



# Summer Operations: July 15-19, 2013 Heat Wave

**Wes Yeomans**

*Vice President - Operations*

*New York Independent System Operator*

**Management Committee Meeting**

*July 31, 2013*

*Krey Corporate Center*

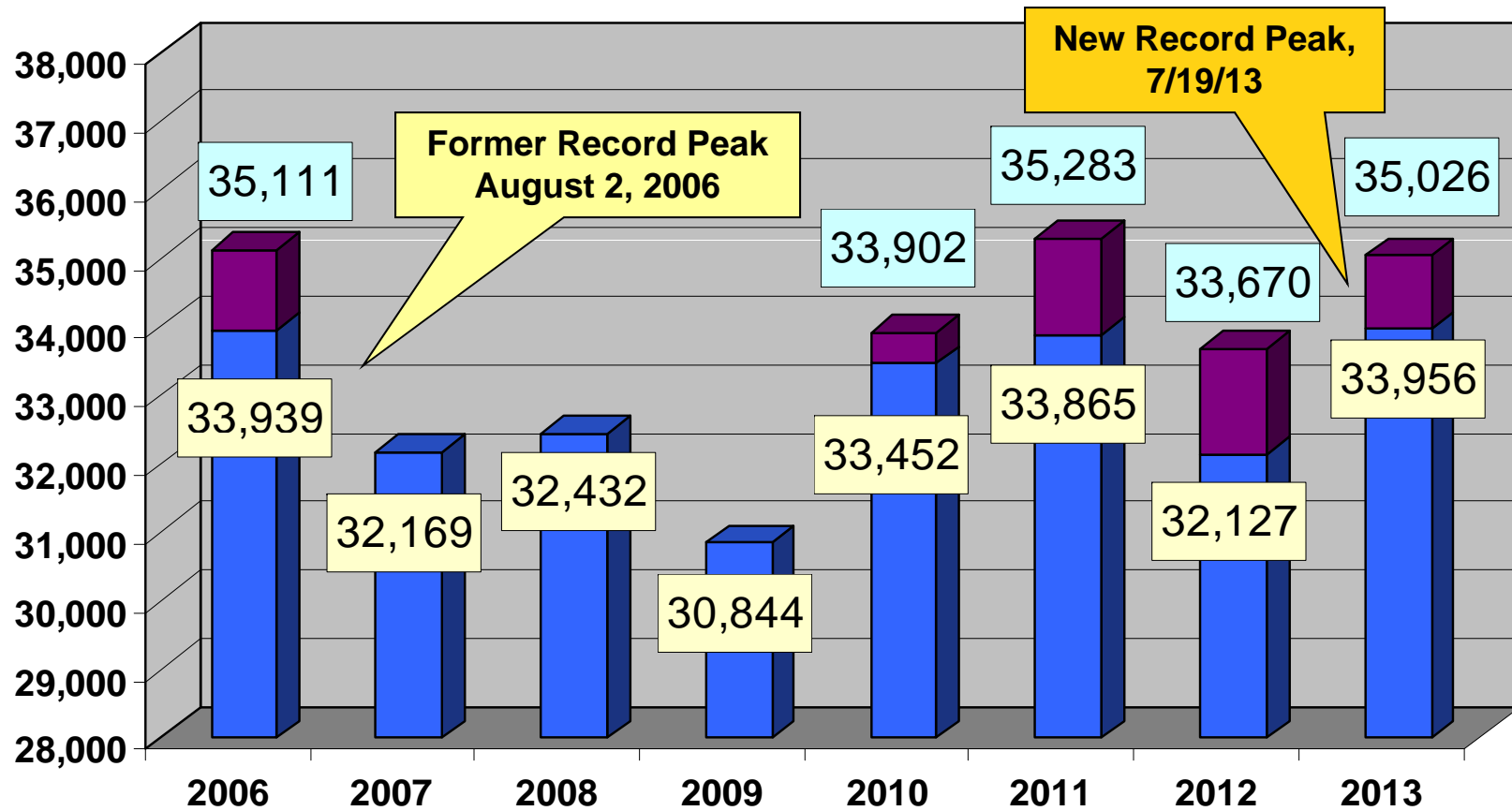
# July 15-19 Heat Wave

- ◆ **Significant heat wave across the entire Eastern Interconnection for six consecutive days -- characterized by high temperatures and high humidity levels**
- ◆ **NYISO set a new, all-time peak load of 33,956 MW on Friday, July 19 for Hour Beginning 16**
  - *Previous all-time peak load of 33,939 MW was recorded on Wednesday, August 2, 2006*
- ◆ **All operating criteria was met during the week of July 15-19, 2013**

# Key Operations Observations

- ◆ **The Dunkirk generating unit mothballing of 445 MW has significantly changed power flows on the Western NY 230 kV system which resulted in significant transmission constraints and congestion**
  - *These Western NY 230kV system constraints have reduced operational flexibility of the Niagara Power Project and the NYISO's ability to rely on neighboring control area (IESO) to provide assistance during high load conditions*
    - **Reduced operational flexibility on the ability at Niagara to respond to NYISO reserve activations**
    - **Reduced ability to import either emergency energy or economic energy from IESO when the Niagara Project is at or near its full operating capability**
  
- ◆ **The July 18 and July 19 load profile exceeded 33,000MW for over six hours of each day**
  - *The duration of these days' peak load shape exceeds the current 4 hour minimum performance requirement of Energy Limited Resources and Demand Response resources*

## Summer Peak Loads - 2006 to 2013 (MW)

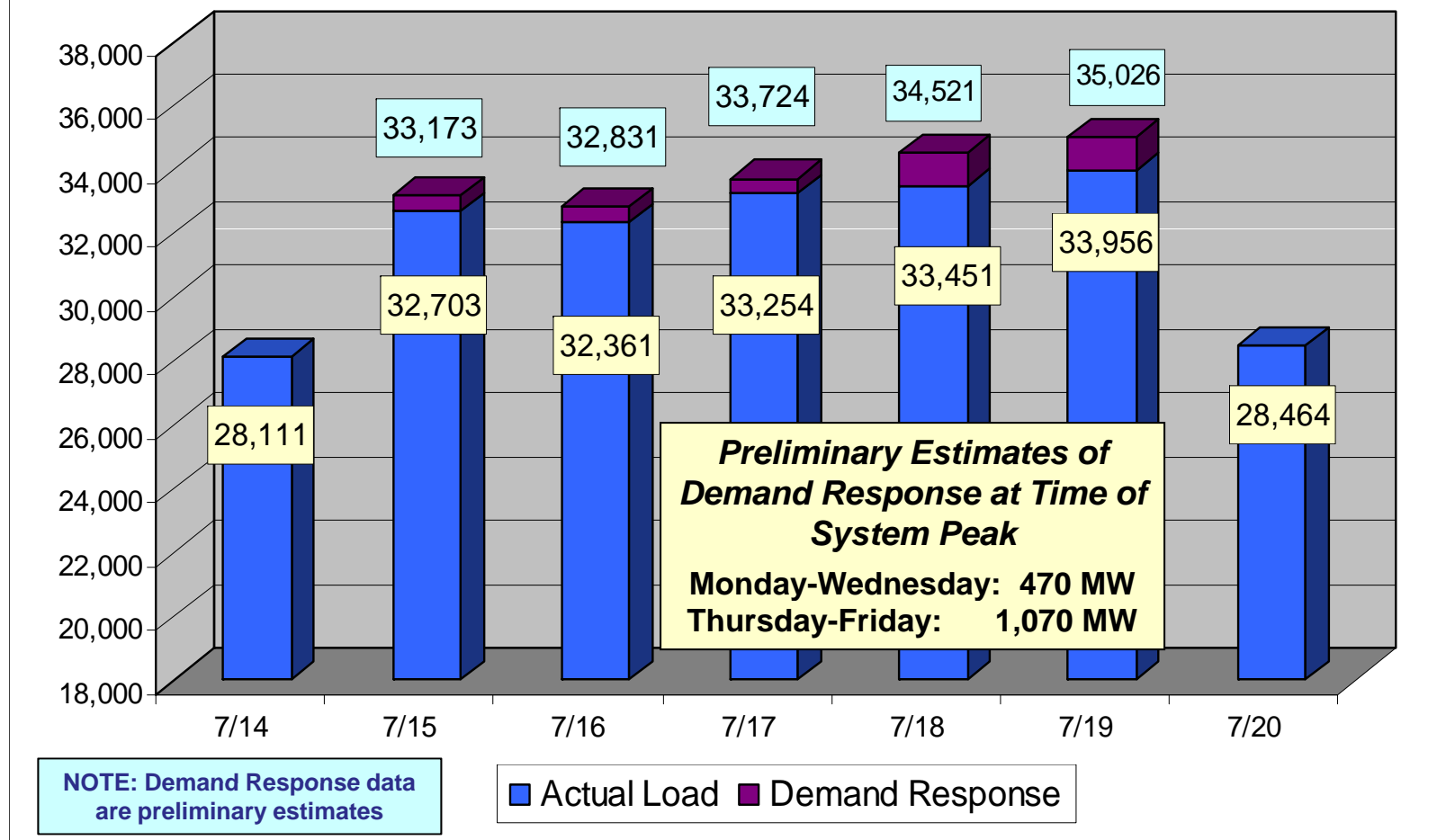


NOTE: 2013 Demand Response data are preliminary estimates

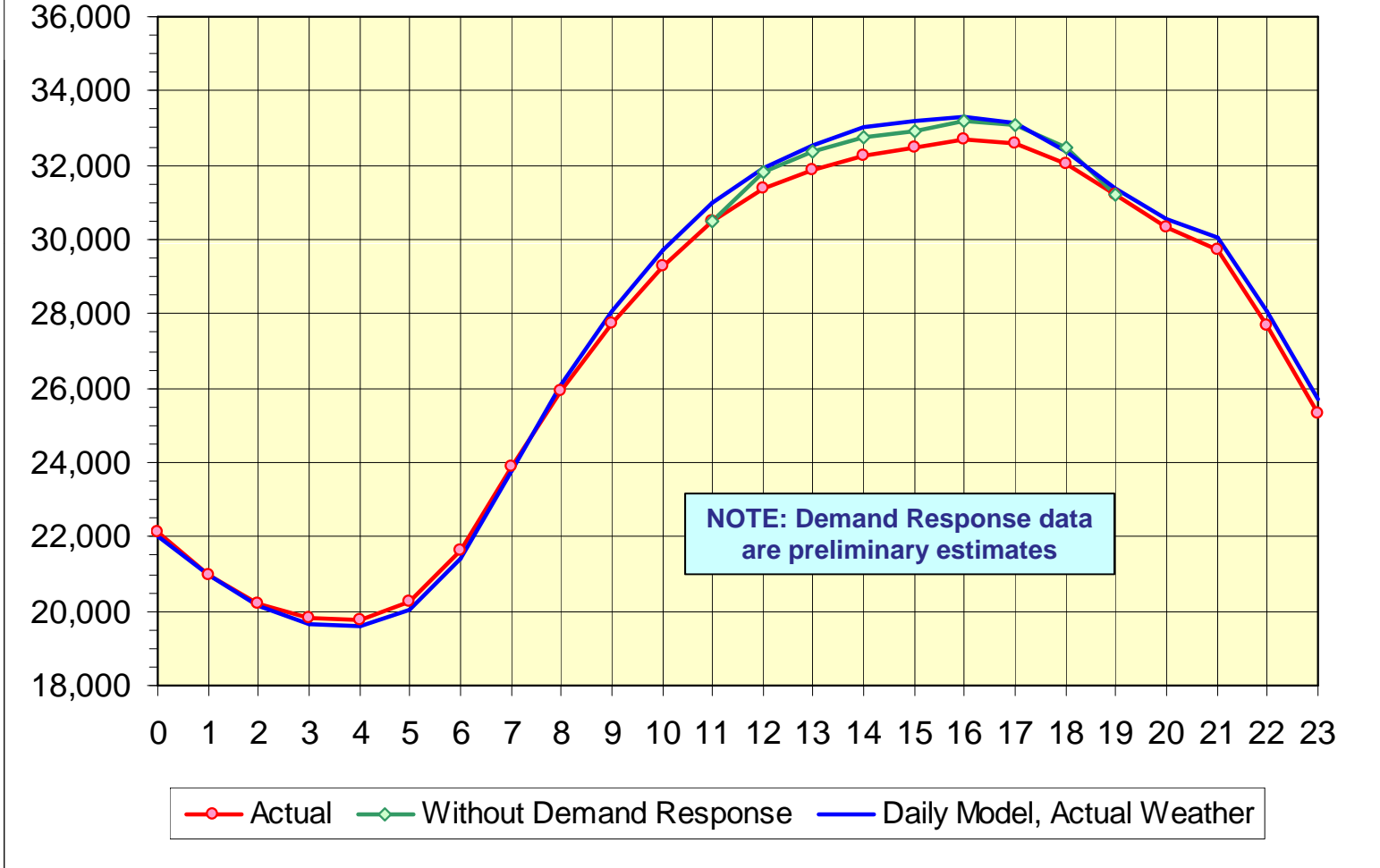
Actual Load Demand Response

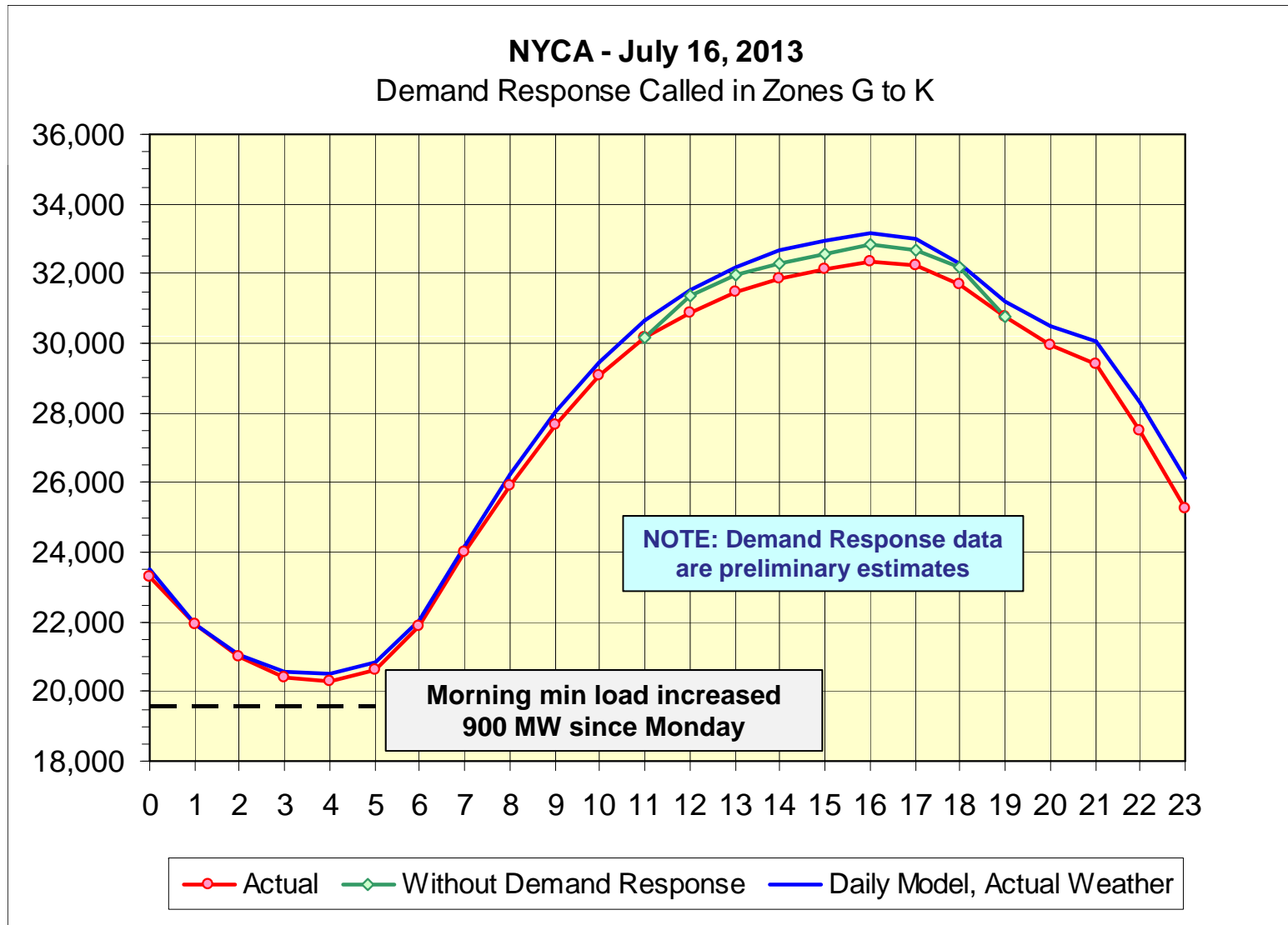
## Daily Peaks & Demand Response - MW

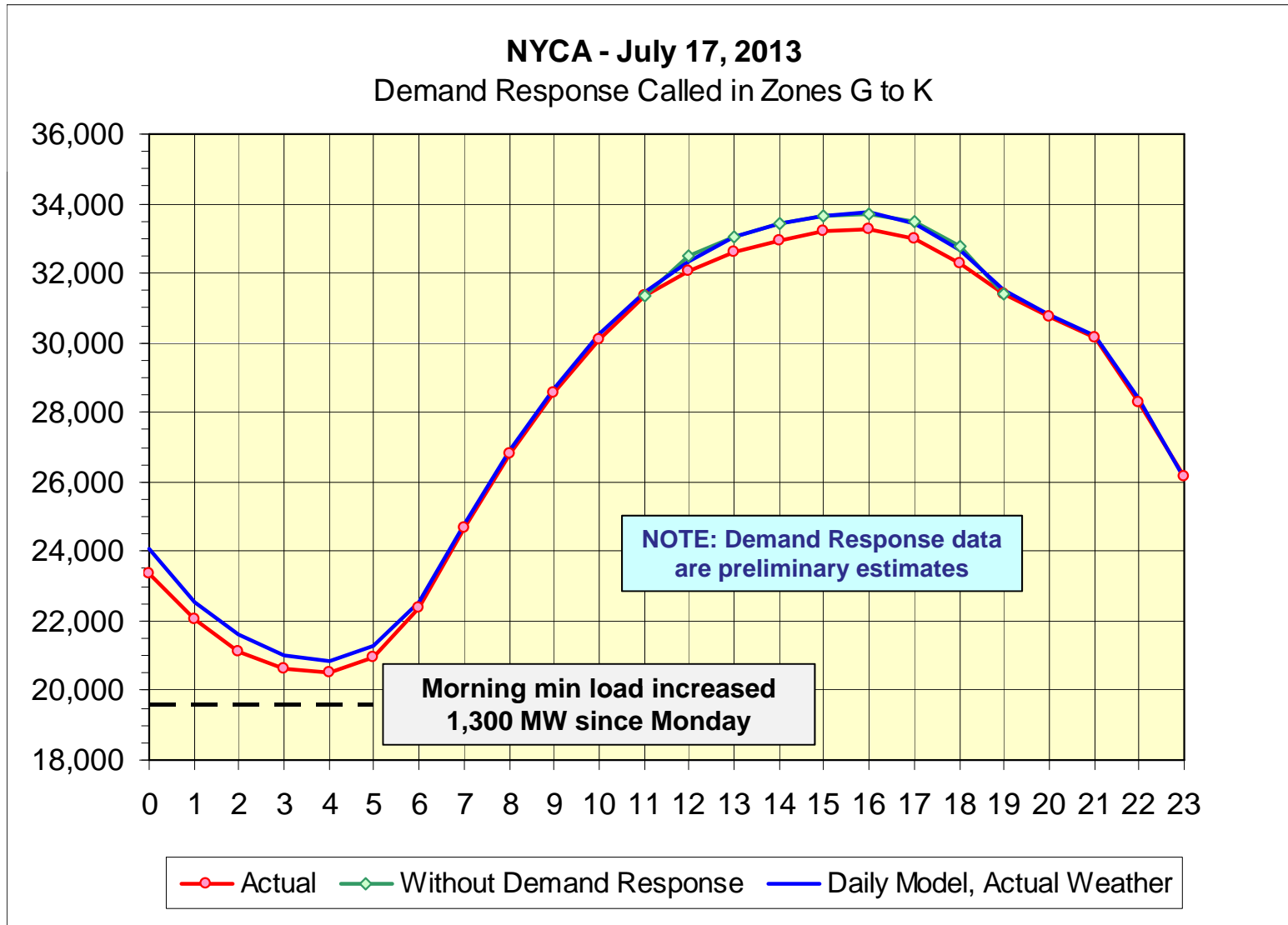
### July 14 to July 20, 2013



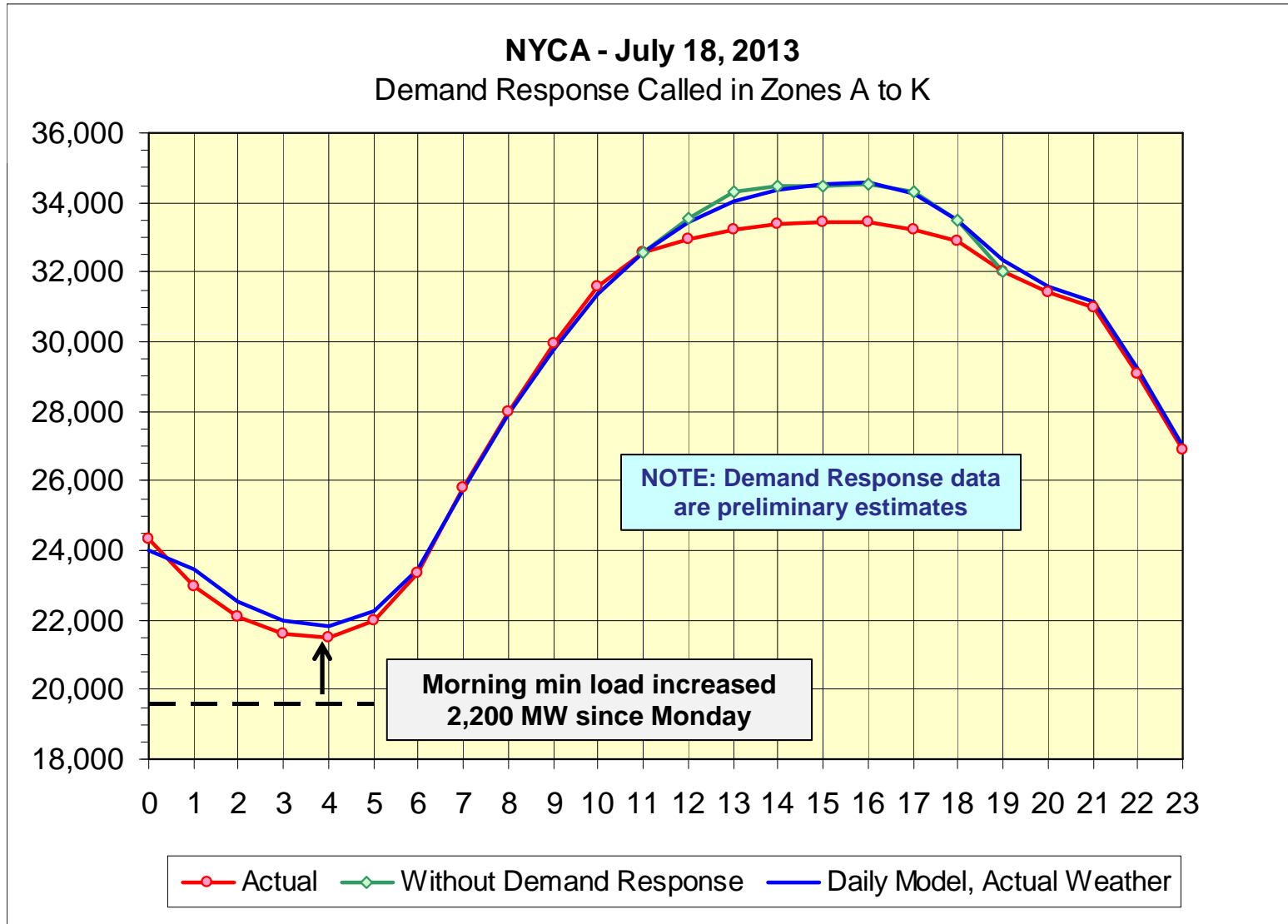
**NYCA - July 15, 2013**  
Demand Response Called in Zones G to K

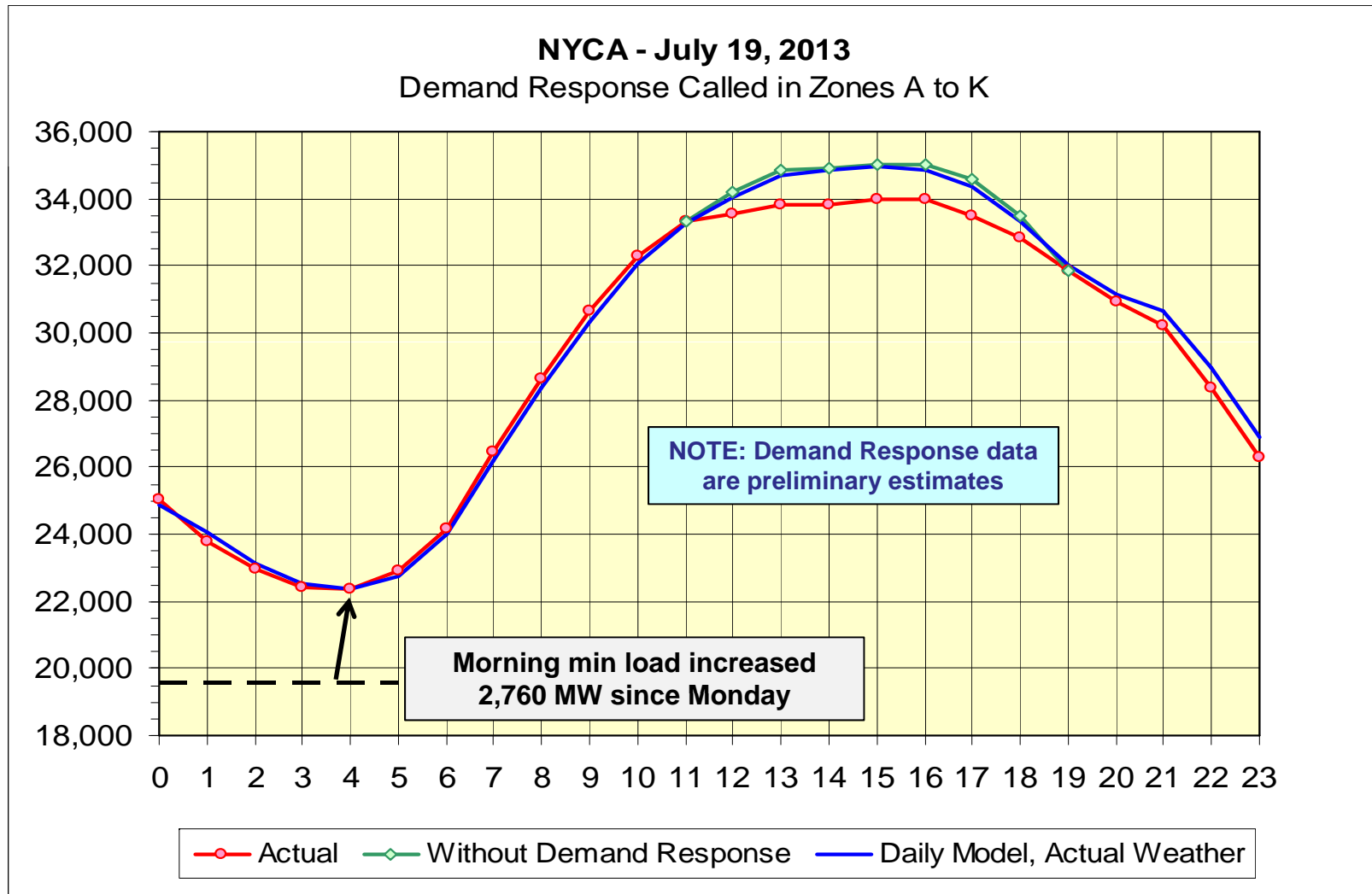


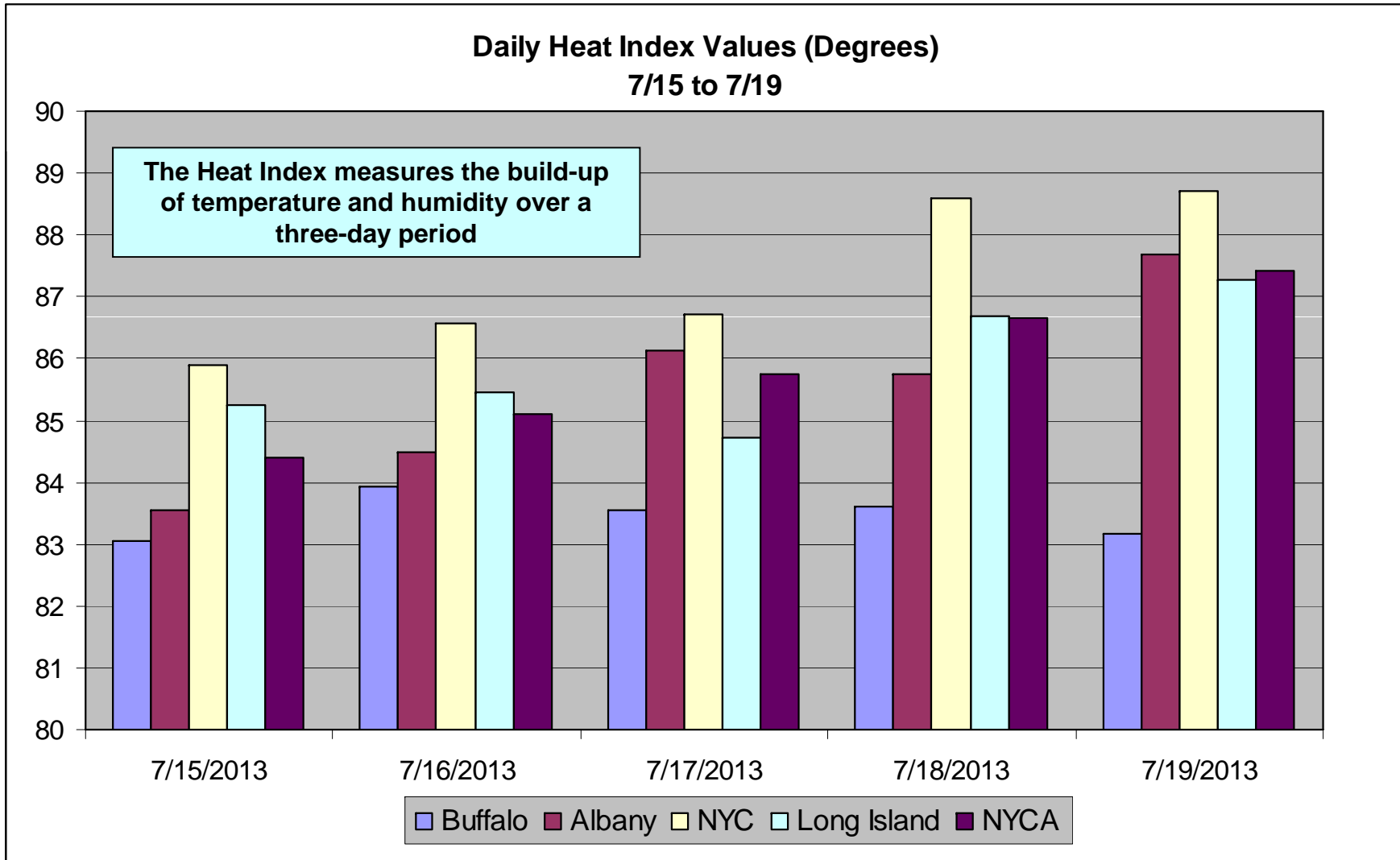




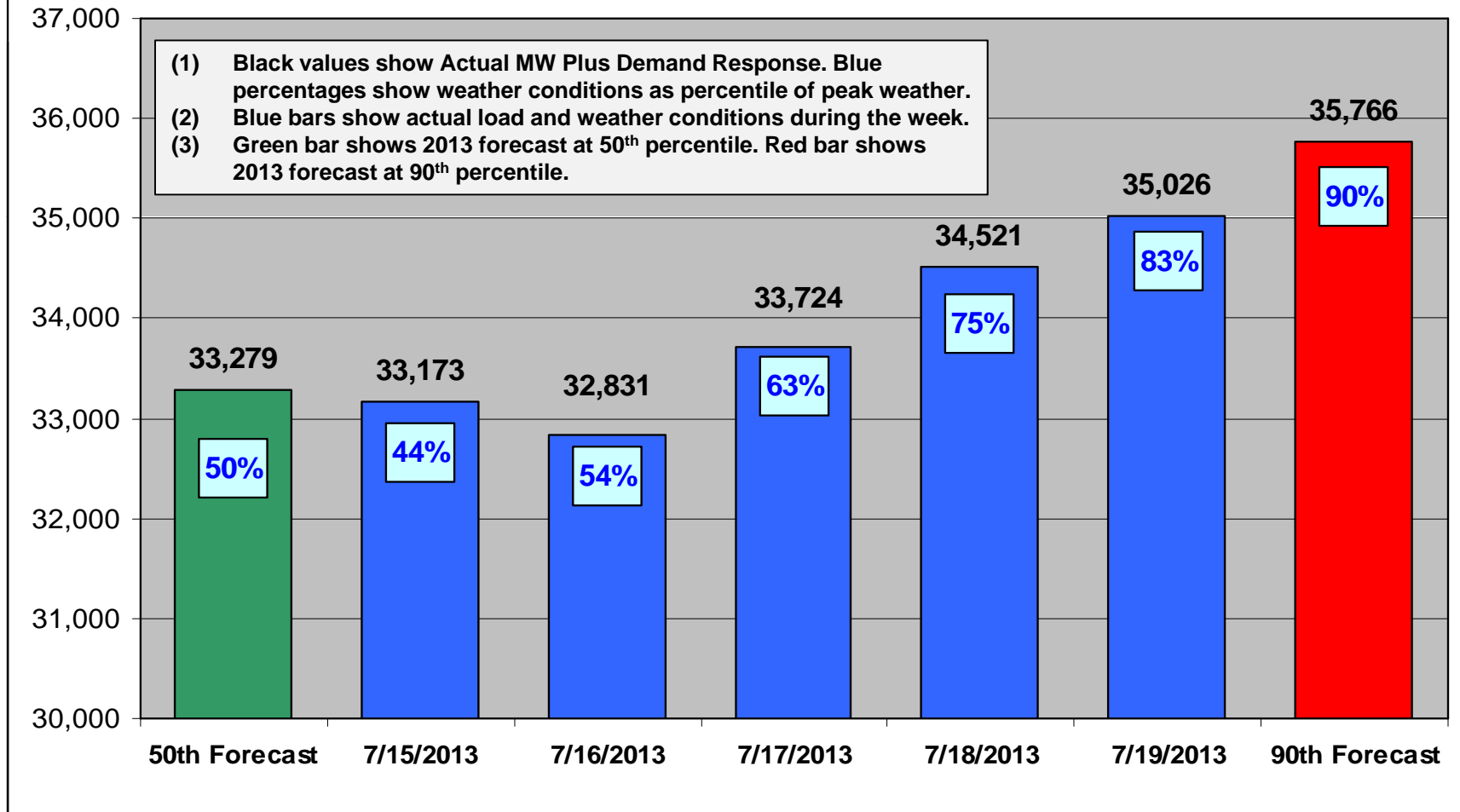








### Daily Peaks (With Demand Response) & Percentile of Daily Heat Index With NYCA 50th & 90th Percentile Forecasts for Comparison



# State & Utility Customer Appeals

## ◆ New York State

- *NY State agencies activated curtailment of internal, non-essential use during same time periods of NYISO Demand Response activations*
- *July 18 Governor's press release urged public to conserve electricity usage during the remainder of the heat wave*

## ◆ Transmission Owners

- *Some utilities curtailed non-essential internal use during the week*
- *Some utilities issued public appeals throughout the week*

# Regional Conditions

- ◆ **By Thursday (July 18), 47 of 50 states were predicting temperatures above 90° F**
- ◆ **NYISO participated in daily regional conference calls including participation from all NPCC members, as well as PJM and MISO**
- ◆ **Generally, NPCC members, PJM, and MISO projected the ability to meet load and reserve requirements**
- ◆ **Simultaneous Activation of Reserves (SAR) was activated for large contingencies in adjacent areas**
- ◆ **Some neighboring areas activated Demand Response**
- ◆ **Hydro Quebec - No adverse impacts to export capability from forest fires**

# Supplemental Resource Evaluations

- ◆ **NYISO Supplemental Resource Evaluation (SRE) generation commitments:**

<i>Monday</i>	<i>Oswego 5</i>	<i>Statewide Capacity requirements</i>
<i>Tuesday</i>	<i>Oswego 5</i>	<i>Statewide Capacity requirements</i>
<i>Wednesday</i>	<i>Oswego 6</i>	<i>Statewide Capacity requirements</i>
<i>Thursday</i>	<i>Oswego 5 &amp; 6</i>	<i>Statewide Capacity requirements</i>
<i>Friday</i>	<i>Oswego 5 &amp; 6</i> <i>Falcon Seaboard</i>	<i>Statewide Capacity requirements</i> <i>Transmission Security</i>

# Generation Performance

- ◆ **Generation performance was excellent during the week of the heat wave**
  - *All available generation was in operation from July 17-19*
  - *Very few forced outages throughout the six day heat wave event*



# Demand Response Performance

## Demand Response - Notifications

*July 15-19, HB 12-17, Zones A-K*

*NYISO provided 21-hor notice for potential activation  
In anticipation of likely need to activate DR resources*

## Demand Response – Activations

*July 15 HB13-17 Zones G-K*

*Lower Hudson Valley Transmission Security  
(Preliminary estimate of 470MW of UCAP)*

*July 16 HB13-17 Zones G-K*

*Lower Hudson Valley Transmission Security  
(Preliminary estimate of 470MW of UCAP)*

*July 17 HB13-17 Zones G-K*

*Lower Hudson Valley Transmission Security  
(Preliminary estimate of 470MW of UCAP)*

*July 18 HB 12-17 Zones G-K  
HB13-17 Zones A-F*

*Lower Hudson Valley Transmission Security  
& Statewide Capacity Requirements  
(Preliminary estimate of 1070MW of UCAP)*

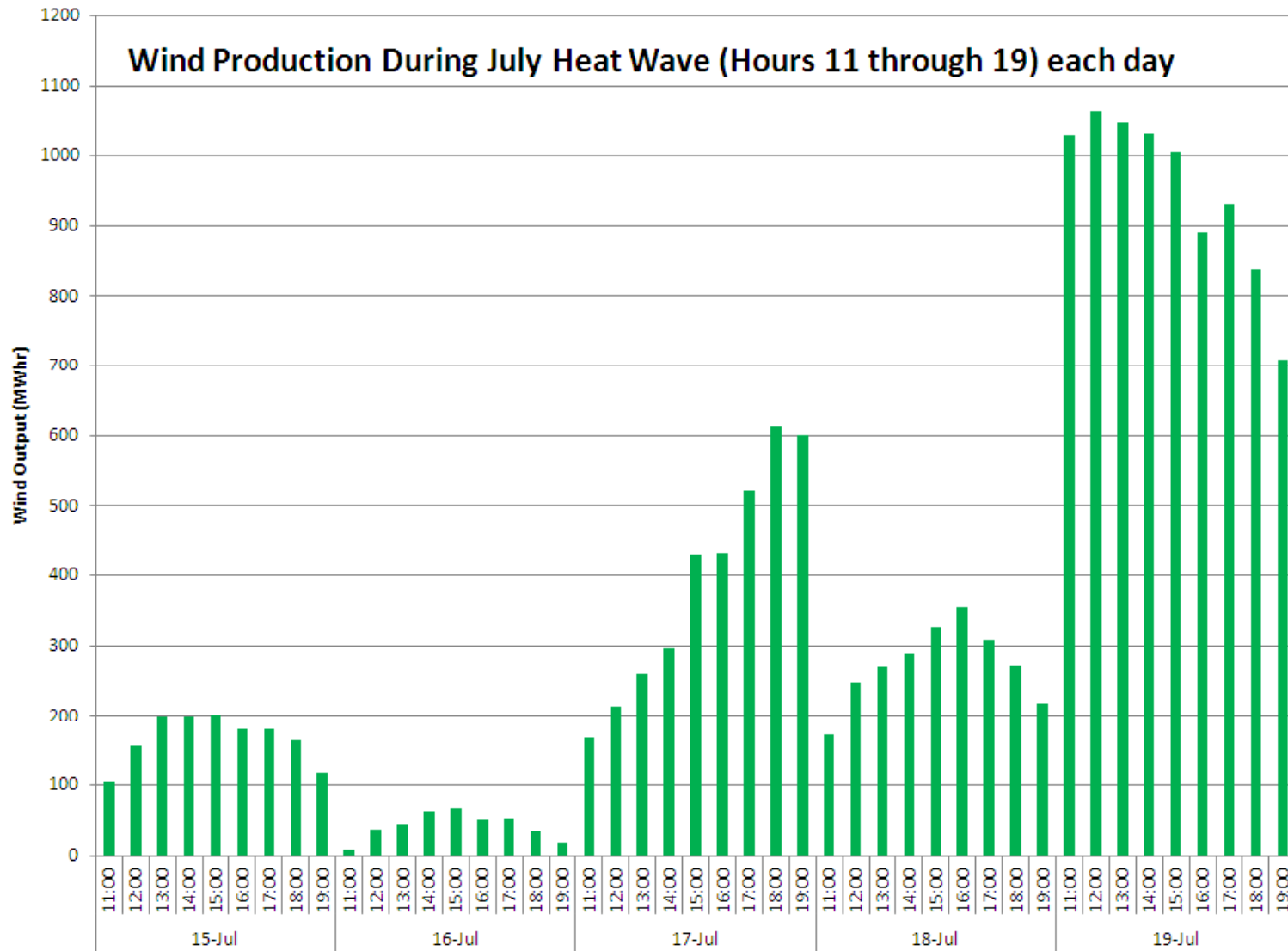
*July 19 HB 12-17 Zones G-K  
HB 13-17 Zones A-F*

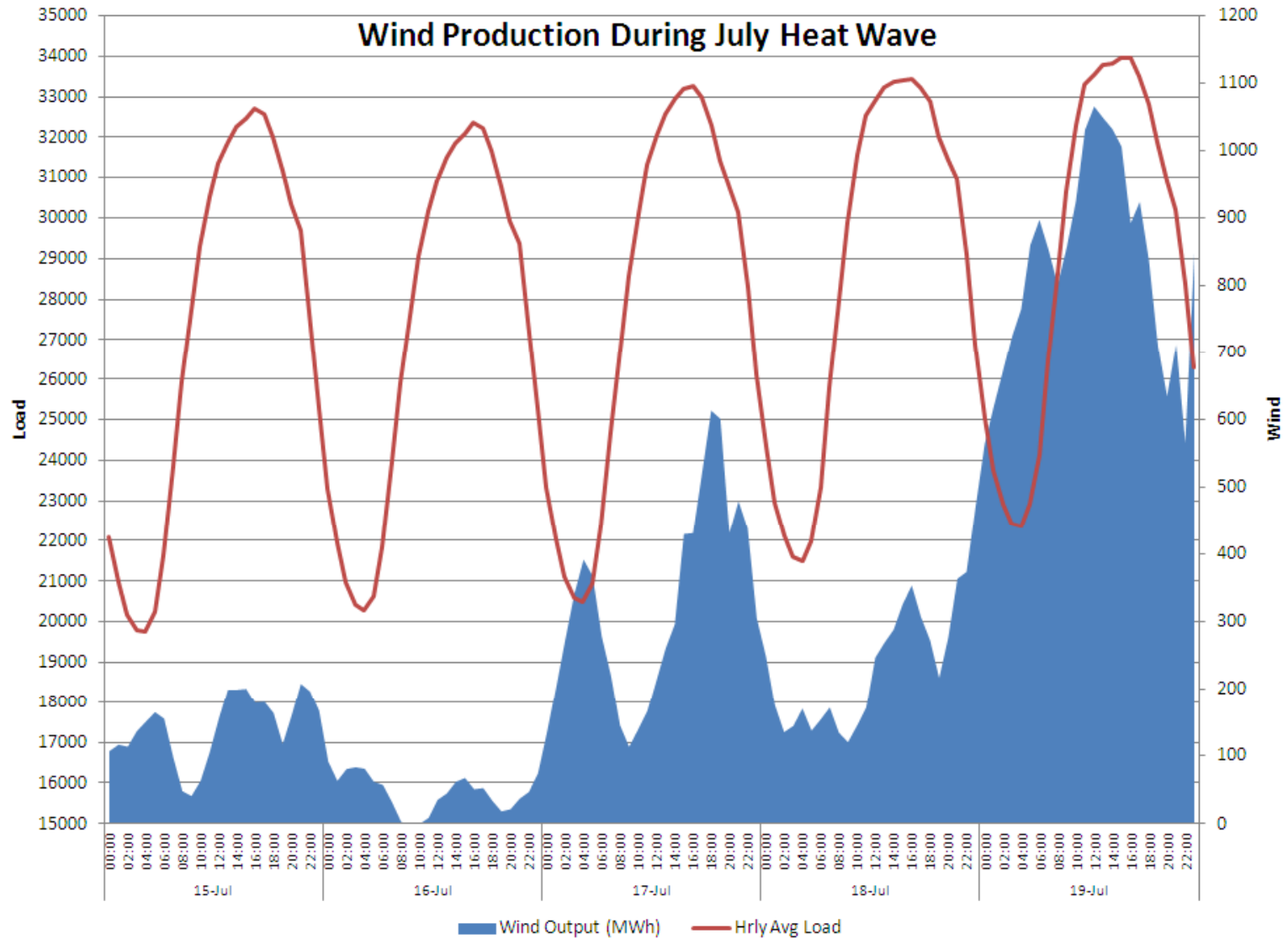
*Lower Hudson Transmission Security  
& Statewide Capacity Requirements  
(Preliminary estimate of 1070MW of UCAP)*

# Transmission Performance

- ◆ **Transmission performance was excellent during the week**

- *No transmission lines were out of service for maintenance*
- *All 765 kV and 345 kV transmission remained in-service the entire week*
- *Forced transmission outages during the week included; Huntley-Elm 70 230kV, Niagara 230kV/115kV TB#1, Sugarloaf-Rock Tavern 115kV*
- *Bulk Power System voltage performance was strong across the week*
  - **822 MVars of additional capacitors installed statewide over the few years as part of the New York Smart Grid Project appeared to improve voltage performance**





# Summary of Pricing Outcomes

**Scarcity pricing outcomes during the heat wave event have been validated to be correct and detailed review of the pricing outcomes is scheduled for the August MIWG**

Day	Pass "but for" test	Fail "but for" test
July 15, 2013	85%	15%
July 16, 2013	53%	47%
July 17, 2013	89%	11%
July 18, 2013	100%	0%
July 19, 2013	100%	0%

Day	Pass "but for"; scarcity price prevailed	Pass "but for"; original RTD price prevailed
July 15, 2013	88%	12%
July 16, 2013	81%	19%
July 17, 2013	91%	9%
July 18, 2013	93%	7%
July 19, 2013	100%	0%

The New York Independent System Operator (NYISO) is a not-for-profit corporation responsible for operating the state's bulk electricity grid, administering New York's competitive wholesale electricity markets, conducting comprehensive long-term planning for the state's electric power system, and advancing the technological infrastructure of the electric system serving the Empire State.



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