# Memorandum

*5172 Western Turnpike, Altamont NY 12009*

To: **Independent Power Producers of NY, Inc.**

CC: **Glenn D. Haake**

From: **Jim Savitt and Steve Balser**

Date: **10/8/01**

Re: **NYISO AMP Analysis**

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The NYISO is pleased to provide to the market the results of its analysis of the performance of the Automated Mitigation Procedure (AMP) during the time period 30 June 2001 through 23 September 2001. In addition to direct answers to the questions posed by IPPNY, the NYISO will address IPPNY's claim that one or more units may have been mitigated improperly. The NYISO is not releasing information protected by the Code of Conduct that is related to specific market participants.

**SUMMARY**

In consultation with the Market Advisor, the NYISO Market Monitoring and Performance Unit (MMP) determined that 228 units totaling approximately 25,000 MW of capacity should be subject to the AMP, and put on the AMP watch list for determination of conduct and impact. Facilities that were deemed unable to exercise market power, such as run-of-river hydro, PURPA, units comprising portfolios of less than 50 MW, and units external to the NYCA, were excluded from the AMP watch list. What remained on the list were those units that either individually were larger than 50 MW, or were part of a portfolio larger than 50 MW.

Every day some units (AMP and non-AMP) failed the conduct test by bidding some portion of their curve beyond the target level. The following are averages of AMP-eligible capacity bid in, parts of which failed the conduct test:

July: 3,966 MW
August: 6,941 MW
September: 5,658 MW

These numbers are daily averages for each month. Of the approximately 25,000 MW subject to the AMP, for example in July, 3,966 MW of facilities bid in some MW that failed the conduct test. While the MMP has detailed data on MW failing conduct on the four days that the AMP mitigated, and somewhat less detailed data for the other days, it is not prepared to release the actual daily MW failing conduct.

There were twelve days in which a zonal LBMP exceeded $150 for at least one hour, causing the AMP to arm and proceed to the impact test. There was a material price impact on four of those days; details are provided in the answers to IPPNY's questions, below.

On the four days in which AMP armed and triggered, there were zone/hour combinations to examine for conduct and impact. At the unit level, there were 534 unit/hour combinations. The latter include hours with multiple units, units across multiple hours, and some single unit/hour combinations. There was no unit that was mitigated every time. Not every unit that was flagged as mitigated was scheduled into the mitigated portion of their bid curve.

As we will show below in the answers to IPPNY's questions, the AMP did indeed work as designed. Our answers below, include some examples that provide clarification how the AMP coding actually worked; we will show that in some of the data that we have provided that looks anomalous, the single rerun of the bid load pass acted upon the data appropriately.

Before we answer the questions posed by IPPNY, we want to address two concerns brought up by IPPNY and others outside of the context of the IPPNY letter. They address the question of certain generators being improperly mitigated under the AMP. Although at least one generator may have been mitigated inappropriately, the circumstances were outside of the AMP, and were due to the methodology used to construct reference levels.

The same problem could have manifested itself in non-AMP mitigation as well. A review of all past non-AMP mitigations turned up no inappropriate mitigations due to improper construction of reference levels.

The MMP has changed the reference curve determination procedure so as to ensure to the extent possible, that the MW segments are consistent with bids. Thus, future requests for changes in reference prices should be passed through in the way that was intended and agreed upon.

## SPECIFIC ISSUES

Issue 1

NYISO Market Monitoring staff examined every unit in every hour to determine the appropriateness of mitigation. On 10 August nineteen units in three zones were mitigated when there was no impact in those zones themselves. However, the telescoping process – described in detail below – caused reference bids to be substituted for those bids failing the conduct test. Seventeen of those nineteen units were scheduled into the mitigated portion of their bid curves, for a total of 125 unit hours and 4,513 MWh.

Two of the seventeen units that were scheduled into the mitigated portion of their curves took issue with the commitment. They claimed that they were improperly mitigated under AMP in light of the fact that they had requested and had been granted a temporary change in their reference prices.

Market Monitoring staff analyzed the situation in detail, and reconstructed all the relevant curves. The MMP's conclusion is that the AMP process worked correctly, given the information that it received from upstream data sources. However, one of the upstream data processes was programmed in a way that led to a segment of the bid curve being perceived as exceeding the threshold. The root of the problem was in the manner that reference curves were developed and passed from the Market Monitoring and Performance Unit to MIS.

In order to allow the maximum flexibility in bidding, and at the same time construct reference prices appropriate to various MW ranges, a unit's bid curve is divided into 10 MW "bins", and a reference price assigned to each bin. The process of re-aggregating up to a six-point curve takes place before the MW bid segments are known for the upcoming SCUC run. To respond to that situation, bid segments were derived by dividing MW between the average mingen MW and the MW level associated with the highest accepted bid-based, adjusted, or negotiated reference price into equal segments such that, considering levels with bid-based, adjusted, negotiated, or estimated reference prices, a six point curve would result if a facility typically bid in that manner.

Those segments are used to construct a reference curve, a target curve, and a bid curve, once the MW bid segments are passed to MIS. The consequence in this case was that the segments and agreed-upon bids were inconsistent with what MIS actually passed to SCUC, and it looked as if the units were bidding beyond their target.

Staff is rerunning SCUC to determine what the commitment level would have been, but for the curve miscalculation. Any redress will be determined pursuant to the provisions of Technical Bulletins 67 and 68. The MMP will be providing a separate explanation, with the curves, to the owner.

Issue 2

The MMP is aware of the possibility that at least one other unit had its bid curve adjusted in a less-than-obvious manner on 2 August, and has investigated that circumstance. It is slightly different from Issue 1, above. In Issue 2, the owner had not requested any change in reference prices, but in fact may have been bidding certain portions beyond target levels. However, the unit was scheduled for ancillary services in portions of the bid curve where the energy bid was beyond the target levels. The AMP process is designed to preserve the ancillary service schedules to the extent possible from the initial bid load pass through the second load bid pass.

The target and reference curves would have to contend with the ancillary services schedule. As in the discussion in Issue 1, the software constructs segments, but those segments are recast in SCUC and in the information that MIS receives from SCUC after it completes its run. The readjustment takes into account the fact that the unit was scheduled for ancillary services.

The curve finally posted by MIS retained the top several points as originally bid, the mingen point as originally bid, one point as the "wall" representing the ancillary services schedule, and the last point just below the "wall." The dollars associated with mingen and

the upper three points were as originally bid. The dollars associated with the point just below the wall are an interpolation of a mitigated bid. The dollars at the "wall" are an interpolation of an unmitigated bid. As with Issue 1, the MMP will provide a detailed explanation to the owner privately.

**IPPNY QUESTIONS**

In response to your letter re: **NYISO AMP Analysis**, please find the information that you requested below. We have researched and answered each of your questions separately.

1. **State the specific hours for each day that the AMP resulted in mitigated bids:**

   On 7/23/2001, AMP mitigated bids in hours 15 through 18.
   On 7/24/2001, AMP mitigated bids in hours 13 through 18.
   On 8/2/2001, AMP mitigated bids in hours 12 through 17.
   On 8/10/2001, AMP mitigated bids in hours 9 through 20.

   An hourly LBMP comparison for each day is provided as Attachment A, pages 1 and 2. The shaded areas indicate the hours for which the zonal LBMP exceeded $150. The comparison highlights in bold, hours in which the LBMP exceeds $150 and mitigation occurred.

   Note that the prices on these pages are those resulting from the bid load pass. They may be different from posted LBMPs, which are the result of the remaining passes of SCUC. Since mitigation under AMP is based on the outcome of the bid load pass, it is appropriate to present those prices in answer to IPPNY's questions.

   As we will explain below, the fact that an hour is marked as "mitigated" does not necessarily mean that a generator was scheduled into a mitigated portion of its bid curve. We will also explain below, the workings of the "telescoping" process and why there is mitigation despite a seeming lack of impact.

2. **Provide an analysis of each hour this summer when the AMP mitigated bids, and confirm:**

   a. **Whether the original bids submitted by each Market Participant mitigated by the AMP exceeded both the conduct threshold and the impact threshold set forth in Sections 3.1 and 3.2 of the NYISO Market Mitigation Measures, and**

   b. **Whether the questioned conduct was "consistent with competitive behavior" as set forth in Section 3.3 of the NYISO Market Mitigation Measures.**

On 7/23/2001, sixty-nine (69) bids exceeded the conduct threshold for several hours across 7 zones, but only one bid exceeded both the conduct and impact threshold for four hours and was mitigated.

On 7/24/2001, sixty-eight (68) bids failed the conduct test for various hours across 6 zones, but only one bid failed both the conduct and impact test for six hours and was mitigated.

On 8/2/2001, seventy-six (76) bids failed the conduct test for up to six hours across 6 zones. Forty bids, across three different zones, failed both the conduct and impact tests for a total of 211 unit-hours. Twenty-eight units were scheduled into mitigated portions of their bid curves for a total of 140 unit-hours and 2,273 MWhrs.

On 8/10/2001, there were 101 units for up to 12 hours and across 5 zones that exceeded the conduct threshold. Thirty-one (31) bids, across 4 zones, exceeded both the conduct and impact thresholds for a total of 313 unit-hours. Eighteen units were scheduled into mitigated portions of their curves for 136 unit-hours and 4,535 MWhrs.

For the two days in July, although conduct exceeded thresholds in several zones, the LBMP exceeded $150 only in one zone – Long Island. The telescoping process for conduct would thus substitute the reference bid set (default bids for units whose bids exceed the target threshold, and original bids for those units whose bids do not exceed the target threshold) only for the Long Island zone. The second run of the load bid pass thus assesses impact only for Long Island.

For the two days in August, the situation is more complex. As with the earlier days, conduct exceeded threshold in several zones. In contrast to the two days in July, LBMPs exceeded $150 in five zones on 2 August, and in all eleven zones of the NYCA on 10 August.

On 10 August, an LBMP above $150 (in at least one zone) west of Total/East triggered substitution of reference bid sets in all zones, in accordance with the telescoping process. The second run of the load bid pass tested for impact in any zone and in any hour for which LBMP exceeded $150. Impact in one zone for one hour was sufficient for SCUC to continue its run with all of the reference bid sets in place.

Thus, what looks to be improper mitigation under AMP (no material price impact), e.g., HB9 in Capital, where the LBMP fell from $153.32 to $151.64, is consistent with the telescoping process and the fact that there is only one rerun of the load bid pass. A different example underscores the telescoping procedure. On 10 August in HB9, Long Island is mitigated from $105.49 to $104.97. While the impact process is the same as in the previous example, a question arises about the fact that Long Island LBMPs are less than $150. Because of the LBMP exceeding $150 in a western zone, the telescoping process calls for substitution of the reference bid set in any zone where the

conduct threshold is exceeded. It is the case that some unit(s) on Long Island failed the conduct test in HB9.

On 2 August, an LBMP above $150 in Hudson Valley called the telescoping process into play for Hudson Valley, Millwood, Dunwoodie, NYC, and Long Island; the reference bid set was used in those zones in the second run of the bid load pass if any units in those zones failed the conduct test. Neither Millwood nor Dunwoodie contained any units that failed the conduct test. However, the other three zones did contain units whose bids failed the conduct test. As it turns out, there was a material price impact in each of the zones for one or another hour, and therefore the 2 August prices were the result of AMP-based mitigation, as were the 10 August, 23 July, and 24 July prices.

Section 3.3 of the Plan speaks to consultation with Market Parties to determine if the conduct in question is consistent with competitive behavior. It is well known and documented that the Market Monitoring staff had numerous consultations with generator owners to develop reference prices where there was no accepted bid history for some part of a unit's range. In addition, the MMP provided a mechanism for generators to contact it, both during and after working hours to explain bidding conduct and seek temporary changes to reference levels.

The resulting reference prices represented the assessment of staff, based on input from generator owners, of an appropriate price for the output range in question. Since owners had knowledge of the reference prices and the target thresholds, bids beyond that level were made with full knowledge that there was a risk of mitigation should the AMP arm.

**3. Confirm whether the AMP mitigated a Market Participant's bid or bids in any zone in any hour where less than 50 MW of the Market Participant's bid exceeded the conduct threshold set forth in Section 3.1 of the NYISO's MMM, and if yes, total number of hours this occurred:**

There was at least one bid on each day where less than 50 MW of the Market Participant's bid exceeded the conduct threshold.

On 7/23/2001, there were four unit-hours where less than 50 MW of a unit's bid was scheduled into the mitigated portion of its curve.

On 7/24/2001, there were six unit-hours where less than 50 MW of a unit's bid was scheduled into the mitigated portion of its curve.

On 8/2/2001, there were 140 unit-hours where less than 50 MW of a unit's bid was scheduled into the mitigated portion of its curve.

On 8/10/2001, there were 104 unit-hours where less than 50 MW of a unit's bid was scheduled into the mitigated portion of its curve.

**4. For each day the AMP activated, specify:**

**a. The total number of hours where the hourly zonal price produced by SCUC <u>prior to mitigation</u> was closer to the New York real time price and**

**b. The total number of hours where the hourly zonal price produced by SCUC <u>post-mitigation</u> was closer to the New York real time price.**

The two tables below provide pre/post AMP comparisons to real-time prices and to BME prices respectively. Note that we are providing an assessment of the 24-hour period.

**SCUC vs. Real-Time Prices**

| Zone | 7/23/2001 | | 7/24/2001 | | 8/2/2001 | | 8/10/2001 | |
|---|---|---|---|---|---|---|---|---|
| | # of Hours Pre-AMP Closer | # of Hours Post AMP Closer | # of Hours Pre-AMP Closer | # of Hours Post AMP Closer | # of Hours Pre-AMP Closer | # of Hours Post AMP Closer | # of Hours Pre-AMP Closer | # of Hours Post AMP Closer |
| Capital | 2 | 22 | 17 | 7 | 2 | 22 | 14 | 10 |
| Central | 2 | 22 | 16 | 8 | 1 | 23 | 8 | 16 |
| Dunwoodie | 2 | 22 | 16 | 8 | 1 | 23 | 17 | 7 |
| Genesee | 3 | 21 | 17 | 7 | 2 | 22 | 8 | 16 |
| Hudson Vly | 2 | 22 | 15 | 9 | 1 | 23 | 15 | 9 |
| Long Island | 3 | 21 | 13 | 11 | 7 | 17 | 15 | 9 |
| Mohawk Vly | 3 | 21 | 17 | 7 | 1 | 23 | 9 | 15 |
| Millwood | 2 | 22 | 15 | 9 | 1 | 23 | 14 | 10 |
| NYC | 2 | 22 | 15 | 9 | 1 | 23 | 17 | 7 |
| North | 4 | 20 | 16 | 8 | 2 | 22 | 9 | 15 |
| West | 5 | 19 | 17 | 7 | 2 | 22 | 9 | 15 |

**SCUC vs. BME Prices**

| Zone | 7/23/2001 | | 7/24/2001 | | 8/2/2001 | | 8/10/2001 | |
|---|---|---|---|---|---|---|---|---|
| | # of Hours Pre-AMP Closer | # of Hours Post AMP Closer | # of Hours Pre-AMP Closer | # of Hours Post AMP Closer | # of Hours Pre-AMP Closer | # of Hours Post AMP Closer | # of Hours Pre-AMP Closer | # of Hours Post AMP Closer |
| Capital | 13 | 11 | 22 | 2 | 7 | 17 | 16 | 8 |
| Central | 10 | 14 | 23 | 1 | 5 | 19 | 11 | 13 |
| Dunwoodie | 15 | 9 | 22 | 2 | 5 | 19 | 16 | 8 |
| Genesee | 11 | 13 | 23 | 1 | 5 | 19 | 11 | 13 |
| Hudson Vly | 13 | 11 | 22 | 2 | 5 | 19 | 15 | 9 |
| Long Island | 12 | 12 | 22 | 2 | 16 | 8 | 18 | 6 |
| Mohawk Vly | 13 | 11 | 22 | 2 | 5 | 19 | 12 | 12 |
| Millwood | 13 | 11 | 22 | 2 | 5 | 19 | 13 | 11 |
| NYC | 15 | 9 | 21 | 3 | 7 | 17 | 19 | 5 |
| North | 13 | 11 | 22 | 2 | 7 | 17 | 12 | 12 |
| West | 12 | 12 | 24 | 0 | 5 | 19 | 12 | 12 |

**5. Confirm for each zone in which bids were mitigated that:**

**a. The hourly zonal prices produced by SCUC prior to mitigation were higher than the prices in PJM; if yes, specify the total number of hours that this occurred in the zones east of Total East and specify the total number of hours that this occurred in the zones West of Total East, and**

**b. Confirm that the hourly zonal prices produced by SCUC prior to mitigation were within 110% of the PJM prices; if yes, specify the total number of hours that this occurred in the zones east of Total East and specify the total number of hours that this occurred in the zones west of Total East.**

**SCUC Pre-Amp Greater than PJM East or West Hub**

| | 7/23/2001 | | 7/24/2001 | | 8/2/2001 | | 8/10/2001 | |
|---|---|---|---|---|---|---|---|---|
| Zone | # of Hours Pre-AMP > than PJM East Hub | # of Hours Pre-AMP > than PJM West Hub | # of Hours Pre-AMP > than PJM East Hub | # of Hours Pre-AMP > than PJM West Hub | # of Hours Pre-AMP > than PJM East Hub | # of Hours Pre-AMP > than PJM West Hub | # of Hours Pre-AMP > than PJM East Hub | # of Hours Pre-AMP > than PJM West Hub |
| Capital | NA | - | NA | - | 3 | - | 1 | - |
| Dunwoodie | NA | - | NA | - | 5 | - | 1 | - |
| Hudson Vly | NA | - | NA | - | 5 | - | 1 | - |
| Long Island | 4 | - | 6 | - | 6 | - | 1 | - |
| Millwood | NA | - | NA | - | 5 | - | 1 | - |
| NYC | NA | - | NA | - | 5 | - | 1 | - |
| Central | - | NA | - | NA | - | NA | - | 7 |
| Genesee | - | NA | - | NA | - | NA | - | 5 |
| Mohawk Vly | - | NA | - | NA | - | NA | - | 8 |
| North | - | NA | - | NA | - | NA | - | 5 |
| West | - | NA | - | NA | - | NA | - | 8 |

NA = Not applicable because AMP was not triggered in this zone

Since it is the position of the NYISO that a comparison with the PJM NYPP Interface DAM prices is a more accurate representation than a comparison with PJM Hub prices, the following table is also provided.

| Zone | 7/23/2001 # of Hours Pre-AMP > than PJM NYPP | 7/24/2001 # of Hours Pre-AMP > than PJM NYPP | 8/2/2001 # of Hours Pre-AMP > than PJM NYPP | 8/10/2001 # of Hours Pre-AMP > than PJM NYPP |
|---|---|---|---|---|
| Capital | NA | NA | 1 | 2 |
| Dunwoodie | NA | NA | 5 | 2 |
| Hudson Vly | NA | NA | 5 | 2 |
| Long Island | 4 | 6 | 6 | 3 |
| Millwood | NA | NA | 5 | 2 |
| NYC | NA | NA | 5 | 2 |
| Central | NA | NA | NA | 1 |
| Genesee | NA | NA | NA | 1 |
| Mohawk Vly | NA | NA | NA | 1 |
| North | NA | NA | NA | 1 |
| West | NA | NA | NA | 1 |

NA = Not applicable because AMP was not triggered in this zone

## SCUC Pre-Amp Greater than PJM East or West, but Within 110% of Same

| Zone | 7/23/2001 # of Hours Pre-AMP w/in 110% PJM East | 7/23/2001 # of Hours Pre-AMP w/in 110% PJM West | 7/24/2001 # of Hours Pre-AMP w/in 110% PJM East | 7/24/2001 # of Hours Pre-AMP w/in 110% PJM West | 8/2/2001 # of Hours Pre-AMP w/in 110% PJM East | 8/2/2001 # of Hours Pre-AMP w/in 110% PJM West | 8/10/2001 # of Hours Pre-AMP w/in 110% PJM East | 8/10/2001 # of Hours Pre-AMP w/in 110% PJM West |
|---|---|---|---|---|---|---|---|---|
| Capital | NA | - | NA | - | 2 | - | 0 | - |
| Dunwoodie | NA | - | NA | - | 0 | - | 0 | - |
| Hudson Vly | NA | - | NA | - | 0 | - | 0 | - |
| Long Island | 0 | - | 0 | - | 0 | - | 0 | - |
| Millwood | NA | - | NA | - | 0 | - | 0 | - |
| NYC | NA | - | NA | - | 0 | - | 0 | - |
| Central | - | NA | - | NA | - | NA | - | 2 |
| Genesee | - | NA | - | NA | - | NA | - | 0 |
| Mohawk Vly | - | NA | - | NA | - | NA | - | 3 |
| North | - | NA | - | NA | - | NA | - | 0 |
| West | - | NA | - | NA | - | NA | - | 3 |

NA = Not applicable because AMP was not triggered in this zone

Since it is the position of the NYISO that a comparison with the PJM NYPP Interface DAM prices is a more accurate representation than a comparison with PJM Hub prices, the following table is also provided.

| Zone | 7/23/2001 # of Hours Pre-AMP is w/in 110% of the PJM NYPP Interface | 7/24/2001 # of Hours Pre-AMP is w/in 110% of the PJM NYPP Interface | 8/2/2001 # of Hours Pre-AMP is w/in 110% of the PJM NYPP Interface | 8/10/2001 # of Hours Pre-AMP is w/in 110% of the PJM NYPP Interface |
|---|---|---|---|---|
| Capital | NA | NA | 0 | 0 |
| Dunwoodie | NA | NA | 0 | 0 |
| Hudson Vly | NA | NA | 0 | 0 |
| Long Island | 0 | 0 | 0 | 0 |
| Millwood | NA | NA | 0 | 0 |
| NYC | NA | NA | 0 | 0 |
| Central | NA | NA | NA | 0 |
| Genesee | NA | NA | NA | 0 |
| Mohawk Vly | NA | NA | NA | 0 |
| North | NA | NA | NA | 0 |
| West | NA | NA | NA | 0 |

NA = Not applicable because AMP was not triggered in this zone

# Hourly LBMP Detail by Zone

## Pre-AMP LBMP - 7/23/2001

| ZONE | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CAPITL | $38.18 | $37.59 | $34.73 | $33.27 | $33.48 | $34.39 | $36.83 | $43.59 | $49.27 | $55.69 | $68.98 | $68.85 | $75.63 | $78.90 | $80.92 | $83.96 | $83.88 | $78.90 | $71.67 | $60.27 | $55.74 | $55.63 | $55.05 | $40.82 |
| CENTRL | $36.33 | $35.69 | $32.84 | $31.50 | $31.73 | $32.59 | $35.11 | $41.38 | $46.06 | $52.31 | $64.74 | $64.74 | $71.25 | $74.55 | $76.47 | $79.10 | $79.10 | $74.40 | $67.52 | $56.83 | $52.05 | $52.43 | $52.39 | $39.15 |
| DUNWOD | $38.74 | $38.10 | $35.37 | $34.05 | $34.23 | $35.16 | $37.44 | $45.13 | $51.09 | $58.59 | $72.64 | $72.70 | $79.86 | $83.54 | $85.61 | $88.82 | $88.65 | $83.47 | $75.54 | $63.47 | $58.48 | $58.47 | $57.30 | $41.26 |
| GENESE | $36.00 | $35.25 | $32.24 | $30.88 | $31.11 | $32.02 | $34.68 | $40.59 | $45.13 | $51.94 | $64.80 | $64.80 | $71.47 | $75.00 | $76.85 | $79.42 | $79.34 | $74.55 | $67.59 | $56.61 | $51.79 | $52.79 | $52.65 | $38.91 |
| HUD VL | $38.63 | $38.02 | $35.23 | $33.85 | $34.07 | $34.96 | $37.33 | $45.09 | $50.95 | $58.43 | $72.51 | $72.57 | $79.78 | $83.47 | $85.61 | $88.74 | $88.65 | $83.47 | $75.61 | $63.59 | $58.48 | $58.41 | $57.19 | $41.14 |
| LONGIL | $35.56 | $35.35 | $34.80 | $34.14 | $34.20 | $34.79 | $35.28 | $38.15 | $41.30 | $58.80 | $73.95 | $84.74 | $106.29 | $102.43 | $132.95 | **$401.96** | **$401.89** | **$401.86** | **$184.51** | $132.67 | $132.63 | $85.18 | $83.23 | $41.26 |
| MHK VL | $37.26 | $36.64 | $33.75 | $32.40 | $32.60 | $33.53 | $36.01 | $42.22 | $47.08 | $53.57 | $66.37 | $66.37 | $72.90 | $76.27 | $78.16 | $80.93 | $80.77 | $76.05 | $69.02 | $58.04 | $53.31 | $53.27 | $52.86 | $40.54 |
| MILLWD | $38.81 | $38.17 | $35.43 | $34.08 | $34.26 | $35.19 | $37.51 | $45.17 | $51.09 | $58.59 | $72.64 | $72.70 | $79.93 | $83.62 | $85.69 | $88.90 | $88.81 | $83.54 | $75.68 | $63.59 | $58.58 | $58.52 | $57.40 | $41.34 |
| N.Y.C. | $39.03 | $38.39 | $35.72 | $35.01 | $35.14 | $35.61 | $37.69 | $45.63 | $51.69 | $60.75 | $73.62 | $93.48 | $97.23 | $99.36 | $125.00 | $102.27 | $125.00 | $84.59 | $76.36 | $63.99 | $59.11 | $59.10 | $57.92 | $41.49 |
| NORTH | $36.89 | $36.27 | $33.48 | $32.14 | $32.34 | $33.23 | $35.75 | $40.68 | $45.13 | $51.31 | $63.50 | $63.50 | $69.75 | $72.75 | $74.62 | $77.43 | $77.35 | $72.98 | $66.16 | $55.63 | $51.31 | $50.43 | $50.14 | $39.51 |
| WEST | $34.74 | $34.09 | $31.09 | $29.75 | $29.94 | $30.76 | $33.32 | $38.80 | $42.61 | $49.51 | $61.67 | $61.48 | $67.81 | $71.10 | $72.93 | $75.28 | $75.44 | $71.03 | $64.66 | $54.43 | $49.57 | $51.01 | $51.40 | $37.32 |

## Post-AMP LBMP - 7/23/2001

| ZONE | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CAPITL | $38.26 | $37.59 | $34.79 | $33.35 | $33.55 | $34.43 | $36.99 | $43.67 | $48.68 | $57.24 | $68.98 | $68.78 | $75.56 | $78.90 | $80.50 | $83.96 | $83.88 | $78.90 | $72.06 | $60.27 | $55.80 | $55.44 | $55.05 | $40.82 |
| CENTRL | $36.45 | $35.80 | $32.97 | $31.64 | $31.82 | $32.70 | $35.23 | $41.42 | $45.51 | $53.77 | $64.74 | $64.67 | $71.25 | $74.55 | $75.99 | $79.10 | $79.10 | $74.40 | $67.89 | $56.83 | $52.11 | $52.05 | $52.39 | $39.15 |
| DUNWOD | $38.78 | $38.10 | $35.40 | $34.06 | $34.26 | $35.20 | $37.60 | $45.21 | $50.53 | $60.22 | $72.64 | $72.56 | $79.86 | $83.54 | $85.16 | $88.82 | $88.65 | $83.47 | $75.96 | $63.47 | $58.54 | $58.00 | $57.30 | $41.26 |
| GENESE | $36.04 | $35.29 | $32.30 | $30.99 | $31.14 | $32.03 | $34.79 | $40.59 | $44.63 | $53.33 | $64.80 | $64.74 | $71.47 | $74.93 | $76.45 | $79.42 | $79.34 | $74.55 | $67.96 | $56.61 | $51.85 | $52.47 | $52.65 | $38.91 |
| HUD VL | $38.67 | $38.02 | $35.26 | $33.90 | $34.10 | $35.04 | $37.49 | $45.13 | $50.34 | $60.06 | $72.51 | $72.50 | $79.78 | $83.47 | $85.16 | $88.74 | $88.65 | $83.47 | $76.03 | $63.59 | $58.54 | $57.95 | $57.25 | $41.14 |
| LONGIL | $35.57 | $35.44 | $34.91 | $34.00 | $34.23 | $34.81 | $35.34 | $38.13 | $41.19 | $60.44 | $73.95 | $84.74 | $106.29 | $102.43 | $133.02 | **$187.68** | **$187.66** | **$187.91** | **$184.58** | $132.62 | $132.63 | $86.03 | $83.23 | $41.26 |
| MHK VL | $37.34 | $36.67 | $33.85 | $32.48 | $32.67 | $33.60 | $36.23 | $42.34 | $46.66 | $55.07 | $66.37 | $66.30 | $72.90 | $76.27 | $77.82 | $80.93 | $80.77 | $76.05 | $69.39 | $58.04 | $53.43 | $52.88 | $52.86 | $40.54 |
| MILLWD | $38.86 | $38.17 | $35.43 | $34.10 | $34.30 | $35.24 | $37.67 | $45.26 | $50.53 | $60.22 | $72.64 | $72.63 | $79.93 | $83.62 | $85.32 | $88.90 | $88.81 | $83.54 | $76.16 | $63.59 | $58.65 | $58.10 | $57.40 | $41.38 |
| N.Y.C. | $39.08 | $38.39 | $35.72 | $35.02 | $35.16 | $35.62 | $37.89 | $45.76 | $51.13 | $61.58 | $73.62 | $93.48 | $97.27 | $99.32 | $125.00 | $102.30 | $125.00 | $84.59 | $76.78 | $63.99 | $59.18 | $58.63 | $57.92 | $41.49 |
| NORTH | $36.93 | $36.31 | $33.54 | $32.22 | $32.41 | $33.30 | $36.02 | $40.80 | $45.05 | $52.73 | $63.50 | $63.44 | $69.75 | $72.75 | $74.23 | $77.43 | $77.35 | $72.98 | $66.52 | $55.63 | $51.37 | $50.12 | $50.14 | $39.51 |
| WEST | $34.74 | $34.12 | $31.15 | $29.89 | $29.93 | $30.76 | $33.36 | $38.80 | $42.14 | $50.84 | $61.67 | $61.41 | $67.89 | $71.10 | $72.47 | $75.28 | $75.44 | $71.03 | $65.02 | $54.43 | $49.63 | $50.64 | $51.40 | $37.36 |

## Pre-AMP LBMP - 7/24/2001

| ZONE | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CAPITL | $37.38 | $36.10 | $33.62 | $33.65 | $33.73 | $33.32 | $35.45 | $43.52 | $51.63 | $55.58 | $63.48 | $67.45 | $72.60 | $79.12 | $83.95 | $88.19 | $91.35 | $84.22 | $79.20 | $63.23 | $58.10 | $57.46 | $55.74 | $41.43 |
| CENTRL | $35.68 | $34.52 | $31.83 | $31.67 | $31.74 | $31.46 | $33.70 | $41.07 | $48.17 | $51.54 | $59.22 | $62.98 | $67.73 | $74.03 | $78.63 | $82.28 | $84.99 | $78.57 | $74.18 | $59.16 | $54.25 | $53.93 | $52.63 | $39.86 |
| DUNWOD | $38.03 | $36.73 | $34.47 | $34.50 | $34.58 | $34.19 | $36.14 | $45.06 | $53.63 | $58.30 | $66.78 | $71.21 | $76.58 | $83.69 | $88.80 | $93.19 | $96.26 | $88.92 | $83.32 | $66.58 | $61.18 | $60.39 | $58.17 | $42.35 |
| GENESE | $35.64 | $34.66 | $31.47 | $31.15 | $31.15 | $31.10 | $33.60 | $40.45 | $47.97 | $51.75 | $60.00 | $63.81 | $68.76 | $75.37 | $80.06 | $83.70 | $86.71 | $79.76 | $75.00 | $59.40 | $54.58 | $54.53 | $52.90 | $40.02 |
| HUD VL | $37.92 | $36.59 | $34.27 | $34.27 | $34.35 | $33.97 | $36.00 | $44.98 | $53.48 | $58.20 | $66.72 | $71.15 | $76.51 | $83.77 | $88.88 | $93.69 | $96.69 | $88.84 | $83.39 | $66.64 | $61.18 | $60.33 | $58.22 | $42.19 |
| LONGIL | $37.28 | $36.01 | $34.69 | $34.67 | $34.67 | $34.61 | $35.41 | $38.81 | $53.78 | $59.40 | $83.53 | $90.33 | $117.65 | **$401.80** | **$401.75** | **$402.08** | **$402.06** | **$401.91** | **$401.87** | $132.82 | $117.50 | $86.62 | $75.79 | $42.47 |
| MHK VL | $36.29 | $35.08 | $32.55 | $32.48 | $32.56 | $32.23 | $34.49 | $42.11 | $49.29 | $53.01 | $60.78 | $64.70 | $69.58 | $76.05 | $80.69 | $84.78 | $87.48 | $80.64 | $75.90 | $60.54 | $55.62 | $54.86 | $53.37 | $41.06 |
| MILLWD | $38.10 | $36.77 | $34.47 | $34.50 | $34.58 | $34.19 | $36.18 | $45.06 | $53.63 | $58.30 | $66.84 | $71.21 | $76.58 | $83.84 | $88.88 | $93.36 | $96.43 | $89.00 | $83.47 | $66.70 | $61.29 | $60.44 | $58.27 | $42.43 |
| N.Y.C. | $38.50 | $37.78 | $35.61 | $35.29 | $35.70 | $35.49 | $36.49 | $45.56 | $54.21 | $60.03 | $67.56 | $92.65 | $96.20 | $100.20 | $102.89 | $125.00 | $125.00 | $102.73 | $125.00 | $67.30 | $61.84 | $61.43 | $59.94 | $42.75 |
| NORTH | $35.82 | $34.63 | $32.22 | $32.19 | $32.26 | $31.91 | $34.25 | $40.82 | $47.29 | $50.86 | $58.26 | $61.96 | $66.70 | $72.75 | $77.19 | $80.95 | $83.61 | $77.45 | $72.83 | $58.15 | $53.43 | $52.09 | $50.58 | $39.62 |
| WEST | $34.63 | $33.68 | $30.33 | $29.88 | $29.85 | $29.85 | $32.26 | $38.71 | $45.83 | $49.55 | $57.30 | $60.75 | $65.46 | $71.63 | $76.16 | $79.62 | $82.06 | $76.10 | $71.70 | $56.95 | $52.33 | $52.90 | $51.53 | $38.81 |

## Post-AMP LBMP - 7/24/2001

| ZONE | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CAPITL | $37.38 | $36.10 | $33.62 | $33.65 | $33.73 | $33.32 | $35.45 | $43.52 | $51.63 | $55.58 | $63.48 | $67.45 | $72.60 | $79.12 | $83.95 | $88.19 | $91.35 | $84.22 | $79.20 | $63.23 | $58.10 | $57.46 | $55.74 | $41.43 |
| CENTRL | $35.68 | $34.52 | $31.83 | $31.67 | $31.74 | $31.46 | $33.70 | $41.07 | $48.17 | $51.54 | $59.22 | $62.98 | $67.73 | $74.03 | $78.63 | $82.28 | $84.99 | $78.57 | $74.18 | $59.16 | $54.25 | $53.93 | $52.63 | $39.86 |
| DUNWOD | $38.03 | $36.73 | $34.47 | $34.50 | $34.58 | $34.19 | $36.14 | $45.06 | $53.63 | $58.30 | $66.78 | $71.21 | $76.58 | $83.69 | $88.80 | $93.19 | $96.26 | $88.92 | $83.32 | $66.58 | $61.18 | $60.39 | $58.17 | $42.35 |
| GENESE | $35.64 | $34.66 | $31.47 | $31.15 | $31.15 | $31.10 | $33.60 | $40.45 | $47.97 | $51.75 | $60.00 | $63.81 | $68.76 | $75.37 | $80.06 | $83.70 | $86.71 | $79.76 | $75.00 | $59.40 | $54.58 | $54.53 | $52.90 | $40.02 |
| HUD VL | $37.92 | $36.59 | $34.27 | $34.27 | $34.35 | $33.97 | $36.00 | $44.98 | $53.48 | $58.20 | $66.72 | $71.15 | $76.51 | $83.77 | $88.88 | $93.69 | $96.69 | $88.84 | $83.39 | $66.64 | $61.18 | $60.33 | $58.22 | $42.19 |
| LONGIL | $37.28 | $36.01 | $34.69 | $34.67 | $34.67 | $34.61 | $35.41 | $38.81 | $53.78 | $59.40 | $83.53 | $90.33 | $100.04 | **$184.55** | **$187.61** | **$186.96** | **$186.57** | **$187.53** | **$188.02** | $132.82 | $117.50 | $86.62 | $75.79 | $42.47 |
| MHK VL | $36.29 | $35.08 | $32.55 | $32.48 | $32.56 | $32.23 | $34.49 | $42.11 | $49.29 | $53.01 | $60.78 | $64.70 | $69.58 | $76.05 | $80.69 | $84.78 | $87.48 | $80.64 | $75.90 | $60.54 | $55.62 | $54.86 | $53.37 | $41.06 |
| MILLWD | $38.10 | $36.77 | $34.47 | $34.50 | $34.58 | $34.19 | $36.18 | $45.06 | $53.63 | $58.30 | $66.84 | $71.21 | $76.58 | $83.84 | $88.88 | $93.36 | $96.43 | $89.00 | $83.47 | $66.70 | $61.29 | $60.44 | $58.27 | $42.43 |
| N.Y.C. | $38.50 | $37.78 | $35.61 | $35.29 | $35.70 | $35.49 | $36.49 | $45.56 | $54.21 | $60.03 | $67.56 | $92.65 | $96.20 | $100.20 | $102.89 | $125.00 | $125.00 | $102.73 | $125.00 | $67.30 | $61.84 | $61.43 | $59.94 | $42.75 |
| NORTH | $35.82 | $34.63 | $32.22 | $32.19 | $32.26 | $31.91 | $34.25 | $40.82 | $47.29 | $50.86 | $58.26 | $61.96 | $66.70 | $72.75 | $77.19 | $80.95 | $83.61 | $77.45 | $72.83 | $58.15 | $53.43 | $52.09 | $50.58 | $39.62 |
| WEST | $34.63 | $33.68 | $30.33 | $29.88 | $29.85 | $29.85 | $32.26 | $38.71 | $45.83 | $49.55 | $57.30 | $60.75 | $65.46 | $71.63 | $76.16 | $79.62 | $82.06 | $76.10 | $71.70 | $56.95 | $52.33 | $52.90 | $51.53 | $38.81 |



Shading indicates Pre-AMP LBMP > $150
**Bold** indicates mitigation occurred

# Hourly LBMP Detail by Zone

## Pre-AMP LBMP - 8/2/2001

| ZONE | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CAPITL | $45.18 | $37.20 | $36.72 | $35.73 | $36.68 | $40.21 | $42.93 | $56.27 | $95.98 | $115.76 | $123.24 | $130.18 | $138.57 | $105.50 | $125.00 | $121.59 | $125.25 | $140.48 | $133.22 | $133.03 | $126.22 | $121.01 | $99.62 | $43.00 |
| CENTRL | $43.16 | $35.39 | $34.93 | $33.96 | $34.97 | $38.68 | $41.42 | $52.01 | $73.67 | $106.81 | $102.66 | $97.87 | $105.63 | $101.93 | $115.88 | $116.43 | $116.10 | $129.72 | $99.82 | $99.63 | $97.41 | $94.00 | $71.24 | $41.09 |
| DUNWOD | $46.41 | $38.36 | $37.96 | $36.97 | $37.86 | $41.31 | $44.10 | $58.37 | $94.38 | $121.25 | $125.18 | $128.50 | $137.48 | $189.68 | $199.37 | $282.98 | $199.75 | $215.46 | $131.45 | $130.88 | $125.00 | $119.78 | $96.13 | $44.54 |
| GENESE | $42.99 | $35.14 | $34.54 | $33.51 | $34.76 | $38.80 | $41.51 | $52.17 | $73.23 | $107.03 | $103.04 | $98.18 | $106.51 | $102.69 | $116.70 | $117.34 | $116.33 | $130.12 | $99.99 | $99.51 | $97.46 | $95.41 | $71.97 | $41.13 |
| HUD VL | $46.41 | $38.28 | $37.82 | $36.80 | $37.75 | $41.23 | $44.10 | $58.37 | $94.28 | $121.15 | $125.00 | $128.25 | $137.33 | **$177.12** | **$186.31** | **$256.03** | **$186.69** | **$202.40** | $131.29 | $130.82 | $125.07 | $120.21 | $96.47 | $44.62 |
| LONGIL | $38.05 | $36.45 | $36.31 | $36.06 | $36.23 | $36.85 | $37.34 | $41.03 | $49.08 | $82.33 | $124.97 | $95.06 | **$302.15** | **$189.89** | **$200.42** | **$283.90** | **$200.69** | **$216.78** | $131.64 | $130.49 | $124.71 | $92.84 | $96.82 | $41.75 |
| MHK VL | $44.70 | $36.69 | $36.22 | $35.24 | $36.22 | $39.90 | $42.80 | $53.43 | $75.50 | $110.58 | $105.34 | $99.78 | $107.99 | $107.49 | $122.92 | $125.45 | $122.56 | $136.53 | $101.98 | $101.89 | $99.98 | $95.79 | $72.31 | $42.63 |
| MILLWD | $46.54 | $38.39 | $37.96 | $36.97 | $37.89 | $41.35 | $44.15 | $58.37 | $94.52 | $121.25 | $125.23 | $128.61 | $137.70 | $188.13 | $197.91 | $279.75 | $198.29 | $214.02 | $131.66 | $131.09 | $125.29 | $120.05 | $96.44 | $44.67 |
| N.Y.C. | $46.81 | $38.72 | $38.29 | $37.29 | $38.18 | $41.63 | $44.44 | $58.79 | $94.89 | $122.33 | $126.30 | $129.55 | $138.72 | **$190.90** | **$200.78** | **$284.25** | **$201.04** | **$216.78** | $132.33 | $131.56 | $125.67 | $120.51 | $96.68 | $44.88 |
| NORTH | $43.78 | $36.01 | $35.54 | $34.62 | $35.54 | $39.19 | $41.97 | $51.49 | $71.08 | $105.30 | $99.01 | $92.33 | $100.02 | $98.90 | $115.53 | $114.46 | $116.22 | $129.72 | $95.57 | $95.86 | $94.80 | $89.26 | $66.75 | $41.42 |
| WEST | $42.46 | $34.45 | $33.86 | $32.85 | $34.15 | $38.41 | $41.17 | $51.59 | $72.09 | $105.41 | $101.46 | $97.18 | $105.89 | $101.25 | $114.25 | $114.12 | $113.64 | $127.36 | $99.05 | $98.27 | $96.21 | $95.06 | $71.73 | $40.46 |

## Post-AMP LBMP - 8/2/2001

| ZONE | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CAPITL | $45.18 | $37.20 | $36.72 | $35.73 | $36.68 | $40.20 | $42.72 | $57.86 | $95.95 | $115.76 | $122.02 | $130.36 | $163.60 | $130.70 | $149.03 | $133.26 | $136.66 | $140.93 | $138.06 | $137.96 | $125.27 | $120.49 | $98.92 | $42.40 |
| CENTRL | $43.16 | $35.39 | $34.93 | $33.96 | $34.97 | $38.67 | $41.22 | $53.49 | $74.29 | $106.81 | $101.52 | $98.04 | $128.82 | $98.79 | $115.49 | $100.75 | $104.02 | $107.58 | $104.27 | $104.16 | $99.29 | $95.03 | $71.24 | $40.51 |
| DUNWOD | $46.41 | $38.36 | $37.96 | $36.97 | $37.86 | $41.29 | $43.89 | $60.02 | $94.58 | $121.25 | $123.89 | $128.69 | $163.84 | $129.85 | $149.15 | $132.55 | $136.20 | $140.39 | $136.52 | $136.03 | $125.00 | $119.77 | $95.62 | $43.92 |
| GENESE | $42.99 | $35.14 | $34.54 | $33.51 | $34.76 | $38.79 | $41.30 | $53.65 | $73.87 | $107.03 | $101.90 | $98.35 | $130.01 | $99.30 | $115.83 | $101.32 | $103.81 | $107.48 | $104.47 | $104.05 | $99.39 | $96.50 | $71.98 | $40.55 |
| HUD VL | $46.41 | $38.28 | $37.82 | $36.80 | $37.75 | $41.22 | $43.89 | $60.02 | $94.48 | $121.15 | $123.72 | $128.45 | $163.69 | **$129.70** | **$149.00** | **$132.83** | **$136.05** | **$140.24** | $136.37 | $135.98 | $125.09 | $120.22 | $95.97 | $44.00 |
| LONGIL | $38.05 | $36.45 | $36.31 | $36.06 | $36.23 | $36.85 | $37.30 | $41.10 | $49.14 | $82.33 | $89.32 | $92.82 | **$163.21** | **$130.04** | **$150.17** | **$133.34** | **$148.34** | **$141.45** | $136.73 | $114.67 | $124.70 | $92.86 | $96.32 | $41.64 |
| MHK VL | $44.70 | $36.69 | $36.22 | $35.24 | $36.22 | $39.88 | $42.60 | $54.95 | $76.19 | $110.58 | $104.18 | $99.96 | $131.98 | $101.13 | $118.78 | $103.45 | $106.63 | $110.21 | $106.57 | $106.56 | $102.04 | $96.92 | $72.34 | $42.03 |
| MILLWD | $46.54 | $38.39 | $37.96 | $36.97 | $37.89 | $41.33 | $43.93 | $60.02 | $94.72 | $121.25 | $123.95 | $128.81 | $164.08 | $129.96 | $149.38 | $132.76 | $136.42 | $140.61 | $136.74 | $136.24 | $125.28 | $120.04 | $95.93 | $44.04 |
| N.Y.C. | $46.81 | $38.72 | $38.29 | $37.29 | $38.18 | $41.61 | $44.23 | $60.46 | $95.09 | $122.33 | $125.00 | $129.74 | $165.36 | **$131.01** | **$150.51** | **$133.64** | **$137.32** | **$141.45** | $137.44 | $136.74 | $125.69 | $120.52 | $96.18 | $44.25 |
| NORTH | $43.78 | $36.01 | $35.54 | $34.62 | $35.54 | $39.18 | $41.76 | $52.95 | $71.81 | $105.30 | $97.90 | $92.50 | $122.78 | $93.82 | $111.52 | $96.86 | $100.58 | $104.04 | $99.99 | $100.38 | $97.11 | $90.50 | $66.85 | $40.84 |
| WEST | $42.46 | $34.45 | $33.86 | $32.85 | $34.15 | $38.39 | $40.97 | $53.06 | $72.69 | $105.41 | $100.35 | $97.35 | $129.09 | $98.29 | $114.16 | $98.98 | $102.18 | $105.98 | $103.45 | $102.72 | $98.02 | $96.09 | $71.72 | $39.90 |

## Pre-AMP LBMP - 8/10/2001

| ZONE | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CAPITL | $48.29 | $41.70 | $40.47 | $40.14 | $40.03 | $41.70 | $41.82 | $57.87 | $110.51 | $153.32 | $173.18 | $195.62 | $216.22 | $233.32 | $298.01 | $305.73 | $276.77 | $207.40 | $199.55 | $152.19 | $123.32 | $123.80 | $76.58 | $50.74 |
| CENTRL | $45.93 | $39.69 | $38.41 | $38.09 | $37.91 | $39.65 | $39.60 | $53.47 | $102.03 | $141.56 | **$158.54** | **$170.99** | **$181.48** | **$188.13** | **$214.96** | **$215.68** | **$205.08** | **$167.90** | **$153.21** | $130.16 | $112.77 | $107.88 | $70.47 | $47.68 |
| DUNWOD | $49.22 | $42.46 | $41.29 | $40.99 | $40.87 | $42.50 | $42.79 | $59.77 | $113.07 | $156.58 | $177.32 | $198.33 | $216.30 | $230.73 | $285.76 | $291.66 | $267.54 | $204.96 | $193.91 | $152.12 | $125.82 | $124.47 | $79.07 | $52.39 |
| GENESE | $46.30 | $39.73 | $38.25 | $37.86 | $37.56 | $39.53 | $39.20 | $53.41 | $102.74 | $142.83 | $158.54 | $169.98 | $177.61 | $181.54 | $203.27 | $204.03 | $193.68 | $165.85 | $151.47 | $129.36 | $112.43 | $108.64 | $70.68 | $47.19 |
| HUD VL | $49.26 | $42.38 | $41.18 | $40.87 | $40.76 | $42.38 | $42.67 | $59.77 | $113.17 | **$156.86** | **$177.80** | **$198.82** | **$216.96** | **$231.37** | **$286.37** | **$292.25** | **$268.04** | **$205.42** | **$194.46** | **$152.63** | $126.27 | $125.00 | $79.35 | $52.49 |
| LONGIL | $41.99 | $39.43 | $38.83 | $38.56 | $38.50 | $39.07 | $39.92 | $47.00 | $113.07 | **$105.49** | **$178.27** | **$200.22** | **$219.01** | **$405.40** | **$405.90** | **$406.11** | **$406.09** | **$404.98** | **$196.61** | **$153.94** | **$403.95** | $124.47 | $87.07 | $53.02 |
| MHK VL | $47.50 | $41.09 | $39.81 | $39.44 | $39.29 | $41.02 | $41.30 | $55.48 | $106.52 | $147.79 | $166.33 | $179.04 | $188.76 | $194.24 | $219.38 | $220.00 | $209.85 | $175.56 | $159.45 | $136.20 | $118.33 | $112.38 | $72.81 | $49.18 |
| MILLWD | $49.40 | $42.54 | $41.37 | $41.07 | $40.95 | $42.54 | $42.83 | $59.88 | $113.17 | $156.86 | $177.64 | $198.73 | $216.78 | $231.28 | $286.59 | $292.73 | $268.28 | $205.60 | $194.56 | $152.57 | $126.16 | $124.83 | $79.28 | $52.58 |
| N.Y.C. | $62.64 | $45.35 | $44.68 | $44.50 | $44.44 | $44.99 | $44.73 | $60.26 | $113.68 | $157.00 | $177.95 | $199.19 | $217.20 | $231.47 | $286.78 | $292.69 | $268.52 | $205.62 | $193.76 | $138.98 | $125.08 | $124.90 | $79.70 | $52.78 |
| NORTH | $45.93 | $39.93 | $38.72 | $38.36 | $38.25 | $39.89 | $40.73 | $53.79 | $99.98 | $138.72 | $155.83 | $166.96 | $174.61 | $178.40 | $197.71 | $197.98 | $190.17 | $162.37 | $146.29 | $127.10 | $111.29 | $103.97 | $69.26 | $48.17 |
| WEST | $46.11 | $39.45 | $38.02 | $37.67 | $37.33 | $39.37 | $38.60 | $53.20 | $103.56 | $143.83 | **$157.74** | **$168.36** | **$183.54** | **$193.65** | **$228.68** | **$229.45** | **$217.82** | **$163.87** | **$151.35** | $129.63 | $112.66 | $109.67 | $70.75 | $46.56 |

## Post-AMP LBMP - 8/10/2001

| ZONE | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CAPITL | $48.44 | $41.70 | $40.46 | $40.10 | $40.03 | $41.70 | $41.82 | $57.87 | $110.51 | $151.64 | $163.04 | $188.08 | $204.76 | $233.63 | $280.28 | $299.93 | $265.95 | $212.34 | $185.80 | $154.15 | $123.43 | $124.00 | $82.63 | $49.96 |
| CENTRL | $45.98 | $39.69 | $38.39 | $38.02 | $37.91 | $39.65 | $39.60 | $53.47 | $102.03 | $140.28 | **$149.54** | **$166.46** | **$171.99** | **$184.02** | **$192.38** | **$193.56** | **$177.37** | **$156.99** | **$132.56** | $119.32 | $112.87 | $107.97 | $75.89 | $46.86 |
| DUNWOD | $49.46 | $42.46 | $41.27 | $40.95 | $40.87 | $42.50 | $42.79 | $59.77 | $113.07 | $154.73 | $166.94 | $191.39 | $204.90 | $229.43 | $265.49 | $280.31 | $251.00 | $204.91 | $177.25 | $150.00 | $125.93 | $124.57 | $85.39 | $51.54 |
| GENESE | $46.39 | $39.73 | $38.24 | $37.79 | $37.56 | $39.53 | $39.20 | $53.41 | $102.84 | $142.38 | $149.99 | $165.52 | $169.51 | $176.23 | $181.62 | $182.93 | $171.40 | $154.78 | $130.85 | $118.34 | $112.53 | $108.72 | $76.05 | $46.24 |
| HUD VL | $49.46 | $42.38 | $41.16 | $40.83 | $40.76 | $42.38 | $42.67 | $59.77 | $113.27 | **$155.01** | **$167.39** | **$191.87** | **$205.52** | **$230.03** | **$265.99** | **$280.75** | **$251.39** | **$205.30** | **$177.70** | **$150.43** | $126.38 | $124.99 | $85.69 | $51.77 |
| LONGIL | $42.07 | $39.43 | $38.82 | $38.52 | $38.54 | $39.07 | $39.92 | $47.00 | $91.70 | **$104.97** | **$167.54** | **$193.23** | **$207.47** | **$232.51** | **$268.69** | **$283.70** | **$253.86** | **$207.66** | **$179.30** | **$152.86** | **$127.86** | $121.16 | $86.92 | $52.30 |
| MHK VL | $47.60 | $41.09 | $39.79 | $39.41 | $39.29 | $41.02 | $41.30 | $55.48 | $106.52 | $146.31 | $156.74 | $174.39 | $179.35 | $189.30 | $195.56 | $194.96 | $181.96 | $163.38 | $137.42 | $124.25 | $118.44 | $112.48 | $78.50 | $49.05 |
| MILLWD | $49.60 | $42.54 | $41.35 | $41.03 | $40.95 | $42.54 | $42.83 | $59.88 | $113.17 | $155.01 | $167.24 | $191.76 | $205.34 | $230.00 | $266.31 | $281.24 | $251.80 | $205.61 | $177.89 | $150.50 | $126.27 | $124.93 | $85.62 | $51.77 |
| N.Y.C. | $62.72 | $45.35 | $44.67 | $44.48 | $44.44 | $44.99 | $44.73 | $60.26 | $113.78 | $155.01 | $167.54 | $192.22 | $205.58 | $230.14 | $266.40 | $281.21 | $251.84 | $205.52 | $177.25 | $150.00 | $125.93 | $125.00 | $86.08 | $51.87 |
| NORTH | $46.02 | $39.93 | $38.70 | $38.33 | $38.25 | $39.89 | $40.73 | $53.79 | $99.98 | $137.33 | $146.84 | $162.89 | $166.17 | $173.22 | $174.93 | $173.95 | $162.21 | $149.09 | $124.64 | $114.36 | $111.39 | $104.06 | $74.59 | $47.34 |
| WEST | $46.21 | $39.45 | $38.00 | $37.59 | $37.33 | $39.37 | $38.60 | $53.20 | $103.56 | $143.65 | **$149.39** | **$163.87** | **$171.77** | **$191.84** | **$205.19** | **$206.36** | **$180.78** | **$153.65** | **$131.14** | $119.02 | $112.76 | $109.87 | $76.05 | $45.57 |