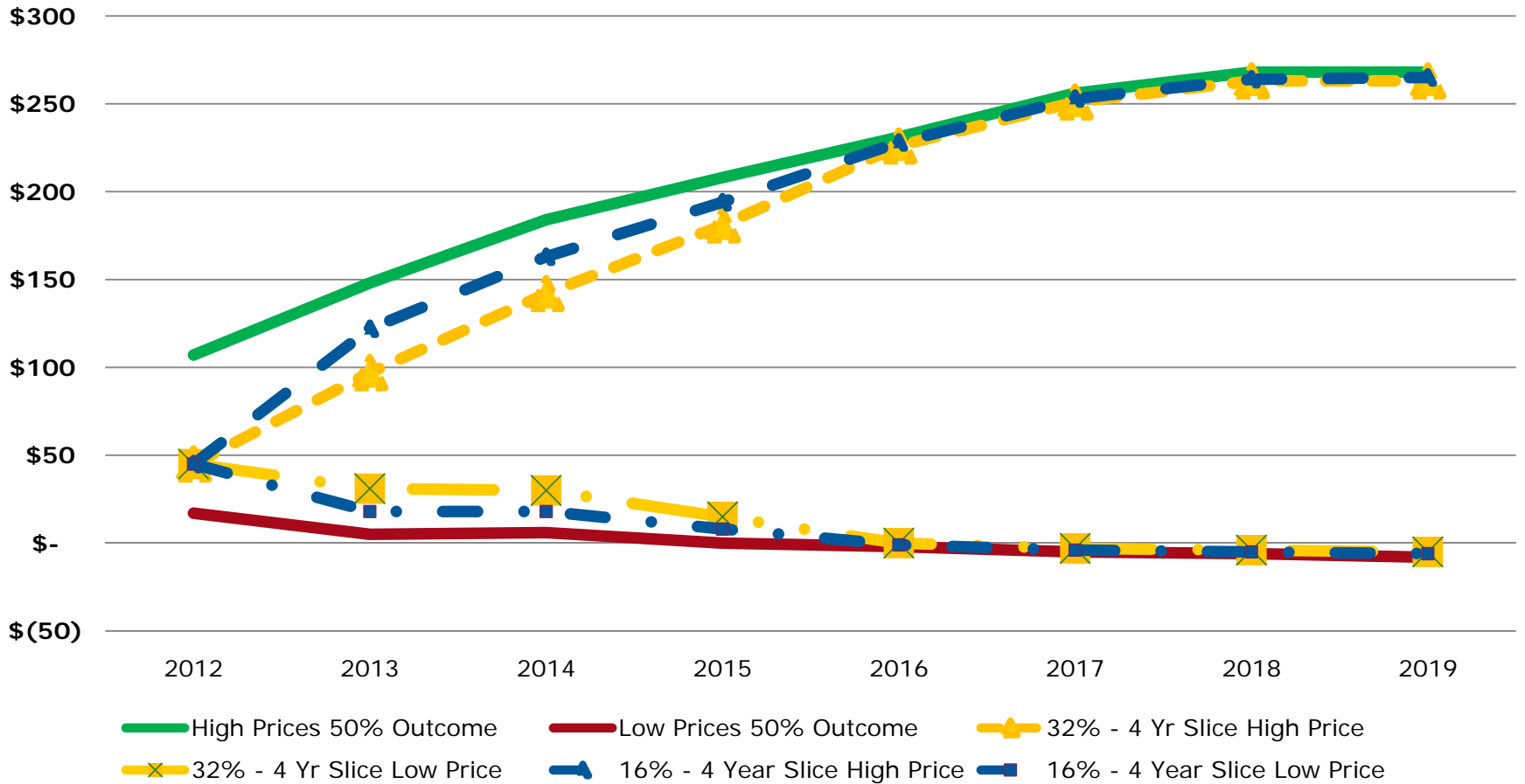
**Example – Base Case  
Unhedged – “normal water”**

## Forecasted Utility Services Change in Net Assets (in millions)



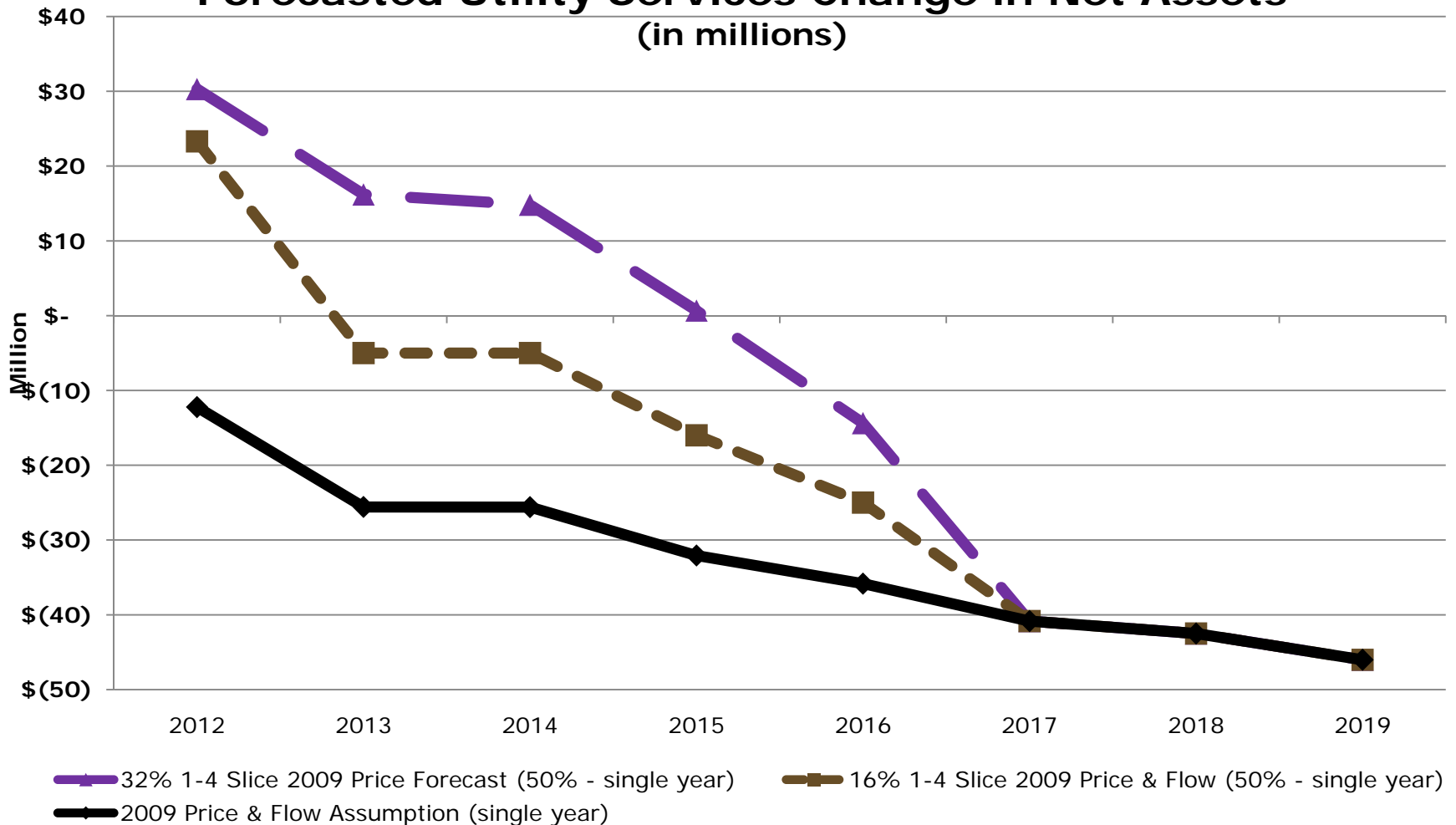
**Example – 4-year rolling 16% Slice  
Partial hedge – “normal” water**

# Forecasted Utility Services Change in Net Assets (in millions)



**Example – 4-year rolling 32% Slice  
Partial hedge – “normal” water**

## Forecasted Utility Services Change in Net Assets (in millions)



**Example – Stressed Water and Prices**  
**Repeat of 2009 water and prices starting in 2012**  
**(individual year outcomes – remaining years at base case)**

4 year staggered  
slice – 32%

8 year rolling slice – 32%

4 year staggered  
slice – 16%

Stressed water and price  
scenario – 16%

8 year rolling slice – 16%

**Slice options that have been  
evaluated**

- Can't prevent bad water years or price swings.
- Hedging strategy can mitigate these events which result in a more stable and predictable revenue stream.

## Summary

- Phase #2 – recap of today's program:
  - Overview of hedging and longer-term hedging options
  - Laddered approach-flexibility to adapt to load growth, other needs
  - Introduction of a tool to help mitigate volumetric risk
  
- Transaction authority resolution to be presented next week
  
- Still to come:
  - Interest rate risk
  - Other material risks

## Summary