

# **Load Forecasting Task Force Meeting**

## **Weather Normalization Approaches**

**March 31, 2005  
NYISO Washington Ave**

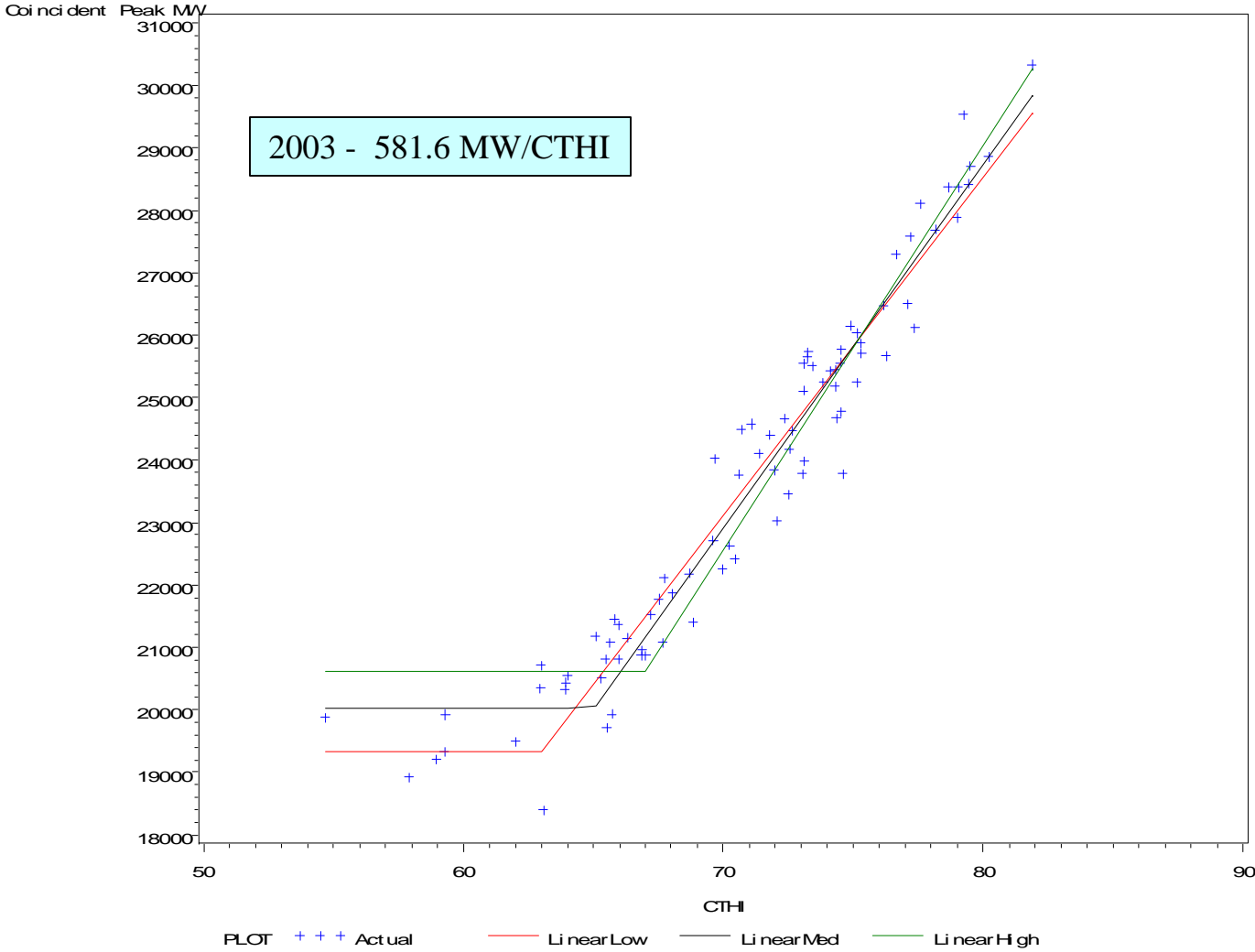
*For discussion purposes only*

## Current Method

1. Fit a weather model to actual loads
2. Find median weather value of extreme load day
3. Normalize load for that single day

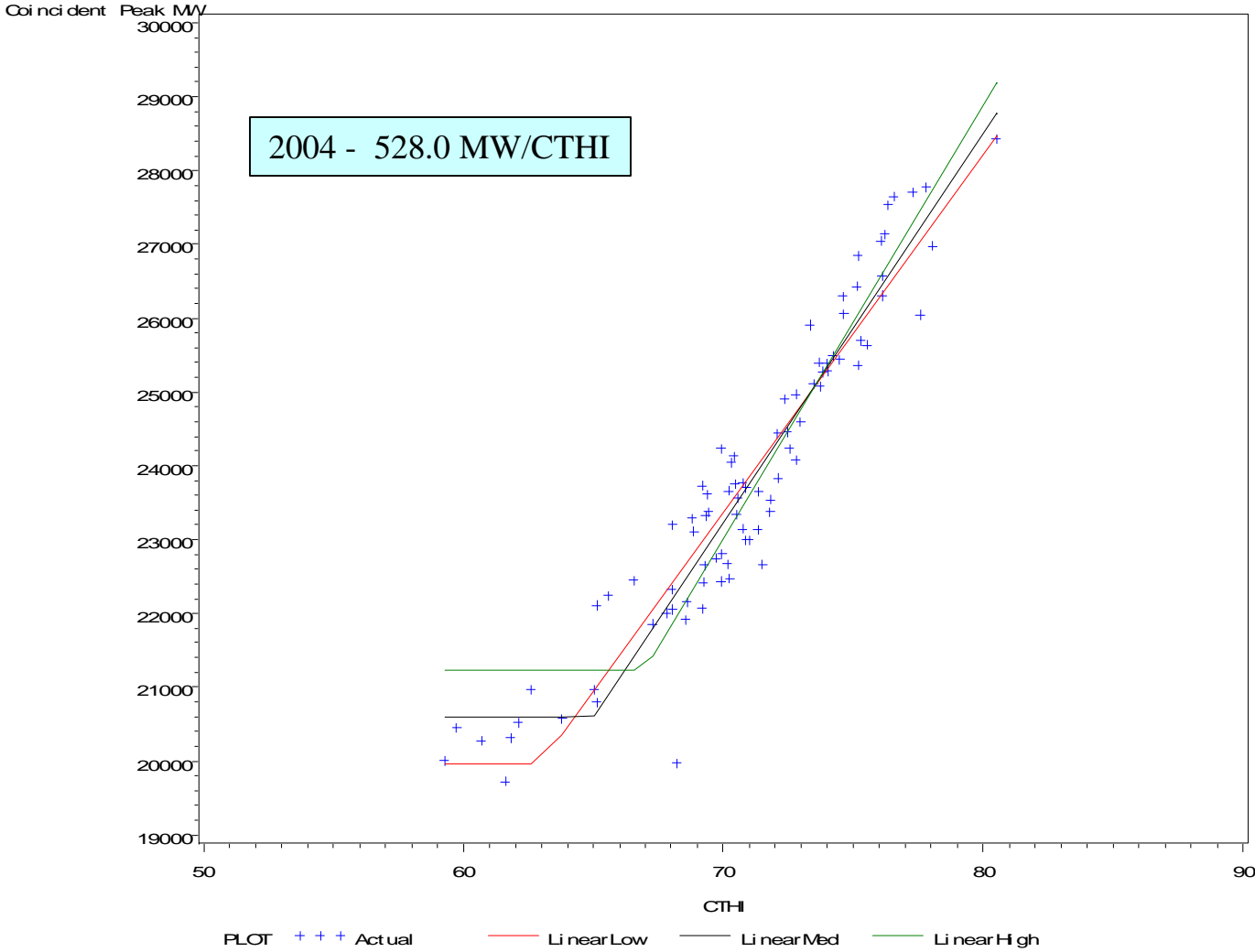
# NYCA — Coincident Peak vs CTHI

Low=63, Med=65, High=67  
Year=2003

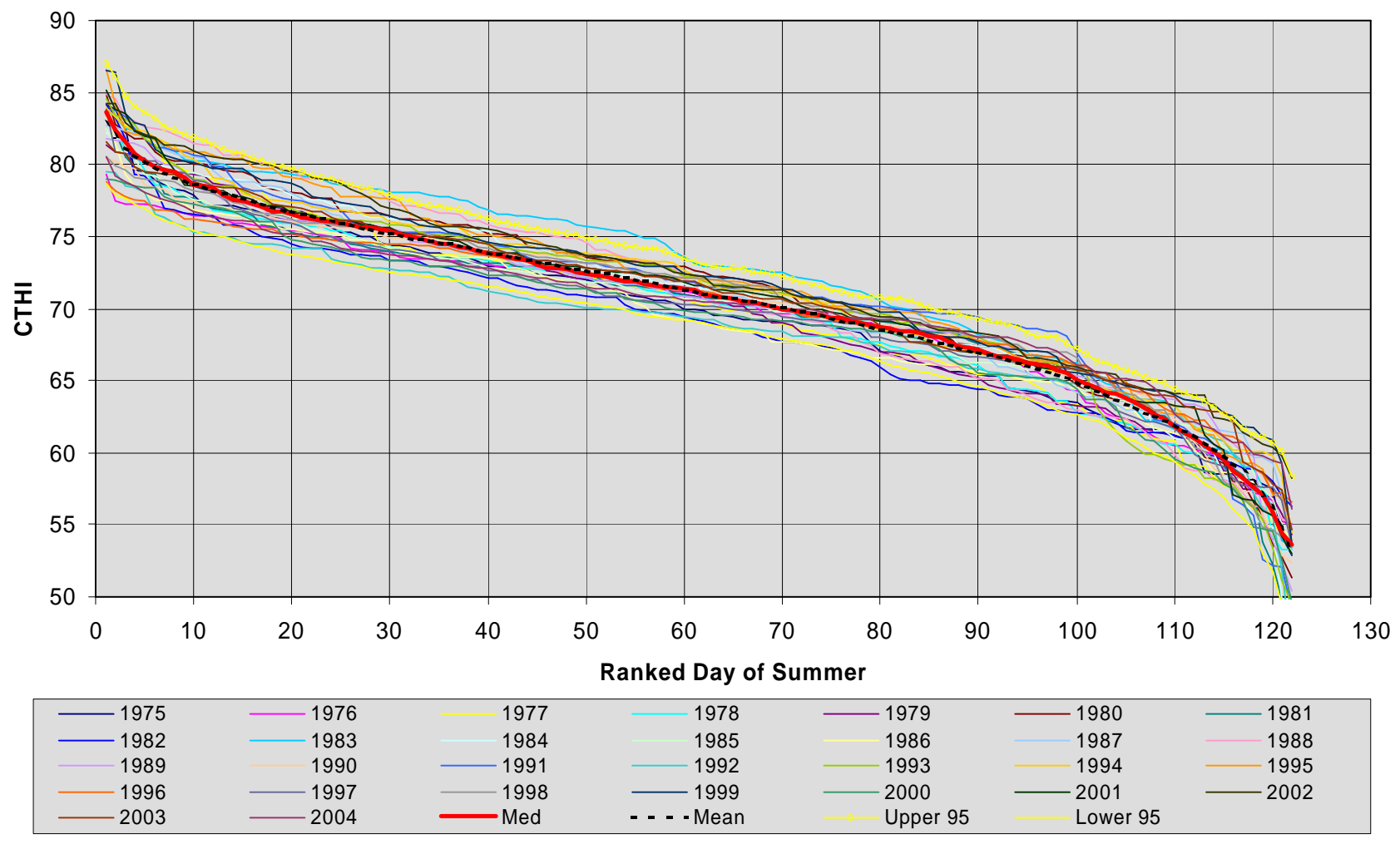


NYCA — Coincident Peak vs CTHI

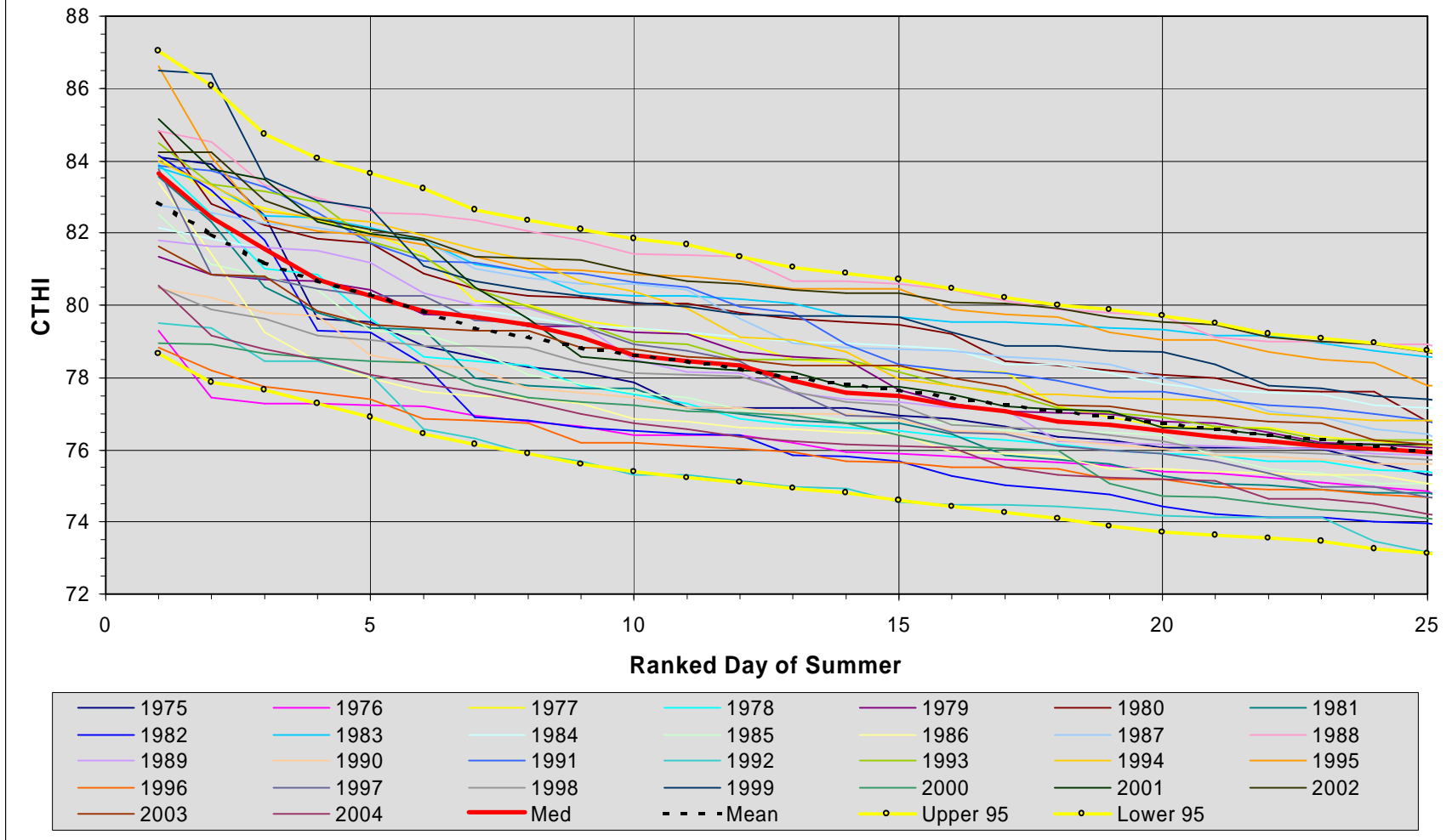
Low=63, Med=65, High=67  
Year=2004



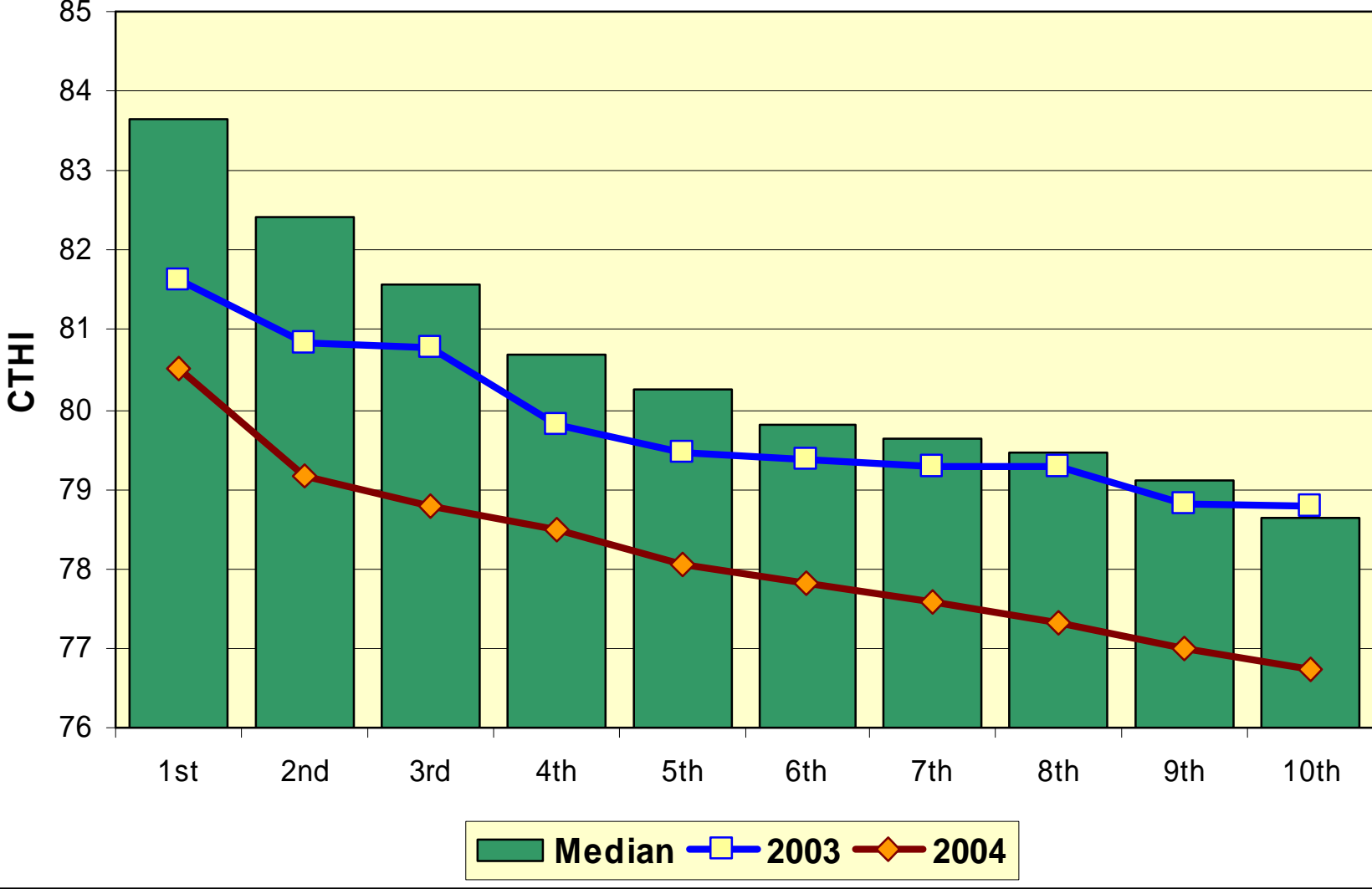
### Summer CTHI Cumulative Distribution Function



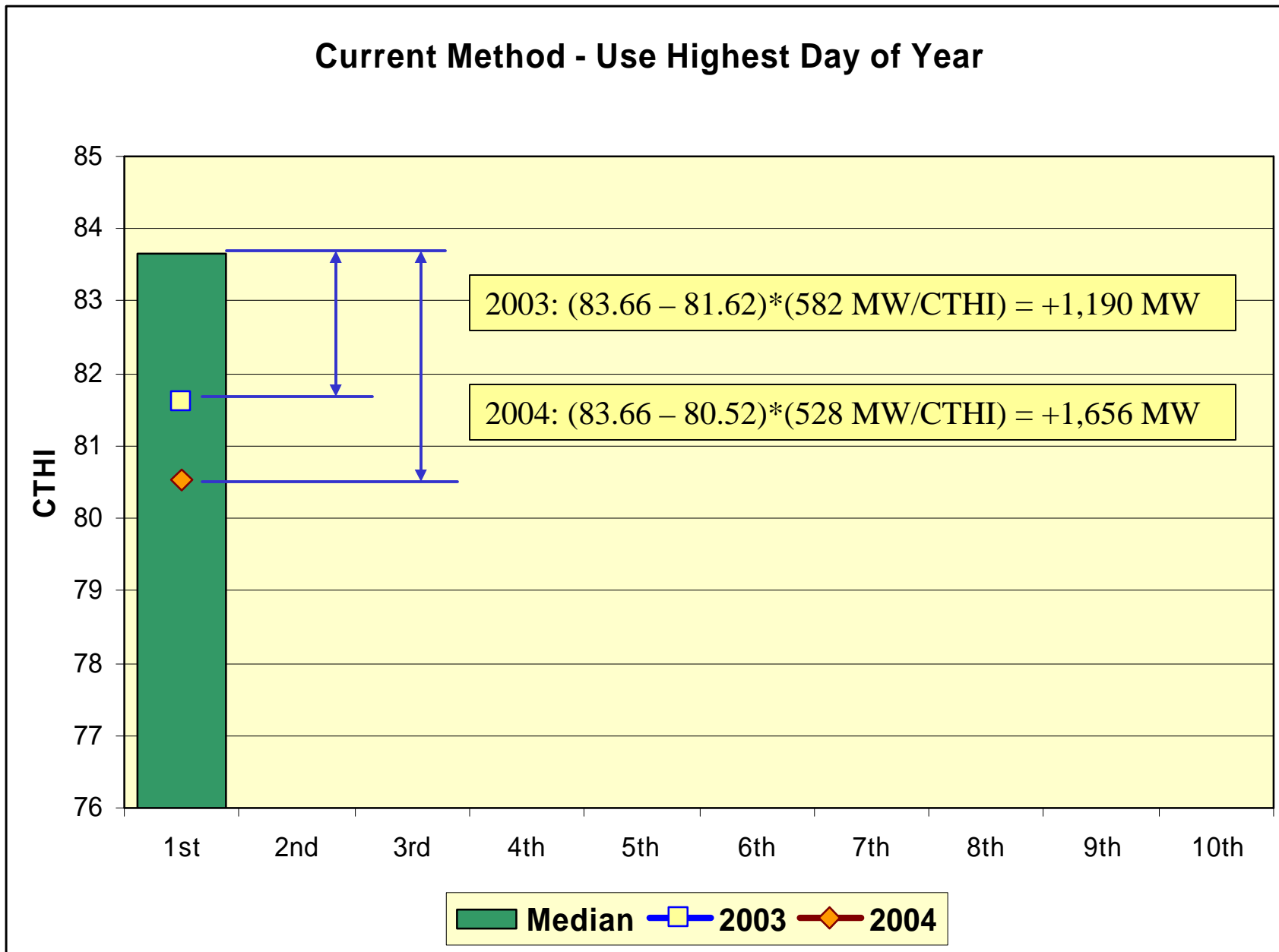
**Summer CTHI Cumulative Distribution Function**  
Top 25 Days



**Ranked Values of Daily CTHI for  
2003, 2004 & 30-Year Median**

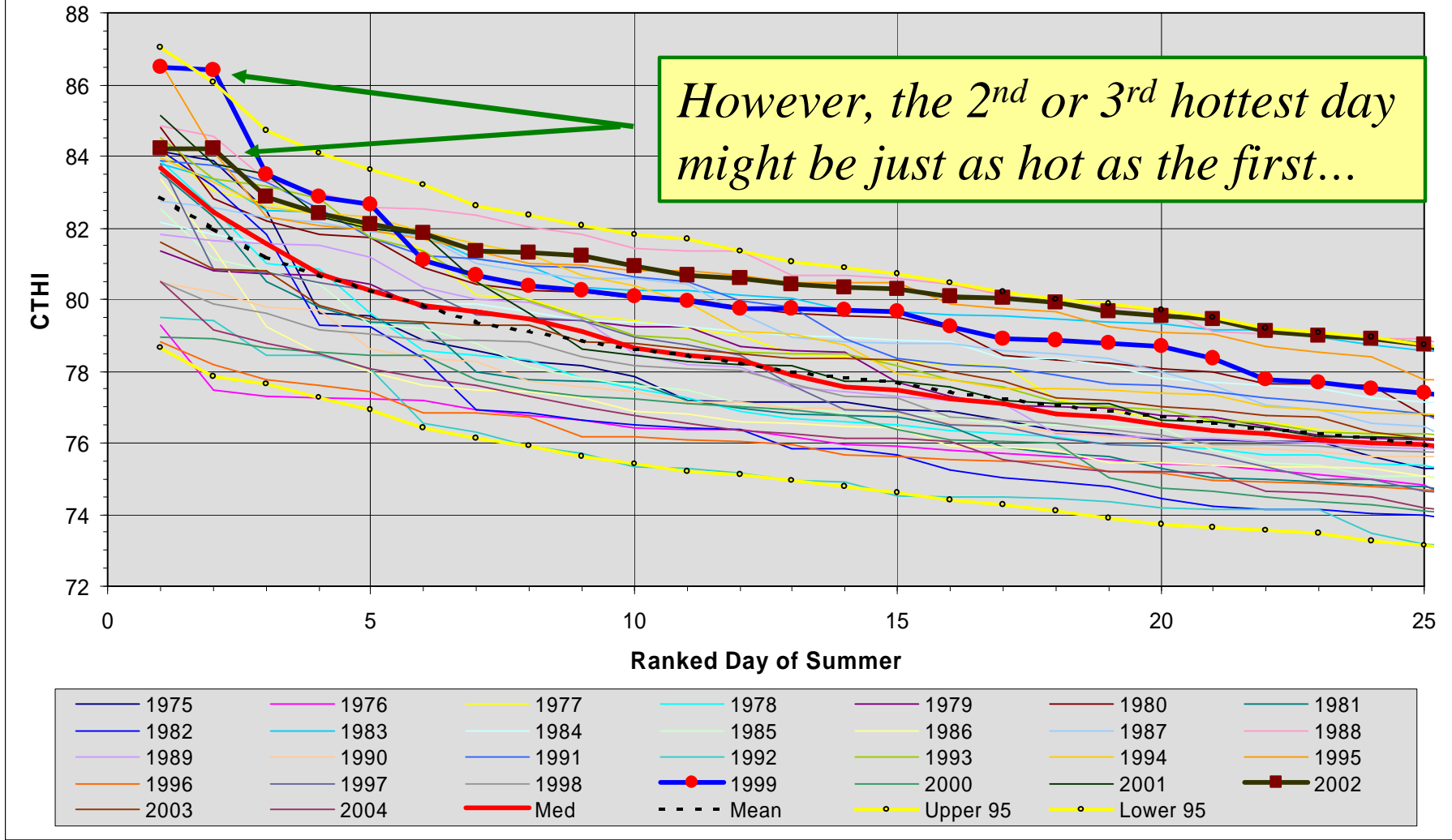


### Current Method - Use Highest Day of Year

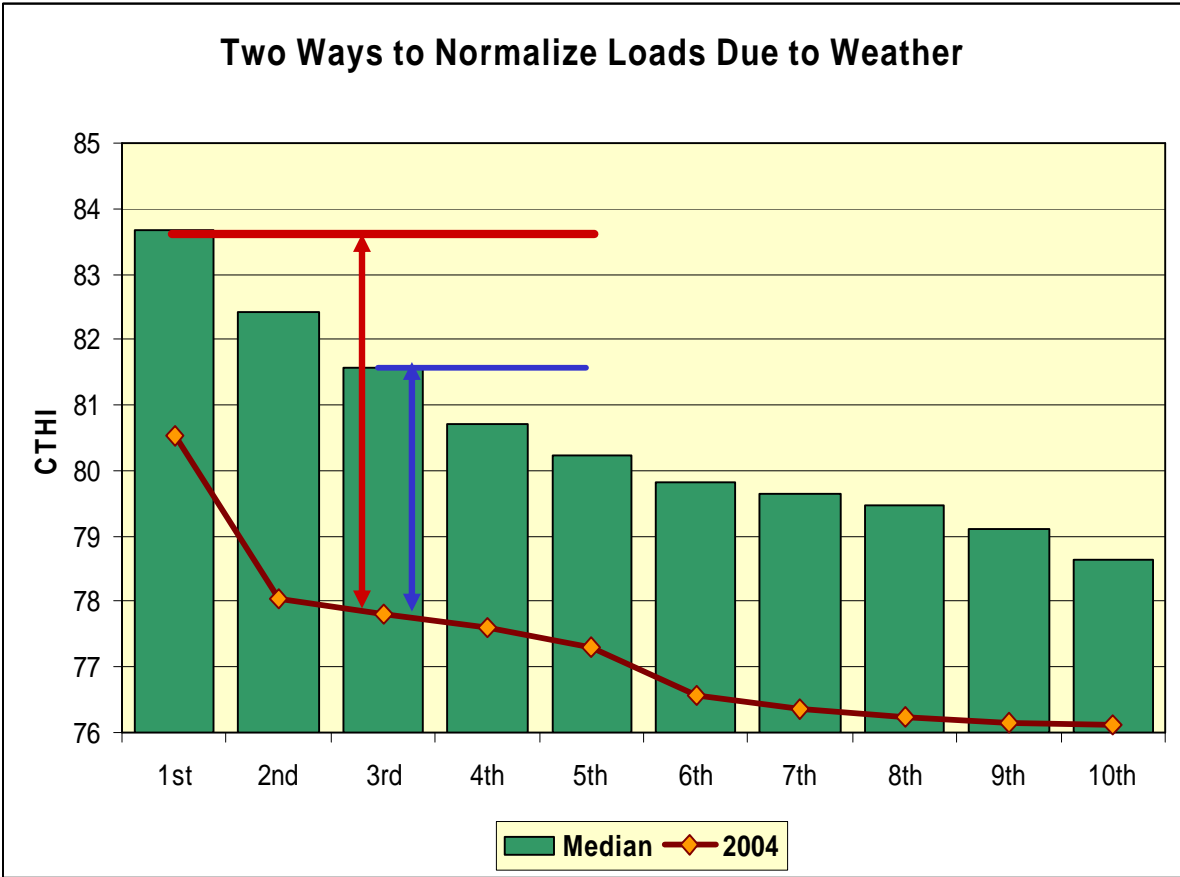




**Summer CTHI Cumulative Distribution Function**  
Top 25 Days



# How To Normalize More Than 1 Day?



1. Normalize Each Day to Highest Value of CTHI?
2. Normalize Each Day to Ranked Value of CTHI?

## Method 1: Use Extreme CTHI for Each of Several Days And Average The Results

### Average of n Highest Days, Weather Adjusted, Using Extreme Value of CTHI

Year	Month	Day	CTHI	MW	Extreme CTHI	MW/CTHI	MW Adj	Weather Adjusted MW	5 Days	3 Days	1 Day
2003	6	26	81.62	30,333	83.66	581.58	1,189	31,522	2	1	1
2003	8	22	80.85	28,855	83.66	581.58	1,637	30,492	4	2	
2003	8	14	80.78	28,709	83.66	581.58	1,677	30,386	5	3	
2003	8	21	79.82	28,427	83.66	581.58	2,235	30,662	3		
2003	7	8	79.47	29,528	83.66	581.58	2,440	31,968	1		
<b>Average of n Highest Days, Weather-Adjusted</b>									<b>31,006</b>	<b>30,800</b>	<b>31,522</b>
2004	6	9	80.52	28,433	83.66	527.95	1,658	30,091	5	1	1
2004	7	22	79.16	27,779	83.66	527.95	2,379	30,158	4	2	
2004	8	3	78.78	27,711	83.66	527.95	2,578	30,289	3	3	
2004	8	2	78.49	27,651	83.66	527.95	2,730	30,381	2		
2004	8	30	78.05	27,541	83.66	527.95	2,962	30,503	1		
<b>Average of n Highest Days, Weather-Adjusted</b>									<b>30,284</b>	<b>30,179</b>	<b>30,091</b>

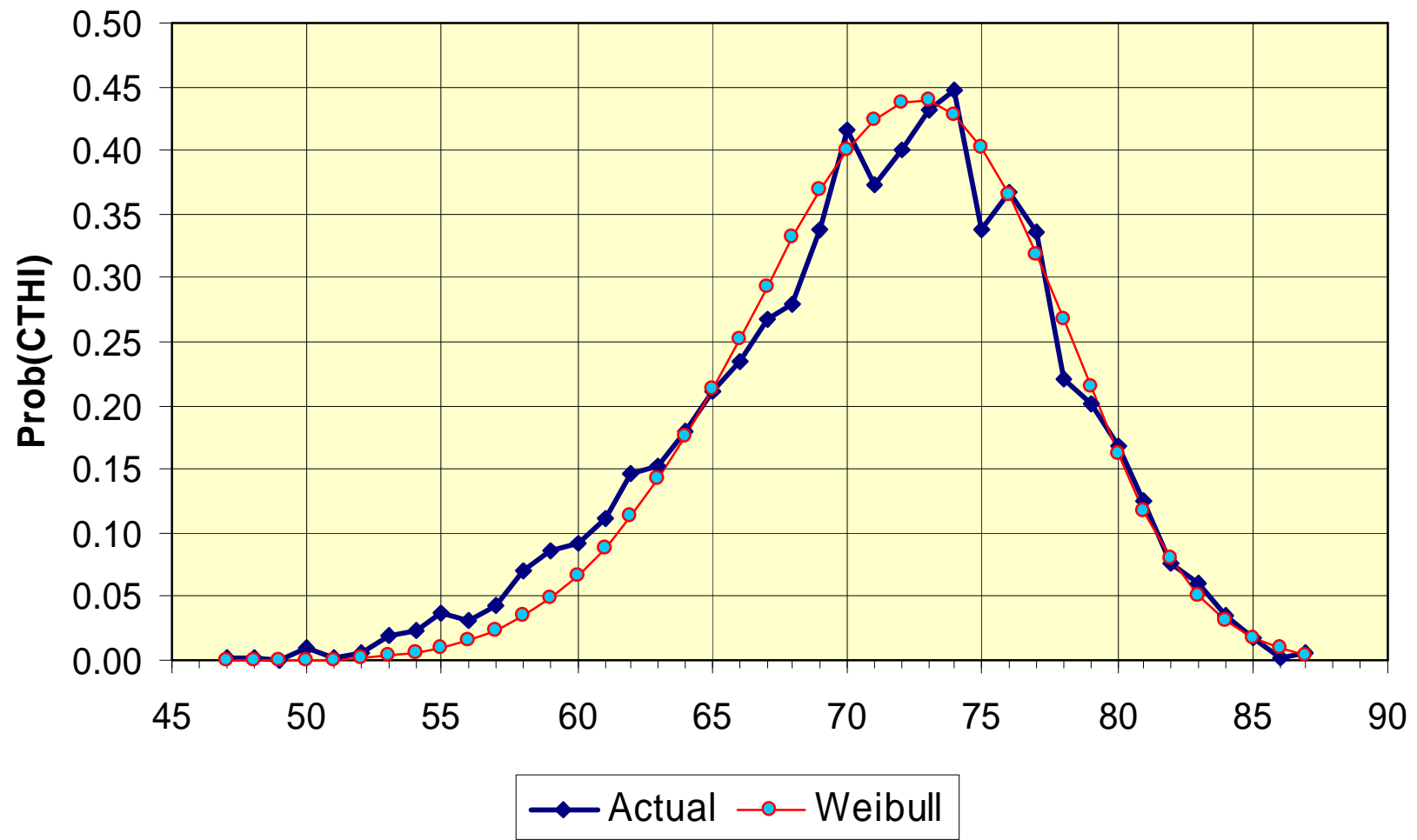
## Method 2: Use Median CTHI Specific to Each Day, Take Highest Single Value

### Maximum of Five Highest Days, Weather Adjusted, Using Median Values of Ranked CTHI Days

Year	Month	Day	CTHI	MW	Median CTHI	MW/CTHI	MW Adj	Weather Adjusted MW	Rank
2003	6	26	81.62	30,333	83.66	581.58	1,189	<b>31,522</b>	<b>1</b>
2003	8	22	80.85	28,855	82.42	581.58	916	29,771	2
2003	8	14	80.78	28,709	81.57	581.58	460	29,169	3
2003	8	21	79.82	28,427	80.70	581.58	509	28,936	4
2003	7	8	79.47	29,528	80.24	581.58	447	29,975	5

Year	Month	Day	CTHI	MW	Median CTHI	MW/CTHI	MW Adj	Weather Adjusted MW	Rank
2004	6	9	80.52	28,433	83.66	527.95	1,658	30,091	2
2004	7	22	77.81	27,779	82.50	527.95	2,478	<b>30,257</b>	<b>1</b>
2004	8	3	77.31	27,711	81.57	527.95	2,250	29,961	3
2004	8	2	76.55	27,651	80.70	527.95	2,189	29,840	4
2004	8	30	76.35	27,541	80.24	527.95	2,052	29,593	5

Statistical Distribution of Summer Daily CTHI - 1975 to 2004



**Statistical Distribution of Summer Daily CTHI - 1975 to 2004**

